**INVENTUM ENGINEERING, PC**

April 21, 20266

To: Benjamin McPherson (NYSDEC)

From: John Black, P.E (Inventum)

CC: John Yensan (OSC); Al Trpevski (OSC); James Edwards (Inventum)

RE: Assessment and Management of the Laboratory Building Sanitary Sewer Investigation Work Plan
3821 River Road, Inc.
Brownfield Cleanup Program Site No. C915003
3821 River Road
Town of Tonawanda, New York

Inventum Engineering, P.C. (Inventum), on behalf of 3821 River Road, Inc. (3821 River Road), has prepared this Assessment and Management of the Laboratory Building Sanitary Sewer Investigation Work Plan (Laboratory Sewer Work Plan) for the 3821 River Road Brownfield Cleanup Program (BCP) Site (#C915003) located at 3821 River Road, Town of Tonawanda, New York (BCP Site). A recent aerial photograph of the BCP Site showing the location of the remaining Laboratory Building slab, also referred to as Building 22, is provided as Figure 1 to this Laboratory Sewer Work Plan. The former Laboratory Building, which has now been razed, was a two-story building constructed with a slab-on-grade foundation. The former laboratory occupied the majority of the ground floor. A utility chase was constructed into the building slab. The laboratory sanitary sewer pipes along with other building utilities are located in the chase. The location of the utility chase is shown on the attached Figure 2. The former location of the laboratory rooms along with the other ground floor building features such as offices, locker rooms, bathrooms and showers are shown on Figure 3. There were laboratories on both the ground floor and the second floor.

## Purpose

The 3821 River Road BCP Site was originally developed by Allied Fibers and Plastics Company (Allied[1]) in the early 1950s, and was operated as a manufacturing facility through 1982. Site operations by Allied reportedly included the polymerization of ethylene into low molecular weight polyethylene (trademark: A-C Polyethylene and Co-polymers), which was finished into powder, pelleted and solid forms. Allied sold the property to Rouse Breihan, Inc. in 1985, following the shutdown of all chemical processing activities. The Laboratory Building continued to be used to conduct laboratory testing for the neighboring Tonawanda Coke Corporation (TCC) facility between 1985 and 2018. The use of the Laboratory Building ceased when the TCC facility was permanently shut down in October of 2018. 3821 River Road purchased the Site from Rouse Breihan Inc. on August 2, 2022.

After the TCC facility shutdown, the Laboratory Building was not decommissioned by TCC or Rouse Breihan personnel and laboratory supplies including chemicals, testing equipment, and glassware

[1] AlliedSignal acquired Honeywell International, Inc. in 1999 but the merged entity retained the Honeywell name.

remained in place when 3821 River Road took possession of the property. 3821 River Road and Ontario Specialty Contracting, Inc (OSC) contracted a former laboratory staff member and The Environmental Service Group (ESG) to complete the assessment and waste classification of laboratory chemical supplies for preparation of lab packs for disposal. Lab packed chemical disposal begin in April 2024 and was completed in April 2025. During the chemical characterization and lab packing, the former laboratory staff member mentioned that he believed mercury was disposed in the sanitary drains at the laboratory.

An approximate 114-linear feet utility chase is constructed into the concrete slab. The utility chase measures approximately 2-feet in width and 3-feet in depth. The location of the utility chase is shown on Figures 2 and 3. The utility chase contains the following tentatively identified laboratory building utilities:

- 3-inch ductile iron sanitary sewer
- 2-inch piping, municipal water supply
- Three 1-inch pipes, electrical conduits and natural gas for the laboratory equipment and possibly heating.

On February 26, 2024, OSC removed the ductile iron p-trap sanitary sewer drains from each of the utility sinks and the floor drain piping that connected the sanitary sewer piping in the utility chase within the laboratory portions of the building. Inventum inspected the removed pipes for any evidence of laboratory chemical waste disposal. No evidence of waste disposal was observed in the removed p-traps sink drains or floor drain piping. Absent any evidence of laboratory chemicals, the removed piping was managed as recyclable metal.

Universal waste, laboratory chemicals, and asbestos containing materials (ACM) were removed from the Laboratory Building and properly managed for offsite disposal prior to the building being demolished which began in July 2024. During the demolition, all recyclable metals were separated from concrete for recycling and the concrete was crushed and is currently staged onsite east of the Laboratory Building pad and north of the former location of ethylene tanks 10 and 11. The crushed concrete generated from the Laboratory Building was also mixed with crushed concrete from the Brick or Welding Shop (Building 11) and the Administration Building (Building 23). This pile of crushed concrete is identified as Pile 2. The Laboratory Building slab and piping within the utility chase as described within this section still remains in place and the utility chase is covered with steel plates.

A historical figure produced for Semet Solvay Division, Niagara River Petrochemical Plant, Underground Piping, Sheet No: 1, 60053. T-M-41-N dated August 8, 1953 (Figure 60053) was recovered on the former TCC facility and reviewed to determine where the sanitary sewer piping exits the Laboratory Building. An excerpt from the referenced Figure 60053 showing the area around the Laboratory Building is provided as Figure 4 and the full-size Figure 60053 is provided in Appendix E. The Underground Piping on the historical figure includes one 4-inch cast iron (C.I.) sanitary sewer drain draining to the northwest from the northwest corner of the Laboratory Building pad and a second 4-inch cast iron sanitary sewer drain exiting the Laboratory Building to the north from the northern center portion of the existing building pad. The location of the 4-inch cast iron sanitary sewer lines that exit the Laboratory Building are shown on Figure 2.

This Laboratory Sewer Work Plan outlines the steps to fully assess the sanitary sewer piping in the utility chase for potential impacts of laboratory chemicals that may have been disposed of in the sanitary sewer drains and piping. Test pits will be advanced at two locations (Figure 2). The locations were selected based

on the historical Underground Piping figure from 1953 where the sanitary sewer exits the Laboratory Building. The intent of the test pit excavations are to (1) determine if the sanitary sewers exist in the location indicated on the historical Underground Piping figure and (2) assess the condition of any remaining pipe and characterize contents of the sanitary sewer piping and characterize the pipe bedding material, if present.

## Piping Assessment and Sampling

An estimated 114-linear feet of sanitary sewer piping is present in the utility chase along with pipes assumed to be municipal water supply, gas, and electrical conduits.

Sanitary sewer piping may contain solids and residuals from laboratory chemical disposal in the sanitary sewer piping. All piping and conduit within the utility chase shall be inspected and addressed in accordance with this Laboratory Building Work Plan.

The assessment and removal of the piping will include:

1. A spill kit and a fire extinguisher will be staged near the pipe removal.
2. The work area will be designated, and only necessary personnel will be in the work zone.
3. Polyethylene sheeting, absorbent pads, and containers capable of holding the pipe volume to be removed shall be staged in the work area.
4. No asbestos containing materials have been observed in the utility chase. However, if suspect ACM is observed, work will stop until the suspect ACM can be sampled by a licensed NYS inspector and the presence of ACM is confirmed.
    a. Any asbestos removal will be conducted in accordance with NYS Department of Labor (DOL) regulations.
5. Prior to any cutting or removal, the work area will be monitored with Photoionization (PiD) and a Lower Explosive Levels and Oxygen (LEL/O2) meter for 15 minutes. PiD readings will be manually recorded.
6. Any pipe material and pipe bedding material will be screened using a Jerome J405 Mercury Vapor Analyzer (Jerome Meter) to evaluate the presence of mercury vapor since there is a concern that mercury material was disposed of in the sanitary drains at the laboratory. Mercury vapor readings will be manually recorded.
7. If hazardous conditions are present outside the pipe, the pipe and surroundings will be inspected for the source of the airborne contaminant.
8. A collection tray or poly sheeting will be put into position under each pipe section before pipe cuts are to be made. Each section of pipe will be inspected for residual contents. If liquids or sludges are identified, the pipe will drained of any remaining flowable residual, cut to manageable lengths, and placed on polyethylene sheeting or in a lined containment:
    - Liquids and sludge drained from the pipes will be collected and placed in open top Department of Transportation (DOT) compliant 55-gallon drums or totes. Each visually unique liquid or sludge will be collected in a separate container(s).
        - The drums will be labeled, “Hazardous Pending Analysis” and will be stored in the Waste Accumulation Area in Building 5 on the 3821 River Road BCP Site. If testing verifies the material is a non-hazardous waste, then the waste will be managed as a non-hazardous waste.



- Waste labels will be compliant with the Environmental Protection Agency (EPA) regulations and the DOT) requirements found in 49 CFR 172.400 (subpart E).
- If it is determined by analytical analysis that the material is a non-hazardous waste, then the waste label will be changed to non-hazardous and the waste will be managed as a non-hazardous waste.

9. If solids are identified within the pipes, an attempt will be made to remove the solids residual, cut to manageable lengths, and placed in a lined cart:
   - All solids removed from the pipes will be collected in open top Department of Transportation (DOT) compliant 55-gallon drums. Each visually unique solid will be collected in a separate container(s).
   - The drums will be labeled, "Hazardous Pending Analysis" and will be stored in the grossly contaminated materials and Hazardous Waste Accumulation Area in Building 5 on the 3821 River Road BCP Site. If testing verifies the material is a non-hazardous waste, then the waste will be managed as a non-hazardous waste.
   - Waste labels will be complainant with the EPA regulations and the DOT requirements found in 49 CFR 172.400 (subpart E).
     - If it is determined by analytical analysis that the material is a non-hazardous waste, then the waste label will be changed to non-hazardous and the waste will be managed as a non-hazardous waste

All work will be conducted in strict accordance with the site-specific Health and Safety Plans (OSC and Inventum) (HASP) (Appendix A), and the Hot Work Permit (Appendix B) protocols as necessary;

Once all piping has been removed from the utility chase, the void will be filled with crushed concrete from Pile 2 that was generated from crushing of the Laboratory Building, Administration Building and the Brick Welding Shop concrete. The crushed concrete placed in the utility chase will be considered temporary fill. Comprehensive analytical samples were collected from Pile 2 on October 28, 2024 and analyzed by Eurofins Test America. A summary of the analytical results from Pile 2 is provided in Table 1 and the analytical report is included in Appendix C. Crushed concrete from Pile 2 will be used in the concrete utility chase and will not be in contact with the groundwater.

Following collection of all liquid or other residual materials, samples will be collected. The unique liquids and solids will be tested for full waste characterization parameters:

1. TCL Volatile Organic Compounds (VOCs);
2. TCL Semi-Volatile Organic Compounds (SVOCs);
3. TAL Metals;
4. Pesticides and Herbicides;
5. PCBs;
6. Ammonia;
7. Hexavalent Chromium;
8. Cyanide;
9. pH;
10. Full TCLP (all analytes including VOCs, SVOCs, Metals, Pesticides, and Herbicides); and
11. Corrosivity, Reactivity and Ignitability.

A waste determination will be made for the piping and removed contents by evaluating the sample results and the sample results will be shared with the NYSDEC prior to disposal.

## Hot Work

Torch cutting of gas lines is prohibited unless the line has been purged, frequently monitored with a LEL/O2 meter, and visibly open at both ends to confirm the conditions are safe for torch cutting. Torch cutting of piping inside closed buildings is prohibited without approval of the site Superintendent and in strict accordance with a Hot Work Permit (Appendix B).

## Test Pits

Two test pits will be advanced using traditional excavation equipment in the locations shown on Figure 2. These are the locations where the sanitary sewer pipes are shown to exit the Laboratory Building slab to the north and northwest. The proposed target depth of the test pit will be determined based on the depth of the sanitary sewer pipe below the ground surface as the test pits will be advanced at minimum 2-feet below the sewer pipe.

Careful attention will be followed to ensure that no more than two vertical feet of material (e.g. soil or other backfilled material such as gravel or coke breeze) is removed with each scoop of the excavator. Observation of excavated soils and screening with a 10.6eV PID and the Jerome Meter will be made directly from the excavator bucket. After screening, soils will be temporarily stockpiled adjacent to the excavation and at a minimum of 2-feet from the edge of the excavation.

Exposed sewer pipe within the test pit will be removed and managed in accordance with this Laboratory Building Sanitary Sewer Work Plan section that addresses piping removal from the utility chase and both remaining ends of the sewer pipe will be capped prior to backfilling the test pits. The encountered exposed sewer pipes will be located beyond the limits of the test pits by "active locating" (electromagnetic locating or similar) to confirm the locations shown on the historical drawing in the event that further pipe removal or investigation is needed.

If no gross contamination[2] or observed impacts (e.g. staining or elevated PiD readings) are observed within the material around the sewer pipes, then a sample for analytical analysis will be collected directly below the sewer pipe for the parameters listed within this section and the test pit will still be advanced 2-feet below the sewer pipe to document the material. Material with no indication of gross contamination will be backfilled in the sequence it was removed from the test pit.

If gross contamination is observed, then the grossly contaminated material will be removed from the test pit, staged and covered with poly sheeting, and sampled as outlined within this section of the Laboratory Building Work Plan. Material showing signs of impacts will also be sampled as outlined within this section and will be placed back in the test pit excavation once the test pit is complete in the sequence it was removed. The test pit will be advanced until material that does not exhibit signs of impacts or gross contamination is observed. At minimum the test pit will be advanced 2-feet below the sewer pipe. However, the test pit cannot be advanced more than 15-feet below the ground surface (BGS) due to the

[2] Gross contamination is defined for these purposes as soils exhibiting the presence of mobile tar and/or free oils.

limitations of the excavation equipment. A supplemental work plan will be developed if impacted material or grossly contaminated material is observed at a depth greater than 15-feet BGS.

All material that is not grossly contaminated will be backfilled in the sequence it was removed from the test pit. If additional material is needed to raise the elevations of the excavated test pit to the ground surface, an import material request will be submitted to the NYSDEC for review and approval prior to importing material to the 3821 River Road BCP site.

Samples that are submitted for analytical characterization will be collected directly from the sidewalls of the test pits that are less than 3-feet deep if stable or from the bucket of the excavator using a dedicated disposable stainless-steel spoon or decontaminated trowel. Under no circumstances will anyone be allowed to enter a test pit that is greater than 3-feet deep or that has flowing water.

Photographs of each test pit will be collected. Photographs of any significant features exposed by the test pit (e.g. staining or debris) will be collected after the final depth is reached. All pertinent information will be recorded in the field notebook or on test pit logs.

All collected material samples from the test pits as outline in this section will be analyzed for the following parameters:

- TCL VOCs
- TCL SVOCs
- TAL Metals
- PCBs
- Pesticides and Herbicides
- PCBs
- Ammonia
- Cyanide
- Hexavalent Chromium

Excavated materials that exhibit signs of gross contamination will additionally be sampled for the following parameters for waste characterization and/or disposal.

- Full TCLP (all analytes including VOCs, SVOCs, Metals, Pesticides, and Herbicides); and
- Corrosivity, Reactivity and Ignitability

## Dust Control

Dust control and air monitoring is an important component of this Laboratory Building Work Plan. The main sources of dust generation during this phase of the project would include test pit excavation and truck traffic. The Community Air Monitoring Plan (CAMP) in Appendix D addresses the air monitoring requirements for the 3821 River Road BCP Site and techniques to effectively control dust generation and migration.

# Materials Management

Pipes removed under the scope of work of this work plan from the utility chase or sewer pipes exiting the former Laboratory Building will be managed and disposed of offsite as construction and demolition (C&D) non-hazardous piping, or characteristically hazardous waste.

## Piping as Construction and Demolition debris (C&D)

Piping that is free of residuals will be treated as C&D materials as they typically convey water, sewage, or stormwater. This pipe will be stockpiled with C&D materials and after inspection will be disposed of as C&D.

## Non-hazardous Piping

Piping classified as non-hazardous piping will consist of removed pipe that has residual contents within the pipes that is unable to be removed and analytical analysis of the piping contents confirm the remaining pipe contents is non-hazardous.

## Hazardous Waste Piping

Piping classified as hazardous will consist of removed pipes that has residual contents within the pipes that are unable to be removed, and analytical analysis of the piping contents confirm the remaining pipe contents is characteristically hazardous.

## Gross Contaminated Materials or Soils

Segregated and sampled grossly contaminated material or soils which as described in the Test Pit section of this work plan will be classified as non-hazardous material or characteristically hazardous waste based on review of the collected analytical analysis. Characteristically hazardous material will be transported offsite as a hazardous waste for disposal. Grossly contaminated material will also be transported offsite for disposal.

Listed hazardous waste is not expected to be encountered on the 3821 River BCP Site. There is no documentation or institutional knowledge of any material that meets the definition of Listed Hazardous Waste on the 3821 River Road BCP Site therefore, no Listed Hazardous Waste is anticipated. All classes of waste materials will be sampled, a waste determination will be made based on the analytical results, waste profiles will be developed, and the waste will be transported to the appropriate permitted landfill.

The NYSDEC will be notified no less than 5-days before any offsite transportation of drummed and solid materials for disposal.

The generated waste will be tracked under the site waste log which will include the waste type, source of generation, waste classification, volume, and disposal facility.

# Schedule

3821 River Road is ready to complete the work outline in this Laboratory Building Sewer Assessment Investigation Work Plan during the Spring of 2026.

# Notifications

The DEC will be notified no less than 5 days before the following activities under this Laboratory Building Sewer Assessment Work Plan:

1. Start of work
2. Shipping a new material waste stream offsite for disposal; and
3. Shipping a new class of material offsite for recycling.

Inventum will submit an e-mail to the NYSDEC prior to shipping material offsite for reuse or recycling. The e-mail will include the characterization of the material, the intended disposal or recycling process and the testing that was conducted to confirm the material or piping is suitable for its intended use.

## Reporting

The sampling and waste trackers will be maintained throughout the Laboratory Building sewer assessment. Waste trackers submitted and sampling updates will be provided in the monthly report for the 3821 River Road BCP Site which will be submitted by the 10th day of each trailing month.

An investigation summary will be included in the Remedial Investigation Report (RIR) for the BCP Site in accordance with the New York State BCP and DER-10 for work completed under this Laboratory Building Sewer Assessment Investigation Work Plan.

## Engineering Certification

I, John. P. Black, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Assessment and Management of the Laboratory Building Sanitary Sewer Investigation Work Plan was prepared in accordance with all applicable statutes and regulators and in substation conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and DER Green Remediation (DER-31).

Respectfully Submitted,

Inventum Engineering, P.C.

Date: June 10, 2026

John P. Black, P.E.

License No: 062818-1

Seal:




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# Table

Table 1
Concrete Analysis - Pile 2
3821 River Road
Tonawanda, NY

| ANALYTE | SAMPLE ID: | | PILE2-01-10282024 | | PILE2-02-10282024 | | PILE2-03-10282024 | | PILE2-04-10282024 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LAB ID: | | 480-224895-7 | | 480-224895-8 | | 480-224895-9 | | 480-224895-10 | |
| | COLLECTION DATE: | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | |
| | SAMPLE MATRIX: | | SOLID | | SOLID | | SOLID | | SOLID | |
| | Commercial | Industrial | | | | | | | | |
| | (mg/kg) | (mg/kg) | | | | | | | | |
| VOLATILE ORGANIC COMPOUNDS BY GC/MS 8260C | | | | | | | | | | |
| Ethylbenzene | 390000 | 780000 | <0.35 | vs | <0.38 | vs | <0.34 | vs | <0.36 | vs |
| Styrene | | | <0.25 | vs | <0.27 | vs | <0.25 | vs | <0.26 | vs |
| cis-1,3-Dichloropropene | | | <0.73 | vs | <0.78 | vs | <0.72 | vs | <0.75 | vs |
| trans-1,3-Dichloropropene | | | <2.2 | vs | <2.4 | vs | <2.2 | vs | <2.3 | vs |
| 1,4-Dichlorobenzene | 130000 | 250000 | <0.71 | vs | <0.76 | vs | <0.70 | vs | <0.73 | vs |
| 1,2-Dibromoethane | | | <0.65 | vs | <0.70 | vs | <0.64 | vs | <0.67 | vs |
| 1,2-Dichloroethane | 30000 | 60000 | <0.25 | vs | <0.27 | vs | <0.25 | vs | <0.26 | vs |
| 4-Methyl-2-pentanone (MIBK) | | | <1.7 | vs | <1.8 | vs | <1.6 | vs | <1.7 | vs |
| Methylcyclohexane | | | <0.77 | vs | <0.83 | vs | <0.76 | vs | <0.79 | vs |
| Toluene | 500000 | 1000000 | <0.38 | vs | <0.41 | vs | <0.38 | vs | <0.39 | vs |
| Chlorobenzene | 500000 | 1000000 | <0.67 | vs | <0.72 | vs | <0.66 | vs | <0.69 | vs |
| Cyclohexane | | | <0.71 | vs | <0.76 | vs | <0.70 | vs | <0.73 | vs |
| 1,2,4-Trichlorobenzene | | | <0.31 | vs | <0.33 | vs | <0.30 | vs | <0.32 | vs |
| Dibromochloromethane | | | <0.65 | vs | <0.70 | vs | <0.64 | vs | <0.67 | vs |
| Tetrachloroethene | 150000 | 300000 | <0.68 | vs | <0.73 | vs | <0.67 | vs | <0.70 | vs |
| Xylenes, Total | 500000 | 1000000 | <0.85 | vs | <0.91 | vs | <0.84 | vs | <0.88 | vs |
| cis-1,2-Dichloroethene | 500000 | 1000000 | <0.65 | vs | <0.70 | vs | <0.64 | vs | <0.67 | vs |
| trans-1,2-Dichloroethene | 500000 | 1000000 | <0.52 | vs | <0.56 | vs | <0.51 | vs | <0.54 | vs |
| Methyl tert-butyl ether | 500000 | 1000000 | <0.50 | vs | <0.53 | vs | <0.49 | vs | <0.51 | vs |
| 1,3-Dichlorobenzene | 280000 | 560000 | <0.26 | vs | <0.28 | vs | <0.26 | vs | <0.27 | vs |
| Carbon tetrachloride | 22000 | 44000 | <0.49 | vs | <0.53 | vs | <0.48 | vs | <0.50 | vs |
| 2-Hexanone | | | <2.5 | vs | <2.7 | vs | <2.5 | vs | <2.6 | vs |
| Acetone | 500000 | 1000000 | <4.3 | vs | <4.6 | vs | <4.2 | vs | <4.4 | vs |
| Chloroform | 350000 | 700000 | 0.53 | J B vs | 0.8 | J B vs | 0.56 | J B vs | 0.62 | J B vs |
| Benzene | 44000 | 89000 | <0.25 | vs | <0.27 | vs | <0.24 | vs | <0.26 | vs |
| 1,1,1-Trichloroethane | 500000 | 1000000 | <0.37 | vs | <0.39 | vs | <0.36 | vs | <0.38 | vs |
| Bromomethane | | | <0.46 | vs | <0.49 | vs | <0.45 | vs | <0.47 | vs |
| Chloromethane | | | <0.31 | vs | <0.33 | vs | <0.30 | vs | <0.31 | vs |
| Chloroethane | | | <1.1 | vs | <1.2 | vs | <1.1 | vs | <1.2 | vs |
| Vinyl chloride | 13000 | 27000 | <0.62 | vs | <0.66 | vs | <0.61 | vs | <0.64 | vs |
| Methylene Chloride | 500000 | 1000000 | <2.3 | vs | 3.6 | J vs | 4.1 | J vs | 5.6 | vs |
| Carbon disulfide | | | <2.5 | vs | <2.7 | vs | <2.5 | vs | <2.6 | vs |
| Bromoform | | | <2.5 | vs | <2.7 | vs | <2.5 | vs | <2.6 | vs |
| Bromodichloromethane | | | <0.68 | vs | <0.73 | vs | <0.67 | vs | <0.70 | vs |
| 1,1-Dichloroethane | 240000 | 480000 | <0.62 | vs | <0.66 | vs | <0.61 | vs | <0.64 | vs |
| 1,1-Dichloroethene | 500000 | 1000000 | <0.62 | vs | <0.67 | vs | <0.61 | vs | <0.64 | vs |
| Trichlorofluoromethane | | | <0.48 | vs | <0.51 | vs | <0.47 | vs | <0.49 | vs |
| Dichlorodifluoromethane | | | <0.42 | vs | <0.45 | vs | <0.41 | vs | <0.43 | vs |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | | | <1.2 | vs | <1.2 | vs | <1.1 | vs | <1.2 | vs |
| 1,2-Dichloropropane | | | <2.5 | vs | <2.7 | vs | <2.5 | vs | <2.6 | vs |
| 2-Butanone (MEK) | 500000 | 1000000 | <1.9 | vs | <2.0 | vs | <1.8 | vs | <1.9 | vs |
| 1,1,2-Trichloroethane | | | <0.66 | vs | <0.71 | vs | <0.65 | vs | <0.68 | vs |
| Trichloroethene | 200000 | 400000 | <1.1 | vs | <1.2 | vs | <1.1 | vs | <1.1 | vs |
| Methyl acetate | | | <3.1 | vs | <3.3 | vs | <3.0 | vs | <3.1 | vs |
| 1,1,2,2-Tetrachloroethane | | | <0.82 | vs | <0.88 | vs | <0.81 | vs | <0.85 | vs |
| 1,2-Dichlorobenzene | 500000 | 1000000 | <0.40 | vs | <0.43 | vs | <0.39 | vs | <0.41 | vs |
| 1,2-Dibromo-3-Chloropropane | | | <2.5 | vs | <2.7 | vs | <2.5 | vs | <2.6 | vs |
| Isopropylbenzene | | | <0.76 | vs | <0.82 | vs | <0.75 | vs | <0.79 | vs |
| | | | | | | | | | | |
| SEMIVOLITILE ORGANIC COMPOUNDS (GC/MS) 8270D | | | | | | | | | | |
| 4-Nitroaniline | | | <1800 | U | - | - | - | - | - | - |
| 4-Nitrophenol | | | <2400 | U | - | - | - | - | - | - |
| Benzaldehyde | | | <2800 | U | - | - | - | - | - | - |
| 4-Bromophenyl phenyl ether | | | <490 | U | - | - | - | - | - | - |
| Caprolactam | | | <1000 | U | - | - | - | - | - | - |
| 2,4-Dimethylphenol | | | <840 | U | - | - | - | - | - | - |
| 4-Methylphenol | 500000 | 1000000 | <410 | U | - | - | - | - | - | - |
| 4-Chloroaniline | | | <860 | U | - | - | - | - | - | - |
| bis (2-chloroisopropyl) ether | | | <700 | U | - | - | - | - | - | - |
| Phenol | 500000 | 1000000 | <530 | U | - | - | - | - | - | - |
| Bis(2-chloroethyl)ether | | | <450 | U | - | - | - | - | - | - |
| Bis(2-chloroethoxy)methane | | | <740 | U | - | - | - | - | - | - |
| Bis(2-ethylhexyl) phthalate | | | 1400 | J | - | - | - | - | - | - |
| Di-n-octyl phthalate | | | <410 | U | - | - | - | - | - | - |
| Hexachlorobenzene | 6000 | 12000 | <470 | U | - | - | - | - | - | - |
| Anthracene | 500000 | 1000000 | 4200 | | - | - | - | - | - | - |
| 2,4-Dichlorophenol | | | <370 | U | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | | | <720 | U | - | - | - | - | - | - |

Table 1
Concrete Analysis - Pile 2
3821 River Road
Tonawanda, NY

| ANALYTE | SAMPLE ID: | | PILE2-01-10282024 | | PILE2-02-10282024 | | PILE2-03-10282024 | | PILE2-04-10282024 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LAB ID: | | 480-224895-7 | | 480-224895-8 | | 480-224895-9 | | 480-224895-10 | |
| | COLLECTION DATE: | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | |
| | SAMPLE MATRIX: | | SOLID | | SOLID | | SOLID | | SOLID | |
| | Commercial | Industrial | | | | | | | | |
| | (mg/kg) | (mg/kg) | | | | | | | | |
| Pyrene | 500000 | 1000000 | 13000 | | - | - | - | - | - | - |
| Dimethyl phthalate | | | <410 | U | - | - | - | - | - | - |
| Dibenzofuran | 350000 | 1000000 | 13000 | J | - | - | - | - | - | - |
| Benzo[g,h,i]perylene | 500000 | 1000000 | 5000 | | - | - | - | - | - | - |
| Atrazine | | | <1200 | U | - | - | - | - | - | - |
| Indeno[1,2,3-cd]pyrene | 5600 | 11000 | 4500 | | - | - | - | - | - | - |
| Benzo[b]fluoranthene | 5600 | 11000 | 8100 | | - | - | - | - | - | - |
| Fluoranthene | 500000 | 1000000 | 17000 | | - | - | - | - | - | - |
| Benzo[k]fluoranthene | 56000 | 110000 | 4400 | | - | - | - | - | - | - |
| Acenaphthylene | 500000 | 1000000 | <450 | U | - | - | - | - | - | - |
| Chrysene | 56000 | 110000 | 6900 | | - | - | - | - | - | - |
| Benzo[a]pyrene | 1000 | 1100 | 7100 | | - | - | - | - | - | - |
| 2,4-Dinitrophenol | | | <16000 | U | - | - | - | - | - | - |
| Dibenz(a,h)anthracene | 560 | 1100 | 1500 | J | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | | | <3500 | U | - | - | - | - | - | - |
| Benzo[a]anthracene | 5600 | 11000 | 7700 | | - | - | - | - | - | - |
| 4-Chloro-3-methylphenol | | | <860 | U | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | | | <410 | U | - | - | - | - | - | - |
| N-Nitrosodi-n-propylamine | | | <590 | U | - | - | - | - | - | - |
| Hexachloroethane | | | <450 | U | - | - | - | - | - | - |
| 4-Chlorophenyl phenyl ether | | | <430 | U | - | - | - | - | - | - |
| Hexachlorocyclopentadiene | | | <470 | U | - | - | - | - | - | - |
| Isophorone | | | <740 | U | - | - | - | - | - | - |
| Acenaphthene | 500000 | 1000000 | 2200 | J | - | - | - | - | - | - |
| Diethyl phthalate | | | <450 | U | - | - | - | - | - | - |
| Di-n-butyl phthalate | | | <590 | U | - | - | - | - | - | - |
| Phenanthrene | 500000 | 1000000 | 14000 | | - | - | - | - | - | - |
| Butyl benzyl phthalate | | | 2700 | J | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | | | <2800 | U | - | - | - | - | - | - |
| Fluorene | 500000 | 1000000 | 2100 | J | - | - | - | - | - | - |
| Carbazole | | | 2600 | J | - | - | - | - | - | - |
| Hexachlorobutadiene | | | <510 | U | - | - | - | - | - | - |
| Pentachlorophenol | 6700 | 55000 | <3500 | U | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | | | <700 | U | - | - | - | - | - | - |
| 2-Nitroaniline | | | <510 | U | - | - | - | - | - | - |
| 2-Nitrophenol | | | <980 | U | - | - | - | - | - | - |
| Naphthalene | 500000 | 1000000 | 1700 | J | - | - | - | - | - | - |
| 2-Methylnaphthalene | | | <700 | U | - | - | - | - | - | - |
| 2-Chloronaphthalene | | | <570 | U | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | | | <4100 | U | - | - | - | - | - | - |
| Biphenyl | | | <510 | U | - | - | - | - | - | - |
| 2-Methylphenol | 500000 | 1000000 | <410 | U | - | - | - | - | - | - |
| 2-Chlorophenol | | | <630 | U | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | | | <940 | U | - | - | - | - | - | - |
| Acetophenone | | | <470 | U | - | - | - | - | - | - |
| Nitrobenzene | | | <390 | U | - | - | - | - | - | - |
| 3-Nitroaniline | | | <960 | U | - | - | - | - | - | - |
| | | | | | | | | | | |
| METALS (ICP) 6010C | | | | | | | | | | |
| Aluminum | | | 6470 | | - | - | - | - | - | - |
| Iron | | | 11500 | | - | - | - | - | - | - |
| Lead | 1000 | 3900 | 13.2 | | - | - | - | - | - | - |
| Magnesium | | | 25500 | | - | - | - | - | - | - |
| Manganese | 10000 | 10000 | 236 | | - | - | - | - | - | - |
| Nickel | 310 | 10000 | 10.8 | | - | - | - | - | - | - |
| Potassium | | | 1750 | | - | - | - | - | - | - |
| Silver | 1500 | 6800 | <0.21 | U | - | - | - | - | - | - |
| Sodium | | | 341 | | - | - | - | - | - | - |
| Thallium | | | <0.79 | U | - | - | - | - | - | - |
| Antimony | | | <0.55 | U | - | - | - | - | - | - |
| Arsenic | 16 | 16 | 3.7 | | - | - | - | - | - | - |
| Barium | 400 | 10000 | 51.2 | | - | - | - | - | - | - |
| Beryllium | 590 | 2700 | 0.30 | | - | - | - | - | - | - |
| Cadmium | 9.3 | 60 | 0.15 | J | - | - | - | - | - | - |
| Chromium | | | 12.4 | | - | - | - | - | - | - |
| Cobalt | | | 3.4 | | - | - | - | - | - | - |
| Copper | 270 | 10000 | 15.4 | | - | - | - | - | - | - |
| Vanadium | | | 13.4 | | - | - | - | - | - | - |
| Zinc | 10000 | 10000 | 164 | | - | - | - | - | - | - |

Table 1
Concrete Analysis - Pile 2
3821 River Road
Tonawanda, NY

| ANALYTE | SAMPLE ID: | | PILE2-01-10282024 | | PILE2-02-10282024 | | PILE2-03-10282024 | | PILE2-04-10282024 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LAB ID: | | 480-224895-7 | | 480-224895-8 | | 480-224895-9 | | 480-224895-10 | |
| | COLLECTION DATE: | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | |
| | SAMPLE MATRIX: | | SOLID | | SOLID | | SOLID | | SOLID | |
| | Commercial | Industrial | | | | | | | | |
| | (mg/kg) | (mg/kg) | | | | | | | | |
| Calcium | | | 154000 | | - | - | - | - | - | - |
| Selenium | 1500 | 6800 | <0.83 | U | - | - | - | - | - | - |
| | | | | | | | | | | |
| MERCURY (CVAA) 7471B | | | | | | | | | | |
| Mercury | 2.8 | 5.7 | 2.1 | | - | - | - | - | - | - |
| | | | | | | | | | | |
| ORGANOCHLORINE PESTICIDES (GC) 8081B | | | | | | | | | | |
| Heptachlor epoxide | | | <8.7 | U | - | - | - | - | - | - |
| Endosulfan sulfate | 200000 | 920000 | <6.3 | U | - | - | - | - | - | - |
| Aldrin | 680 | 1400 | <8.3 | U | - | - | - | - | - | - |
| alpha-BHC | 3400 | 6800 | <6.1 | U | - | - | - | - | - | - |
| beta-BHC | 3000 | 14000 | <6.1 | U | - | - | - | - | - | - |
| delta-BHC | 500000 | 1000000 | <6.3 | U | - | - | - | - | - | - |
| Endosulfan II | 200000 | 920000 | <6.1 | U | - | - | - | - | - | - |
| 4,4'-DDT | 47000 | 94000 | <7.9 | U | - | - | - | - | - | - |
| cis-Chlordane | 24000 | 47000 | <17 | U | - | - | - | - | - | - |
| trans-Chlordane | | | <11 | U | - | - | - | - | - | - |
| Endrin ketone | | | <8.3 | U | - | - | - | - | - | - |
| gamma-BHC (Lindane) | 9200 | 23000 | <6.2 | U | - | - | - | - | - | - |
| Dieldrin | 1400 | 2800 | <8.1 | U | - | - | - | - | - | - |
| Endrin | 89000 | 410000 | <6.7 | U | - | - | - | - | - | - |
| Methoxychlor | | | <6.9 | U | - | - | - | - | - | - |
| 4,4'-DDD | 92000 | 180000 | <6.6 | U | - | - | - | - | - | - |
| 4,4'-DDE | 62000 | 120000 | <7.1 | U | - | - | - | - | - | - |
| Endrin aldehyde | | | <8.7 | U | - | - | - | - | - | - |
| Heptachlor | 15000 | 29000 | <7.3 | U | - | - | - | - | - | - |
| Toxaphene | | | <200 | U | - | - | - | - | - | - |
| Endosulfan I | 200000 | 920000 | <6.5 | U | - | - | - | - | - | - |
| | | | | | | | | | | |
| HERBICIDES (GC) 8151A | | | | | | | | | | |
| Dichlorprop | | | <8.4 | U | - | - | - | - | - | - |
| Picloram | | | <7.3 | U | - | - | - | - | - | - |
| Pentachlorophenol | 6700 | 55000 | 5.7 | J | - | - | - | - | - | - |
| Silvex (2,4,5-TP) | 500000 | 1000000 | <6.1 | U | - | - | - | - | - | - |
| 2,4,5-T | | | <5.4 | U | - | - | - | - | - | - |
| 2,4-D | | | <11 | U | - | - | - | - | - | - |
| | | | | | | | | | | |
| POLYCHLORINATED BIPHENYLS (PCBS) BY GAS CHROMATOGRAPHY 8082A | | | | | | | | | | |
| PCB-1260 | | | <0.094 | U | - | - | - | - | - | - |
| PCB-1254 | | | <0.094 | U | - | - | - | - | - | - |
| PCB-1221 | | | <0.039 | U | - | - | - | - | - | - |
| PCB-1232 | | | <0.039 | U | - | - | - | - | - | - |
| PCB-1248 | | | 0.091 | J | - | - | - | - | - | - |
| PCB-1016 | | | <0.039 | U | - | - | - | - | - | - |
| PCB-1242 | | | <0.039 | U | - | - | - | - | - | - |
| | | | | | | | | | | |
| PER- AND POLYFLUOROALKYL SUBSTANCES BY LC/MS/MS 1633 | | | | | | | | | | |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | | | <0.084 | U | - | - | - | - | - | - |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | | | <0.17 | U | - | - | - | - | - | - |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | | | <0.084 | U | - | - | - | - | - | - |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | | | <0.42 | U | - | - | - | - | - | - |
| Perfluorooctanesulfonic acid (PFOS) | 0.44 | 0.44 | 0.48 | | - | - | - | - | - | - |
| Perfluoroundecanoic acid (PFUnA) | | | <0.042 | U | - | - | - | - | - | - |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | | | <0.042 | U | - | - | - | - | - | - |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | | | <0.42 | U | - | - | - | - | - | - |
| Perfluoropentanoic acid (PFPeA) | | | <0.084 | U | - | - | - | - | - | - |
| Perfluoropentanesulfonic acid (PFPeS) | | | <0.042 | U | - | - | - | - | - | - |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | | | <0.17 | U | - | - | - | - | - | - |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | | | 0.20 | | - | - | - | - | - | - |
| Perfluorohexanoic acid (PFHxA) | | | 0.092 | J | - | - | - | - | - | - |
| Perfluorododecanoic acid (PFDoA) | | | <0.042 | U | - | - | - | - | - | - |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluorooctanoic acid (PFOA) | 0.5 | 0.6 | 0.25 | | - | - | - | - | - | - |
| Perfluorodecanoic acid (PFDA) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluorodecanesulfonic acid (PFDS) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluorohexanesulfonic acid (PFHxS) | | | 0.14 | J | - | - | - | - | - | - |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | | | <0.21 | U | - | - | - | - | - | - |
| Perfluorobutanoic acid (PFBA) | | | <0.17 | U | - | - | - | - | - | - |
| Perfluorobutanesulfonic acid (PFBS) | | | <0.042 | U | - | - | - | - | - | - |

Table 1
Concrete Analysis - Pile 2
3821 River Road
Tonawanda, NY

| ANALYTE | SAMPLE ID: | | PILE2-01-10282024 | | PILE2-02-10282024 | | PILE2-03-10282024 | | PILE2-04-10282024 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LAB ID: | | 480-224895-7 | | 480-224895-8 | | 480-224895-9 | | 480-224895-10 | |
| | COLLECTION DATE: | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | | 10/28/2024 | |
| | SAMPLE MATRIX: | | SOLID | | SOLID | | SOLID | | SOLID | |
| | Commercial | Industrial | | | | | | | | |
| | (mg/kg) | (mg/kg) | | | | | | | | |
| Perfluoroheptanoic acid (PFHpA) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluoroheptanesulfonic acid (PFHpS) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluorononanoic acid (PFNA) | | | 0.052 | J | - | - | - | - | - | - |
| Perfluorotetradecanoic acid (PFTeDA) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | | | <0.084 | U | - | - | - | - | - | - |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | | | <0.17 | U | - | - | - | - | - | - |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | | | 0.051 | J | - | - | - | - | - | - |
| Perfluorononanesulfonic acid (PFNS) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluorotridecanoic acid (PFTrDA) | | | <0.042 | U | - | - | - | - | - | - |
| Perfluorooctanesulfonamide (PFOSA) | | | 0.045 | J | - | - | - | - | - | - |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | | | <0.17 | U | - | - | - | - | - | - |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | | | <0.17 | U | - | - | - | - | - | - |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | | | <0.17 | U | - | - | - | - | - | - |
| Perfluorododecanesulfonic acid (PFDoS) | | | <0.042 | U | - | - | - | - | - | - |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | | | <1.1 | U | - | - | - | - | - | - |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | | | <0.084 | U | - | - | - | - | - | - |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | | | <1.1 | U | - | - | - | - | - | - |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | | | <0.17 | U | - | - | - | - | - | - |
| | | | | | | | | | | |
| TOTAL CYANIDE 9012B | | | | | | | | | | |
| Cyanide, Total | 27 | 10000 | <0.49 | U | - | - | - | - | - | - |
| | | | | | | | | | | |
| GENERAL CHEMISTRY | | | | | | | | | | |
| Percent Moisture | | | 3.8 | | 8.6 | | 3.6 | | 7.4 | |
| Percent Solids | | | 96.2 | | 91.4 | | 96.4 | | 92.6 | |

* Comparison is not performed on parameters with non-numeric criteria.

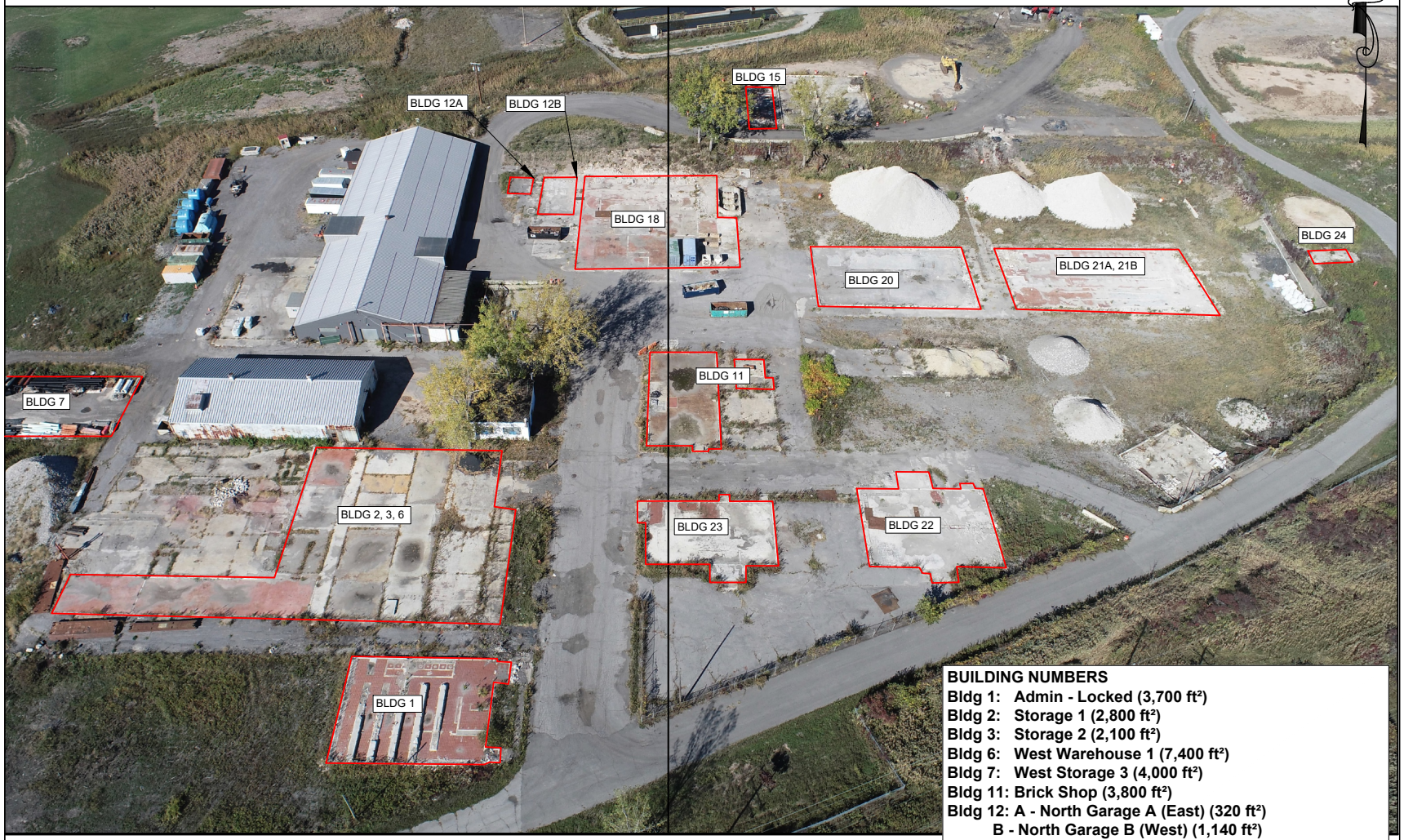
NY-RESC: New York NYCRR Part 375 Commercial Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

NY-RESI: New York NYCRR Part 375 Industrial Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, effective December 14, 2006.

Notes:

vs = Reported analyte concentrations are below 200 ug/kg and may be biased low due to the sample not being collected according to 5035A-L low-level specifications.
NS = Not Sampled
"<" = Analyzed for but detected at or above the quantitation limit
*+ = LCS and/or LCSD is outside acceptance limits, high biased.
F1 = MS and/or MSD recovery exceeds control limits.
B = Compound was found in the blank and sample.
J = Analyte detected below quantitation limit
Bold = Analyte was detected
Green Highlight = Analyte concentration exceeds Commercial SCOs
Red Highlight = Analyte concentration exceeds Industrial SCOs

# Figures




**BUILDING NUMBERS**

**Bldg 1: Admin - Locked (3,700 ft²)**
**Bldg 2: Storage 1 (2,800 ft²)**
**Bldg 3: Storage 2 (2,100 ft²)**
**Bldg 6: West Warehouse 1 (7,400 ft²)**
**Bldg 7: West Storage 3 (4,000 ft²)**
**Bldg 11: Brick Shop (3,800 ft²)**
**Bldg 12: A - North Garage A (East) (320 ft²)**
**B - North Garage B (West) (1,140 ft²)**
**Bldg 15: Allied Pump House - Product Pumping (950 ft²)**
**Bldg 18: Northwest Storage (10,200 ft²)**
**Bldg 20: Coke Building (6,250 ft²)**
**Bldg 21A and 21B: Northeast Storage (7,600 ft²)**
**Bldg 22: Laboratory (3,500 ft²)**
**Bldg 23: Two-story Administration Building (2,900 ft²)**
**Bldg 24: Pump House (500 ft²)**

Note:
1. Drawing not to scale.
2. Aerial taken 10/16/2025.

A

DRAWING BY CB
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APPROVED

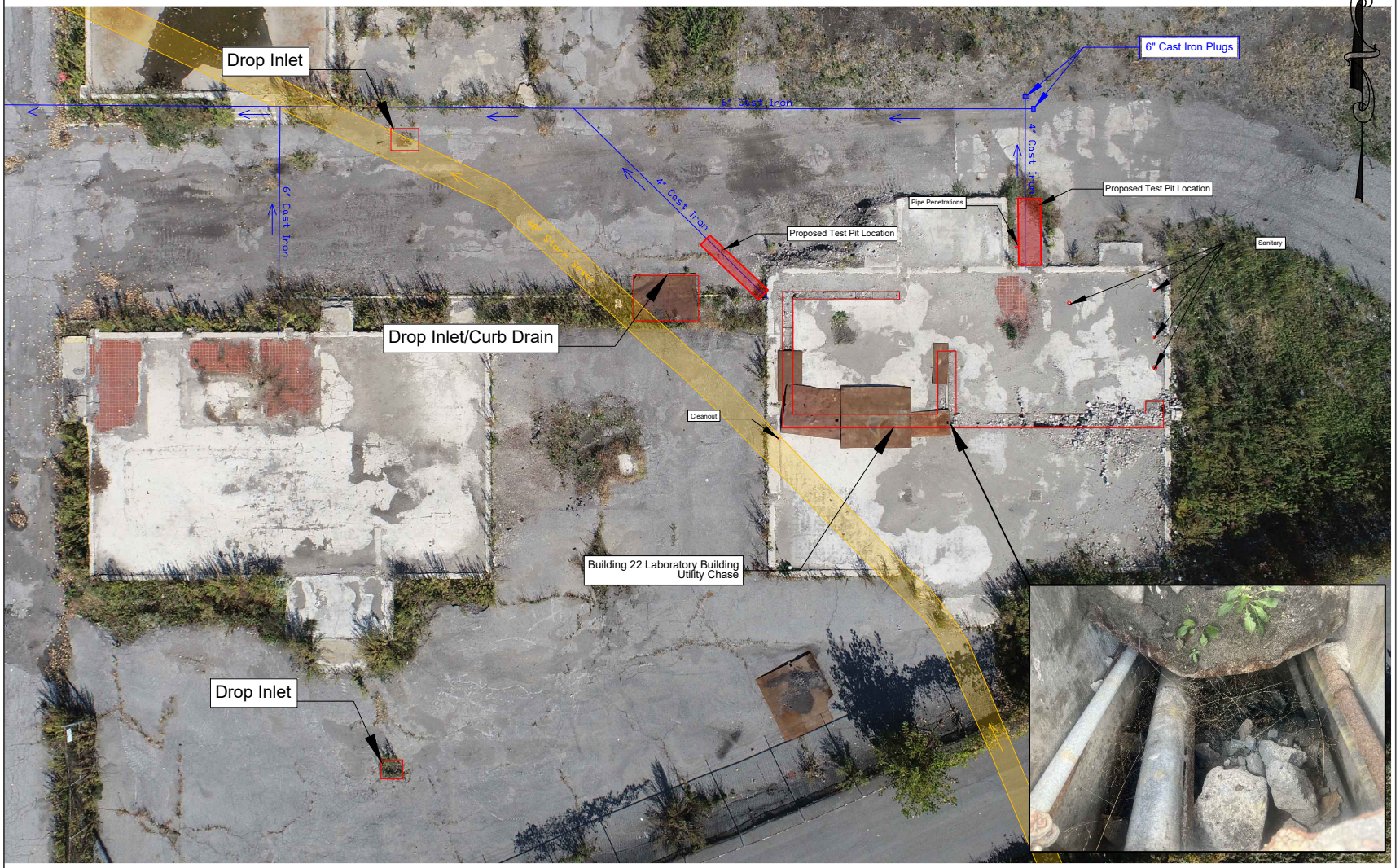
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**Site Aerial**
**Concrete Building Slabs**
*3821 River Road, Inc.*
*3821 RIVER ROAD*
*TONAWANDA, NEW YORK*

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170
(703) 722-6049
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FIGURE 1
DRAWING NUMBER




Reference:
1. Semet Solvay Division, Niagara River Petrochemical Plant, Underground Piping, Sheet No: 1, 60053. T-M-41-N, August 8, 1953

Legend:
- Sanitary Sewer drawn from referenced historic drawing
- Utilities known from surface investigations
- 48" Storm Sewer drawn from referenced historic drawing

A

1" = 25'

25' 0' 25'

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**Building 22 Lab Building, Building 22, Sanitary Sewer and Utilities**
*3821 River Road, Inc.*
*3821 River Road*
*Tonawanda, New York*

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170
(703) 722-6049
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FIGURE 2
DRAWING NUMBER




Note:
1. Floor layout produced from visual inspections prior to demolition and is estimated.

Reference:
1. Semet Solvay Division, Niagara River Petrochemical Plant, Underground Piping, Sheet No: 1, 60053. T-M-41-N, August 8, 1953

1" = 10'

10' 0' 10'

DRAWING BY CB
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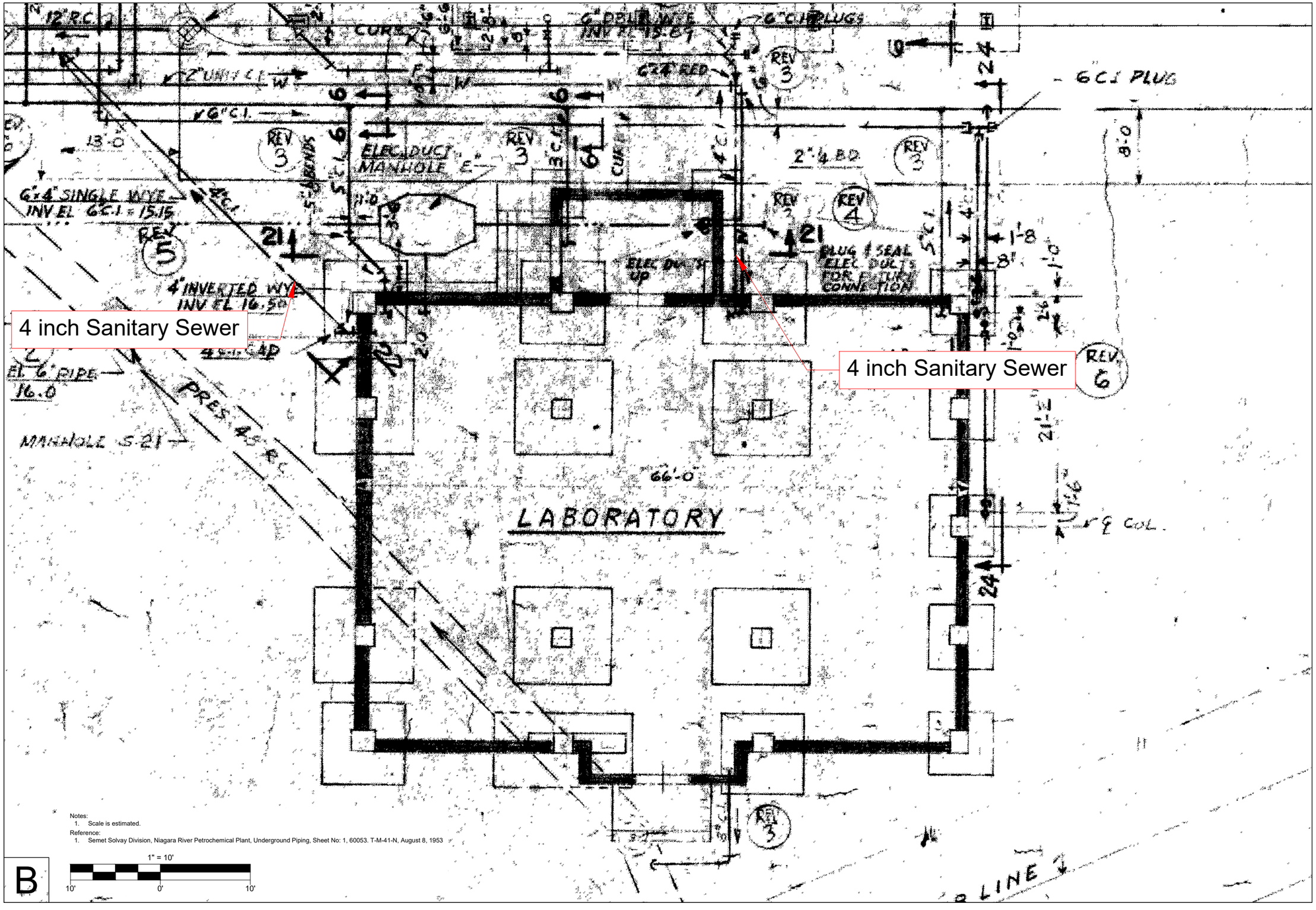
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**Building 22 Lab Building Layout**
*3821 River Road, Inc.*
*3821 River Road*
*Tonawanda, New York*

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170
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FIGURE 3
DRAWING NUMBER




Notes:
1. Scale is estimated.

Reference:
1. Semet Solvay Division, Niagara River Petrochemical Plant, Underground Piping, Sheet No: 1, 60053. T-M-41-N, August 8, 1953

1" = 10'

10' 0' 10'

B

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**Building 22 Historic Drawing**
*3821 River Road, Inc.*
*3821 River Road*
*Tonawanda, New York*

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170

FIGURE 4

DRAWING NUMBER

# Appendices

Appendix A - Health and Safety Plans

# Inventum Engineering, PC
# Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

## 1. General Information

Client Name: 3821 River Road, Inc.

Project #: 3821 River Road

Project Name: Brownfield Program Management

Project Manager: John Black, PE

Street Address:

3821 River Road

Tonawanda, New York 14150

**Prepared By: Peter Zaffram** **Date: September 22, 2022**

**Approved By: John Black, P.E.** **Date: November 10, 2022**

**Proposed Date(s) of Work:** TBD

**Proposed Scope of Work:**

Inventum Engineering, PC (Inventum) will be the owner's representative, investigation team and engineer supporting the site management, site investigation(s), and remedial investigation(s) through the New York State Brownfield Cleanup Program (BCP) for 3821 River Road, Inc located on the former Allied Chemical – Special Chemical Division (Site). The general scope of work is provided below, and tasks will be updated with additional details/specifications as the project progresses through the BCP.

**Task 1 - Site Management and Oversight**

Inventum will conduct site visits, general management support, and general contractor and subcontractor oversight related to the remedial investigation for the Site. This task includes site visits related to oversight of the RI, but specifically excludes Inventum personnel directly performing any intrusive site work or oversight of contractors/subcontractors performing intrusive site work. Direct intrusive site work and/or intrusive site work oversight is covered under Tasks 2 through 7 below.

**Task 2 – Surficial Soil Sampling**

Surficial (approximately 0 to 1 foot below ground surface [bgs]) soil samples will be collected from various locations of the Site to establish current conditions. Shallow samples will be collected using a hand-auger, shovel, or trowel and the material will be recovered for lithological characterization and field screening with a PID equipped with a 10.6 eV lamp. All observations and measurements will be logged in the field notebook. Samples may be collected for various constituents including Metals, Semi-Volatile Organic

Compounds (SVOCs), Volatile Organic Compounds (VOCs), Polychlorinated Biphenyls (PCBs), 1,4-Dioxane, and Per- and Polyfluoroalkyl Substances (PFAS).

**Task 3 – Subsurface Soil Sampling**

Subsurface (> 1 feet bgs) soils samples will be collected from various locations of the Site to establish current conditions. Depending on the depth of sample, subsurface samples may be collected using a hand-auger, shovel, trowel, light or heavy excavating equipment, direct-push equipment, or rotary drilling equipment. Material will be recovered for lithological characterization and field screening with a PID equipped with a 10.6 eV lamp. All observations and measurements will be logged in the field notebook. Samples may be collected for various constituents including Metals, SVOCs, VOCs, PCBs, 1,4-Dioxane, and PFAS.

**Task 4 – Storm Sewer Water Sampling**

Water samples will be collected periodically from the inlet and outlet of the storm sewers that cross beneath the site. Additional water samples may be collected at the site to characterize accumulated liquids in pits, containments, or depressions. Storm Sewer samples will be analyzed for VOCs, SVOCs, and Metals.

Additional samples shall be collected as needed to characterize liquids accumulating in sumps, pits, tunnels and depressions at the site. These samples shall be collected in accordance with approved work plans.

**Task 5 – Monitoring Well Abandonment**

Existing monitoring wells at the Site may be abandoned depending on an assessment of their condition over the course of the Site investigation(s) and remedial activities. The existing wells that are identified for abandonment will be abandoned in accordance with the requirements and guidance in NYSDEC Policy CP-43 "*Groundwater Monitoring Well Decommissioning Policy*". No monitoring wells are currently scheduled to be abandoned.

**Task 6 – Monitoring Well Installation**

New monitoring wells may be installed as part of the BCP investigation(s) and remedial activities. The borings for the wells will be advanced to depth using hollow-stem augers and include the collection of soil samples for lithological characterization and for samples for analytical testing. Unconsolidated material samples will be collected for observation and screening with a photo-ionization detector (PID) equipped with a 10.6 eV lamp in a continuous interval over the total depth of the boring with a split barrel sampler driven through the augers. All lithological observations, field measurements, and well construction details

will be logged in the field notebook. Surface and subsurface soil samples may be collected in accordance with Tasks 2 and 3.

The new wells will be completed with a 2-inch diameter Schedule 40 polyvinyl chloride (PVC) well casing and 5-feet of 0.010-inch slotted screen. A sand filter pack will be placed from the bottom of the screened interval to a minimum of 1 foot above the top of the screen. A 2-foot bentonite seal will be placed on top the filter pack and the remaining annular space will be completed with a cement grout (Portland Type I cement with 3 – 5% bentonite). The wells may either be completed flush-to-grade within a traffic rated box or within a steel bollard enclosure that protrudes a minimum of 2-feet above ground surface.

All newly installed wells will be developed prior to sampling and any existing monitoring wells may be redeveloped prior to sampling. The water levels in the monitoring wells will be manually measured using an oil/water interface probe prior to redevelopment and the depth to water, depth and thickness of any Light Non-Aqueous Phase Liquid (LNAPL), and the total depth of the well will be measured and logged in the field notebook. The wells will be redeveloped by removing three well volumes, purging the wells until dry, or purging and surging the wells using a submersible pump.

Field parameters (temperature, pH, conductivity, ORP, turbidity) will be measured and logged in the field notebook at least three (3) times during the development process (beginning, middle, and end) using a hand-held water quality monitor. All development water will be containerized and stored in appropriately labeled drums or totes and disposed offsite or treated and discharged in accordance with site permits and applicable local, state, and federal regulations.

**Task 7 – Groundwater Monitoring and Sampling**

Inspections will be conducted prior to sampling and will include visual observations of the well head, seal, and cover. Measurements of the depth to liquid (if LNAPL is present), depth to water, and the overall total depth of the well will be collected using an oil/water interface probe and recorded in the field notebook for comparison to construction dimensions and previous records.

Monitoring wells will be sampled using a bailer by standard purge methods or peristaltic pump or QED bladder pump following low-flow sampling procedures. Field parameters (temperature, pH, dissolved oxygen, conductivity, ORP, turbidity) will be measured and logged in the field notebook at periodic intervals using a hand-held water quality monitor. All purge water will be containerized and stored in appropriately labeled drums or totes and disposed offsite or treated and discharged in accordance with applicable local, state, and federal regulations.

Samples may be collected for various constituents including Metals, SVOCs, VOCs, PCBs, 1,4-Dioxane, and PFAS.

# Inventum Engineering, PC
# Site-Specific Health and Safety Plan (HASP)

(Required for all Type 2 and 3 projects.)

**Task 8 – Sampling of Residuals**

Samples will be collected from various sumps, pits, tanks and containers at the proposed BCP Site to characterize contents and prepare profiles for sale, recycling and disposal. To the extent practicable, all samples will be collected from the surface or from equipment outside the accumulation point to avoid the need for confined space entry. Samples may be collected installed using a bailer, hand-auger, shovel, trowel, sludge sampler or other long reach equipment. Material will be recovered, and field screened with a PID equipped with a 10.6 eV lamp. All observations and measurements will be logged in the field notebook. Samples may be collected for various constituents including Metals, SVOCs, VOCs, PCBs, hazardous characteristics, pH and water content.

**Inventum Role(s) On Site**:

- ☐ Inventum Staff Will Not Be On Site (HASP and Risk Analysis is for subcontractor information only)
- ☒ Resident Project Representative (*e.g.*, "Observe and Document")
- ☐ Construction Manager (*e.g.*, CM, Managing/General Contractor)
- ☒ Representative for Client (*e.g.*, "Agent for Owner")
- ☒ General On-site Consulting/Engineering Services
- ☒ Other

| | | |
|---|---|---|
| ☒ Soil Sampling | ☒ Solid Waste Sampling | ☒ Liquid Waste Sampling |
| ☒ Groundwater Sampling | ☒ Surface Water Sampling | ☒ Wastewater Sampling |
| ☐ Sediment Sampling | ☐ Surveying | ☐ Confined Space Entry |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

| Major Project Tasks | Inventum Task | Subcontractor Task | Minimum PPE Level Required see HASP for details (suggested levels for Subcontractor work) |
|---|---|---|---|
| 1. Site Management and Oversight | ☒ | ☐ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |
| 2. Surficial Soil Sampling | ☒ | ☒ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |
| 3. Subsurface Soil Sampling | ☒ | ☒ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |
| 4. Permit Compliance Water and Wastewater Sampling | ☒ | ☒ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |
| 5. Monitoring Well Abandonment | ☒ | ☒ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |
| 6. Monitoring Well Installation | ☒ | ☒ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |
| 7. Groundwater Monitoring and Sampling | ☒ | ☒ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |
| 8. Sampling of Residuals | ☒ | ☒ | ☐ N/A ☒ D ☐ C ☐ B ☐ A |

## 2. Contingency Planning

| LOCAL EMERGENCY RESOURCES: | |
|---|---|
| Ambulance: 911 | Emergency Room: 716.447.6100 |
| Police: 911 | Fire Department: 911 |
| NYSDEC Contact: Ben McPherson, Project Manager, 716.851.7220 | Poison Control Center: 1-800-222-1222<br>☐ Specify: |
| Other (client services offered, etc.): | |

| SITE RESOURCES: | | | |
|---|---|---|---|
| Drinking Water Supply | ☐ Inventum | ☐ Subcontractor | ☒ Client |
| Wash Water Supply | ☐ Inventum | ☐ Subcontractor | ☒ Client |
| Telephone – Land Line | | ☐ Subcontractor | ☒ Client |
| Telephone - Cellular | ☒ Inventum | ☐ Subcontractor | |
| First Aid Kit | ☒ Inventum | ☒ Subcontractor | |
| Fire Extinguisher | ☐ Inventum | ☒ Subcontractor | ☒ Client |
| Emergency Shower **N/A** | ☐ Inventum | ☐ Subcontractor | ☐ Client |
| Eye Wash **N/A** | ☐ Inventum | ☐ Subcontractor | ☐ Client |
| Other: Confined space retrieval device **N/A** | ☐ Inventum | ☐ Subcontractor | ☐ Client |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

| EMERGENCY/SAFETY CONTACTS: | |
|---|---|
| Inventum Technical Contacts | John Black (571.217.6761); Todd Waldrop (571.217.3627); James Edwards (571.232.5048) |
| Inventum Project Manager (PM): John Black | 571.217.6761 |
| Inventum Office Safety Coordinator (OSC) | John Black (571.217.6761); Todd Waldrop (571.217.3627); James Edwards (571.232.5048) |
| Inventum Field Contact: | John Black (571.217.6761); Todd Waldrop (571.217.3627); James Edwards (571.232.5048); Roxanne Birx (585.734.5255); Peter Zaffram (716.553.5129); |
| Contractor Contact (To Vary – Main Remedial Contractor provided): | Ontario Specialty Contracting; 716.856.3333 |
| Client Contact: | John Yensan (716.856.3333) |
| Front Gate Guard Shack | 716.783.5744 |

## Emergency Route:

Hospitals or clinics identified for emergency medical care should be contacted, to verify that emergency care is provided at that location. Verify the exact location of the medical facility during this call. See directions and map of route to Kenmore Mercy Hospital on the following page:

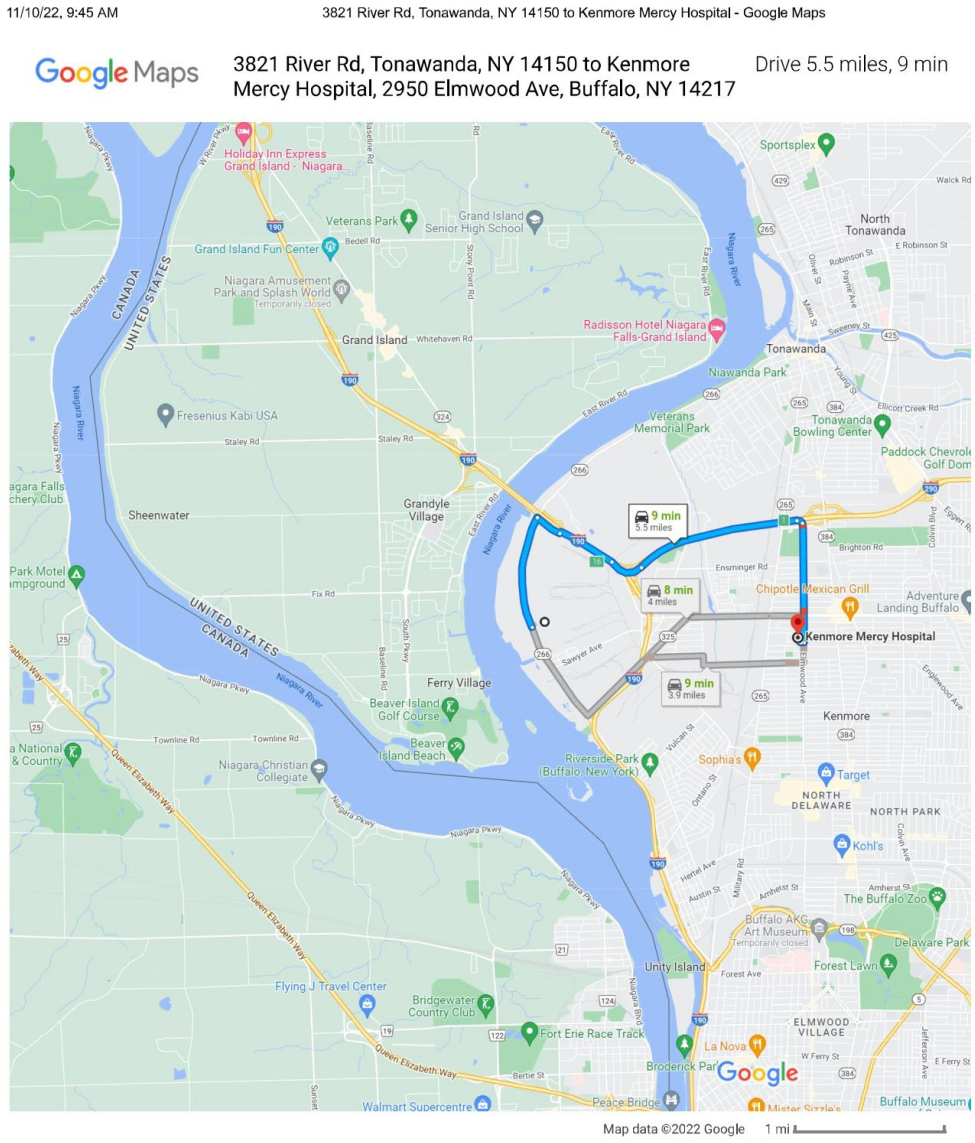
Hospital: **Kenmore Mercy Hospital**
**2950 Elmwood Ave**
**Buffalo, NY 14127**
**716.447.6100**

Other: NA

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

## Map to Hospital




## Directions to Hospital:

- **Turn right onto River Road**
- **Turn right onto Grand Island Blvd (about 1.2 miles)**
- **Turn left to merge onto I-190 S toward I-290.**
- **Use the right 2 lanes to take exit 16 for I-290 East toward I-90 / Tonawanda / Rochester**
- **Continue onto I-290 East**
- **Take Exit 1 for Elmwood Avenue**
- **Keep left at the fork to continue on Elmwood Avenue, follow signs for I-290 East/Elwood Avenue/Knoche Road/Delaware Avenue**
- **At about 1.5 miles and turn right onto Elmwood Avenue**
- **Make a sharp right and hospital is on left**

**Emergency Procedures:**

If an emergency develops at the site, the first responder should take the following course of action:

- Notify the proper emergency services for assistance.
- Notify other personnel at the site.
- As soon as possible, contact the Inventum Project Manager to inform them of the incident.
- Complete the Inventum Incident Report Form (see Appendices) within 24 hours of the incident and client notifications, as required.

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Investigation of Near Miss Incident and Initial Report of Incident/Exposure:**

Inventum employees are required to report any incident, near miss, or injury, as soon as possible, by contacting the following:

☒ Inventum Managing Partner ☒ Notify supervisor ☒ Notify project manager

☐ Notify Site Manager () ☐ Complete client report: as required

(name):
(phone number):

## Emergency Equipment Required On Site:

☒ First Aid Kit

☐ Emergency Eye Wash

☐ Emergency Shower

☐ Fire Extinguisher

☐ Spill Control Media

☐ Tripod/Hoist/Harness for non-entry confined space rescue

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

## 3. Site Classification

| | Identification of Potential Hazards | YES | NO | SITE TYPE[1] |
|---|---|---|---|---|
| 1. | Is the work a Phase I ESA (i.e., supervised plant walk-through, etc.)? | ☒ | ☐ | 1 |
| 2. | Is the work being performed solely by a subcontractor (i.e., INVENTUM not on site)? | ☐ | ☒ | 1 |
| 3. | Is the work just a supervised inspection for process evaluation, other inspections, meetings, records review, or a tour? | ☒ | ☐ | 1 |
| 4.[1] | Is the work completely absent of any chemical, physical, biological, or radiological hazards which would require a site-specific health and safety plan? | ☐ | ☒ | 1 |
| 5. | Does the work include any mandatory client H&S requirements? | ☒ | ☐ | 1, 2, or 3 |
| 6. | Does the project include on-site work other than office type areas? | ☒ | ☐ | 2 or 3 |
| 7. | Does the proposed work scope involve any of the following: | | | |
| | Known and controlled chemical or biological hazards | ☒ | ☐ | 2 |
| | Unprotected work at elevation (fall protection required) | ☐ | ☒ | 2 |
| | Invasive activities (*i.e.,* Phase II ESA, UST Removal, sampling, etc.) | ☒ | ☐ | 2 or 3 |
| | Exposure to ionizing radiation (i.e., using nuclear gauges, etc.) | ☐ | ☒ | 2 or 3 |
| | Open excavations/trenches (Competent Person may be required on site) | ☒ | ☐ | 2 or 3 |
| | Confined space entry (permit may be required) | ☐ | ☒ | 2 or 3 |
| | The use of scaffolding (qualified inspections are required) | ☐ | ☒ | 2 or 3 |
| | Heavy equipment | ☒ | ☐ | 2 or 3 |
| | Facility maintenance (O&M, piping, electrical, lockout/tagout, etc.) | ☐ | ☒ | 2 or 3 |
| | Underground utilities may be encountered | ☒ | ☐ | 2 or 3 |
| | Overhead utilities may be encountered | ☒ | ☐ | 2 or 3 |
| | Stack testing | ☐ | ☒ | 2 or 3 |
| | Geotechnical drilling | ☒ | ☐ | 2 or 3 |
| | Demolition Activities with known or suspected contamination | ☒ | ☐ | 2 or 3 |
| | Unknown or uncontrolled chemical or biological hazards | ☐ | ☒ | 3 |
| | Known and uncontrolled chemical or biological hazards | ☒ | ☐ | 3 |
| | Waste sampling | ☒ | ☐ | 3 |
| | Construction activities with known or suspected contamination | ☒ | ☐ | 3 |
| | Remedial activities (RCRA, CERCLA, EnviroBlend®, Oxigent, etc.) | ☒ | ☐ | 3 |
| 8. | Is the work regulated by 29 CFR 1910.120 (OSHA) or 30 CFR (MSHA)? | ☒ | ☐ | 3 |
| 9. | Is the work regulated by NPL, CERCLA, RCRA, TSD, or SARA? | ☒ | ☐ | 3 |

[1] Denotes typical site level (based on activities).

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Site Type Designation:**

☐ **Type 1** Known and controlled hazards associated with consulting/engineering services.

☐ **Type 2** Known and controlled hazards, but with invasive, hazardous activities and/or civil/mechanical construction related services, or sampling.

☒ **Type 3** Unknown and/or uncontrolled hazards associated with corrective action clean-up, and/or remediation of hazardous substances.

## 4. Site Characterization

| | | | |
|---|---|---|---|
| Client Requirement(s)[1]: | ☒ None | ☐ Site Orientation | ☐ H&S Orientation |
| | ☐ Permits or Other Requirements (specify and attach, if available): | | |
| Site Information: | ☒ Map/Diagram (attach) | ☐ Map/Diagram Unavailable | |
| | ☐ Inactive Site | ☒ Active Site (specify below) | |
| General Environmental Concerns: | ☒ Contaminated Water | ☒ Wastewater | ☒ Dust |
| | ☒ Contaminated Soil | ☒ Solid Waste | ☒ Noise |
| | ☒ Contaminated Air | ☒ Waterways | ☐ Other: |
| Site Security/Access Control: | ☐ None | ☒ On Site | |
| | ☐ Other (explain): | | |
| Amenities Available for Work: | ☐ None | ☒ Waste Storage | ☒ Restrooms |
| | ☒ Tools/Equipment Storage | ☒ Office/Trailer Space | ☒ Supplies Storage |
| Utilities Available for Work: | ☐ None | ☒ As Listed: Water, electric | |
| Medical Services Available: | ☐ None On Site | ☒ As Listed: First aid | |
| Facility Alarms/Signals: | ☒ None | ☐ As Listed: | |
| Traffic/Parking/Railway Issues: | ☐ None | ☒ As Listed (On-Site/Off-Site): On-site parking | |
| ☐ Permits Required (specify)[2]: | ☐ Confined Space Entry | ☐ Local: | ☐ State: |
| | ☐ Federal: | ☐ Other: | ☒ N/A |
| ☒ Utility Locate Service(s): | ☒ On Site | ☐ Client | ☒ Other: Former Site employees contracted to client for daily site management |
| | ☐ Off Site | ☐ | ☒ One Call |
| | | ☐ | ☐ N/A |

[1] If relying on the client for any specific hazard identification and control, implemented control and effectiveness should be documented prior to beginning any work activities. This is recommended for all field projects.

[2] Permit examples: Utilities (electrical, water, gas, etc.); Excavations; Explosives; Cranes; Burning; Fuel storage; Traffic control; Hoists; Cutting; Welding; Demolition; Confined space; Restricted access areas; etc.

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

Detailed Physical Description of Site/Facility: ☒ **Map/Diagram Attached**

The 17.446-acre Site is located at 3821 River Road, Town of Tonawanda, Erie County, New York. The Site is located approximately 0.25 miles west of I-90 on the east side of River Road. The surrounding properties are primarily industrial or vacant.

The Site was originally developed by Allied Fibers and Plastics Company (Allied), which is now Honeywell International, in the early 1950s, and was operated as a manufacturing facility through 1982. Site operations by Allied included the polymerization of ethylene into low molecular weight polyethylene (trademark: A-C Polyethylene and Co-polymers), which was finished into powder, pelleted and solid forms. Allied sold the property to Rouse Breihan, Inc. in 1985. Rouse Breihan conducted some management and laboratory testing for the Tonawanda Coke Corporation (TCC) on the proposed BCP Site. A trucking firm also used the site for vehicle maintenance and parking. The Site has been vacant since 2019. 3821 River Road, Inc. purchased the Site from Rouse Breihan Inc. on August 2, 2022.

Approximately 23 buildings are present on the Site and 12 aboveground storage tanks (AST) with aboveground and below grade piping are located in the center portion of the Site. The remaining buildings are unoccupied and unmaintained.

**Previous Site Remediation**

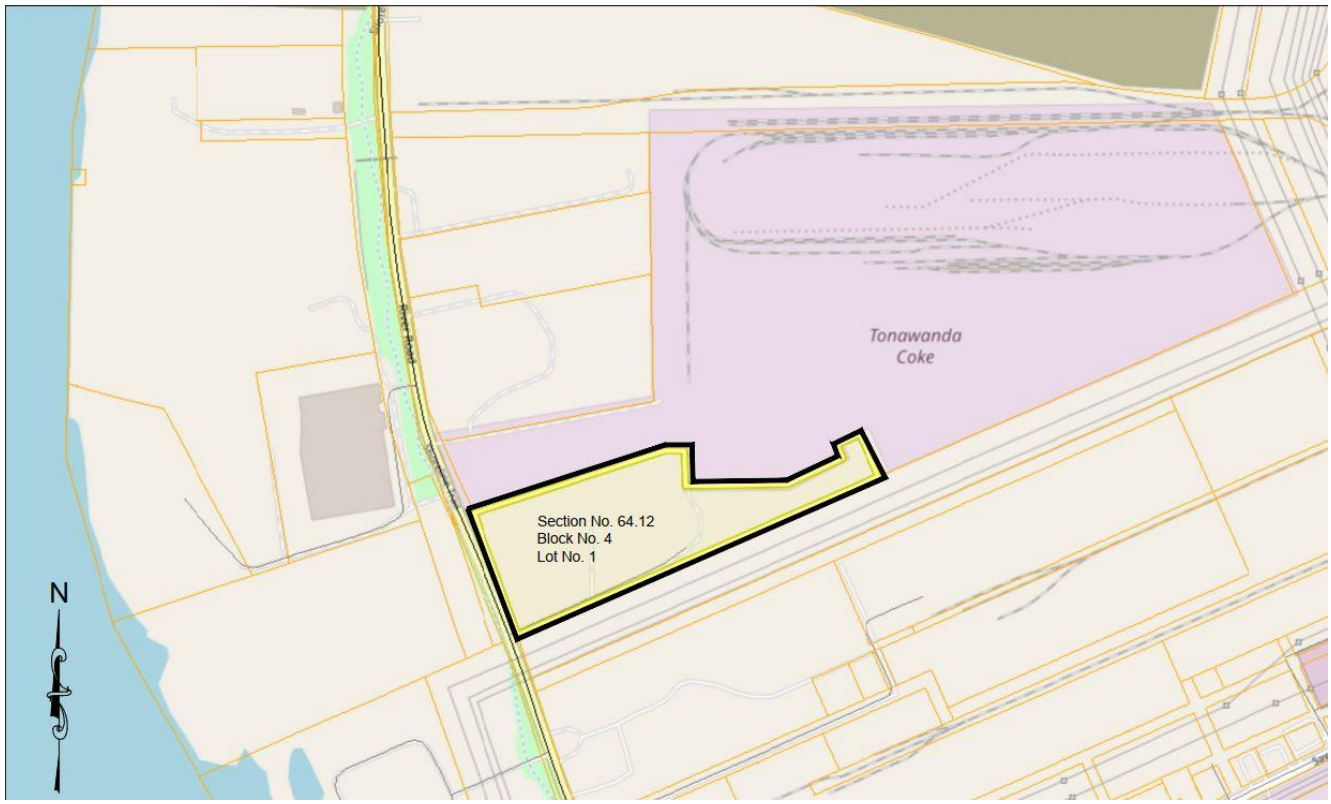
During the summer of 1981, approximately 500 cubic yards (CY) of "tar" and soils were excavated and removed from an area approximately 100-feet by 10 to 20-feet wide located in the eastern portion of the Site along the southern property boundary. The Coal Tar Site (NYSDEC Inactive Hazardous Waste Site 915003C) consisted of an area of the plant property where pools of what was described as "coal tar", from spillage and leakage during product-transfer operations, were located. The tar removal was completed by the TCC, under agreement with Allied, as part of the demolition of the idle facility termed the "tar storage" terminal. Tar removal was completed to the underlying clay layer. Analytical results of confirmatory soil samples collected following the excavation showed that residual chemicals of concern (COCs) were not detected or were in low parts per million (ppm) concentrations. Three test holes adjacent to the excavation were completed to a depth of approximately three feet to determine if any further migration of coal tar had taken place and no contamination was observed in the test holes. In addition to the "tar" and soil removal, a buried coal tar pipeline was also removed to the property limits. As part of the pipeline removal, an underground tank which was used as a "blow-down" tank for the transfer line, was removed. NYSDEC informed Allied in October 1981 that no further remediation was necessary in the Coal Tar Site and blow down tank area.

The site was sampled by the United States Geological Survey (U.S.G.S.) in July of 1982 and in May of 1983 under the Niagara River Toxics Investigation. Chromium and lead exceeded concentrations in samples taken from undisturbed soils in the Tonawanda area. Twenty-one organic priority pollutants were detected in the soil samples and all concentrations were below 10 parts per billion (ppb). A Phase I Investigation was completed in 1983 and an investigation was carried out at the end of 1988. Soil samples collected inside the pit showed high levels of chromium and elevated levels of lead. Sediment from an onsite catch basin showed elevated metals concentrations. Sampling and analysis of five off-site sewer samples showed no migration from this source. To further the investigation, up-gradient monitoring wells and four additional wells were installed. Sampling of the monitoring wells over one year showed groundwater exceedances for cyanide, benzene, ethylbenzene, toluene, xylene, and numerous poly aromatic hydrocarbons (PAH) compounds.

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

*Figure 1; Site Location*




**Site Activities/Current Operations:** ☒ None ☐ As Specified

**Other Concurrent Site Activities, Work, and/or Other Adjacent Hazards or Concerns:**

☒ None

As Specified:

| | | | |
|---|---|---|---|
| ☐ Schools | ☐ Daycare | ☐ Hospital | ☐ Airport |
| ☐ Residential | ☐ Offices | ☐ Shopping | ☐ Active parking lot in work space |

## 5. Hazard Evaluation

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

| Complete [1] Substance Name (be specific) | Specific Applicable OSHA Standard (if any) | Physical State [2] (S, L, G, Aq, Vap, F, P) | Max. [3] Conc. Level Per Physical State | General [4] Control Measures (Eng., Admin., PPE) |
|---|---|---|---|---|
| Acetone | 2400 mg/m3 | L | 82 ug/L | Eng., PPE |
| Acenaphthene | NA | S | 790 ug/kg | Eng., PPE |
| Acenaphthylene | NA | S | 3,200 ug/kg | Eng., PPE |
| Anthracene | 0.2 mg/m3 | S | 14,000,000 ug/kg | Eng., PPE |
| Benzo(a)anthracene | 0.2 mg/m3 | S, L | 3,100,000 ug/kg, 0.4 ug/L | Eng., PPE |
| Benzo(a)pyrene | 0.2 mg/m3 | S | 2,800,000 ug/kg | Eng., PPE |
| Benzo(b)fluoranthene | 0.2 mg/m3 | S | 3,200,000 ug/kg | Eng., PPE |
| Benzene | N/A | S, L | 86,000 ug/kg, 84 ug/L | Eng., PPE |
| Benzo(G,H,I) perylene | 1 ppm | S | 1600,000 ug/kg | Eng., PPE |
| Benzo(k)Fluoranthene | NA | S | 1,300,000 ug/kg | Eng., PPE |
| Biphenyl (Diphenyl) | | L | 31 ug/L | Eng., PPE |
| Bis(2-Ethylhexyl) Phthalate | NA | L | 34 ug/L | Eng., PPE |
| Chrysene | 0.2 mg/m3 | S | 3,000,000 ug/kg | Eng., PPE |
| cis-1,2-Dichloroethene | 0.2 mg/m3 | L | 50 ug/L | Eng., PPE |
| Dibenz(a,h)anthracene | NA | S | 460,000 ug/kg | Eng., PPE |
| Ethylbenzene | 545 mg/m3 | S, L | 1,700 ug/kg, 20.0 ug/L | Eng., PPE |
| Fluoranthene | NA | S | 9,400,000 ug/kg | Eng., PPE |
| Fluorene | NA | S | 4,400,000 ug/kg | Eng., PPE |
| Hexachlorocyclopentadiene | NA | L | 50 ug/L | Eng., PPE |
| Indeno(1,2,3-Cd) Pyrene | NA | S | 15,000,000 ug/kg | Eng., PPE |
| Naphthalene | 50 mg/m3 | S, L | 11,000,000 ug/kg, 1700 ug/L | Eng., PPE |
| Pentachlorophenol | 0.5 mg/m3 | L | 100 ug/L | Eng., PPE |
| Phenanthrene | 0.2 mg/m3 | S | 13,000,000 ug/kg | Eng., PPE |
| Phenol | 19 mg/m3 | L | 3.5 ug/L | Eng., PPE |
| Pyrene | NA | S | 5,900,000 ug/kg | Eng., PPE |
| Toluene | 200 ppm | S, L | 83,000 ug/kg, 12 ug/L | Eng., PPE |
| Trichloroethene | 100 ppm | L | 5.9 ug/L | Eng., PPE |
| Total Xylenes | 435 mg/m3 | S, L | 120,000 ug/kg, 34 ug/L | Eng., PPE |
| Vinyl Chloride | 1 ppm | L | 5.4 ug/L | Eng., PPE |
| Arsenic | 10 $\mu g/m^3$ | L | 920.0 ug/L | Eng., PPE |
| Barium | 0.5 mg/m3 | L | 4,900.0 ug/L | Eng., PPE |
| Beryllium | 0.2 $\mu g/m^3$ | L | 11.0 ug/L | Eng., PPE |
| Cadmium | 5 $\mu g/m^3$ | L | 16.0 ug/L | Eng., PPE |
| Chromium, Total | 1 mg/m3 | S, L | 37,600 ug/kg, 5,800 ug/L | Eng., PPE |
| Copper | 0.1 mg/m3 | L | 510.0 ug/L | Eng., PPE |

| | | | | |
|---|---|---|---|---|
| Iron | 10 mg/m3 | L | 491,000.0 ug/L | Eng., PPE |
| Lead | 0.05 mg/m3 | L | 1,200.0 ug/L | Eng., PPE |
| Magnesium | NA | L | 1,180,000 ug/L | Eng., PPE |
| Manganese | NA | L | 12,300 ug/L | Eng., PPE |
| Nickel | 1 mg/m3 | L | 1,700 ug/L | Eng., PPE |
| Selenium | 0.2 mg/m3 | L | 13 ug/L | Eng., PPE |
| Sodium | NA | L | 491,000 ug/L | Eng., PPE |
| Zinc | 5 mg/m3 | L | 4,100 ug/L | Eng., PPE |
| Mercury | NA | L | 1.7 ug/L | Eng., PPE |
| Cyanide | 5 mg/m3 | L | 2.2 ug/L | Eng., PPE |
| | | | | |

(1) Use OSHA regulated name, not elemental forms. If available, attach SDS. Identify any sample preservative or O&M chemicals or subcontractor chemicals in this table also.
(2) S = Solids, L = Liquid, G = Gas, Aq = Aqueous, Vap = Vapor, F = Fume, P = Airborne Particulate.
(3) Site Maps with Soil and Groundwater exceedances are included in Attachment A.
(4) See the following sections for detailed control measures: personal protection equipment (PPE), Air Monitoring (Admin), or Site Control (Admin and Eng.).
(6) IP = Ionization Potential, VP = Vapor Pressure, LEL = Lower Explosive Limit, UEL = Upper Explosive Limit, N/A = Not Applicable, N.D. = Not Determined
(7) IDLH = Immediately Dangerous to Life and Health. NEVER enter IDLH conditions on site without proper respiratory protection.
(8) C = Ceiling Value, ST = Short-Term Exposure Limit, TWA = Time-Weighted Average, None Est. = None Established
(9) R = Respirable Limit, T = Total Limit
(10) Warning Properties: Good (G), Poor (P), None (N)

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

## 5. Hazard Evaluation (continued)

### Site-Specific Physical Hazards

| HAZARD | SPECIFIC CONTROL MEASURE |
|---|---|
| Slip/Trip/Fall Injury | – Use roads or trails whenever possible.<br>– Occasionally reassess route to avoid dangerous terrain.<br>– Maintain good housekeeping and keep work area clear of loose materials and equipment.<br>– Use portable steps to mount and dismount sampling vehicle. |
| Ingestion of or contact with impacted soil | – Wear safety glasses.<br>– Wear nitrile and appropriate cut-/puncture-resistant gloves (see Glove Selection Guideline) when performing tasks.<br>– Wash hands and arms thoroughly when daily work is completed.<br>– No eating, drinking, or smoking while conducting monitoring or sampling activities. |
| Pinched fingers or toes | – Wear appropriate cut-/puncture-resistant gloves (see Glove Selection Guideline) when the potential for hand injury exists.<br>– Wear steel-toed safety shoes with steel shanks while on site. |
| Strained muscles | – Use proper lifting posture, techniques, and equipment when handling heavy objects.<br>– Use two people for loads >40 lbs. or awkward items.<br>– Take rests as needed during and between carries. |
| Cutting activities | |
| Flying debris/eye injuries | – Wear ANSI-approved safety glasses when the potential for flying debris and eye injuries exists. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Aboveground Storage Tanks (AST) | Be aware of any aboveground storage tanks and the type of material being stored in them. Be aware of the potential of spills, fires, explosions, etc., while working near the tanks. Stay clear of tanks whenever possible and be aware of any equipment operators near the tank(s). |
| ☒ | Animals (dogs, etc.) | Be aware of any animals on site or adjacent to the site. Appropriate care should be taken if any feral (wild) animals are encountered. |
| ☐ | Blasting/Explosives | INVENTUM personnel shall not handle any explosive devices or materials. INVENTUM personnel should understand the blasting procedures being used by the subcontractor, and all of the associated health & safety precautions. The subcontractor shall handle, store, and use the explosives in accordance with 29 CFR 1926.900, Subpart H and U. |
| ☐ | Boat or Barge | A boat or barge should be used that is adequately stable for the type of activity conducted. The boat or barge should have all of the appropriate and current licensing and registrations required by the applicable regulatory agencies. All applicable laws and regulations will be followed when launching the boat or barge, and when navigating to and from the work site. Personal floatation devices should always be worn while navigating the boat or barge.<br>The boat must be equipped with the following approved United States Coast Guard (USCG) safety equipment:<br>– A Type 1, 2, or 3 personal flotation device (PFD) for every person aboard (should be worn while navigating)<br>The following equipment is recommended:<br>– A Type 4 throwable PFD<br>– Audible distress signal device (air horn, whistle)<br>– Fire extinguisher (if engine-propelled)<br>– Auxiliary propulsion (spare paddles, trolling motor)<br>– Bow and stern lines<br>– Anchor and anchor line<br>– First aid kit<br>– Visual distress signal device(s) (flares, dyes)<br>– Additional PFDs<br>Be familiar with local weather and tidal characteristics. Do not conduct sampling from a boat/barge when threatening weather is imminent, or poor visibility exists.<br>Sampling from a boat is prohibited in water containing substances likely to cause injury upon short-term or prolonged contact.<br>Sampling from a boat is prohibited when the temperature of the water is high or low enough to cause injury upon short-term or prolonged exposure.<br>Avoid sampling from a boat when unsafe water turbulence (waves) exists.<br>Avoid standing in a boat.<br>Always use the buddy system when sampling from a boat or barge; one person should be on shore with visual contact of the barge and should be able to summon emergency assistance if needed.<br>Be familiar with local weather and tidal characteristics. Work on a boat or barge will not be performed when threatening or severe weather is impending or present. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Briars or Thistles | Be aware of any briars or thistles on site. Wear appropriate clothing and gloves. Avoid contact with briars or thistles whenever possible. |
| ☒ | Business Traffic | Be aware of traffic patterns associated with local businesses near the work site. Allow traffic to enter and exit the businesses in such a manner to avoid creating traffic hazards, back-ups, delays, or potential accident situations. |
| ☐ | Cement Dust | Stay clear of mixing operations and avoid contact with or breathing of the dust. |
| ☐ | Chain Saws | Stay clear of any chain saw operations. Subcontractor is responsible for the safe use of chain saws on site. |
| ☐ | Cleaning Agents | Use caution when applying cleaning agent to equipment. Use gloves, safety glasses, splash shields, and protective clothing as needed. |
| ☒ | Client Activities | Be aware of client activities at or adjacent to the site. Work activities should be coordinated with other site activities to avoid conflicts. Contact EDP offices prior to starting work. |
| ☒ | Cold Stress | Work schedules may be modified when temperatures are below 20° F as measured by the wind chill factor. Take frequent breaks to warm up. Drink plenty of fluids. Wear appropriate clothing, and monitor for cold stress symptoms (frostbite, hypothermia, etc.). |
| ☒ | Compressed Air or Gas Cylinders | Compressed air or gas cylinders should be clearly marked, and they should be stored, transported, and secured in an approved manner. |
| ☒ | Compressed Air/Gas or Pressurized Liquids Hoses, Lines & Fittings | Compressed air or gas, or pressurized liquid lines or hoses should be inspected at least daily, or in the event a leak develops, or if a line or hose is run over or crimped. |
| ☐ | Concrete/Masonry/ Foundations | No construction loads shall be placed on a concrete structure or portion of a concrete structure unless a person who is qualified in structural design has determined that the structure or portion of the structure is capable of supporting the loads. All protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement. No employee shall be permitted to work under concrete buckets while buckets are being elevated or lowered into position. To the extent practical, elevated concrete buckets shall be routed so that no employee, or the fewest number of employees, are exposed to the hazards associated with falling concrete buckets. A limited access zone shall be established whenever a masonry wall is being constructed. All masonry walls over eight feet in height shall be adequately braced to prevent overturning and to prevent collapse unless the wall is adequately supported so that it will not overturn or collapse. The bracing shall remain in place until permanent supporting elements of the structure are in place. |
| ☐ | Confined Spaces (tanks, vaults, vessels, trenches, manholes, some excavations, etc.) | The scope of this project does entail entry into confined spaces. Confined spaces will not be entered unless a confined space entry permit has been completed, signed, and approved, and all participating personnel are trained in confined space entry procedures, including safety, and rescue procedures.<br>All potential hazards of confined space may not be addressed by this hazard assessment, and health and safety plan. |
| ☒ | Cutting Tools | Stay clear of contractors' cutting tools, especially saws and torches. Be aware that cutting operations could create other hazards, such as falling objects, or shifting materials, etc. Safety glasses should be worn while using cutting tools. Spark-proof tools should be used when working in areas of potential explosive or flammable conditions. Fixed-open blade knives are prohibited. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Demolition Activities | Stay clear of walls, ceilings, roofs, etc., as they are being demolished. |
| ☒ | Demolition Debris | Demolition material should only be handled by appropriate equipment because of sharp points, edges, etc. Demolition material may also pose a trip hazard, fall, or puncture hazard, so avoid walking or climbing on debris piles, etc. |
| ☒ | Drums | If drums are used on-site, they should be clearly labeled with the name of the contents and the appropriate label. Drums should only be handled with the appropriate equipment. Drums discovered during excavations, etc., shall not be opened or moved until appropriate identification can be performed. At a minimum, Level B protection is required for sampling any unlabeled drums discovered during remediation procedures. |
| ☒ | Dust/Particulates (Particulates Not Otherwise Regulated) (PNOR) (OSHA PEL = 15 mg./$m^3$, total) (OSHA PEL = 5 mg./$m^3$, respirable) | For general dust, work should be performed up-wind if possible. If conditions warrant it, monitoring should be done with a PM-10. Monitoring should occur at least 3 times per day, and every time re-entering the site. Readings should be taken downwind from the work area or inside the equipment as indicated by the conditions on site. If the OSHA PEL is exceeded, or is likely to be exceeded, engineering or administrative controls should be used, or a dust respirator must be worn. For hazardous dusts, a detailed air monitoring plan and a respiratory protection plan should be developed for the site activities. |
| ☐ | Elevated Work | For any construction work activities elevated 6 feet or more, or other non-construction activities elevated 4 feet or more, fall protection must be provided. Caution should be taken on catwalks and ladders because of potential slippery conditions, or the potential for footwear to catch on the surfaces. |
| ☐ | Energized Sources (electrical equipment or hookups, lines, etc.,) (Lockout/Tagout) | Contractors for all electrical activities, and any facility equipment with moving parts should follow proper lock-out/tag-out procedures, and only properly trained employees will perform the work. Employees will not perform any lock-out/tag-out activities unless personnel are properly trained in lockout/tagout procedures. Heed any caution signs or labels. |
| ☒ | Equipment Exhaust | Equipment exhaust should be ventilated away from the work area while drilling inside structures. Industrial fans can be used to move exhaust out of the area. |
| ☒ | Ergonomic Issues (job hazard analysis) | Ergonomic hazards will be addressed on a site-specific basis once mobilization to the field has occurred. Workstations will be evaluated on an individual basis. |
| ☒ | Evening Work | If work is performed during the evening hours, work shall be limited by the availability and the quality of artificial lighting. Care should also be taken to avoid slip, trip, and fall hazards that are not as easy to identify during low light conditions. |
| ☒ | Excavations | Stay clear of excavation walls. INVENTUM personnel will not enter an excavation, in accordance with 1926 Sub Part P. Subcontractor must provide a Competent Person on site if one is required by the planned activities. Side cuts should conform to 1926 Subpart P requirements, or shoring should be used. All open excavations should be secured using traffic cones, barrier tape, or barricade signs stating, "Do Not Enter Excavations", especially if left open overnight. |
| ☐ | Explosives | Be aware of potential explosive materials and how to identify them. No smoking is allowed on-site or near where potential explosive materials may be present. |
| ☒ | Facility Conveyors (product or waste lines) | Stay clear of facility conveyors, product process lines, and waste disposal lines. Be aware of any client-specific health and safety requirements to work in these areas. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Facility Equipment/Machinery | Be aware of active and moving client equipment on site. |
| ☒ | Facility Piping - aboveground | Stay clear of aboveground pipes. Client is responsible to identify all applicable aboveground facility pipes prior to any work activities in the area. Pipes can be overhead hazards, or trip hazards. Pipes can be hazardous because of the material flowing through them, such as steam, natural gas, toxic chemicals, etc. Some pipes are also coated with hazardous material such as asbestos. |
| ☒ | Facility Piping - belowground | Client is responsible to identify all applicable underground facility pipe locations prior to any subsurface activities. |
| ☐ | Fall Hazard | Proper tie-off, harnesses, railings, etc. should be used when performing work on ladders, scaffolding, man-lifts, or on the roof of buildings, etc. Stay clear of the edges of pits, trenches, quarries, etc. |
| ☒ | Falling Objects | Be aware of any potential falling objects or materials on site. Stay clear of any areas identified as potential falling object areas. |
| ☒ | Fences | Be aware of fences in disrepair that may be trip hazards or may have materials that could cause punctures or cuts. Use caution when crossing over or under fences. |
| ☒ | Field Equipment | If field equipment is heavy or awkward to carry, get assistance or use carts to help move around the site. |
| ☒ | Field Vehicle | Inventum personnel shall follow all applicable state and federal traffic laws while traveling to and from the site, and while working on the site. In particular, the following laws should be followed: speed limits, parking restrictions, use of wipers and lights during precipitation events, limiting cell phone use, etc.<br>It is the responsibility of the driver to verify that all safety equipment on the vehicle is working properly before driving the vehicle. In particular, the following items should be checked: tire pressure, tire tread, windshield wipers, windshield washer, headlights, tail lights, brake lights, spare tire, fire extinguisher, first aid kit, etc. |
| ☒ | Fire Hazards | Eliminate sources of ignition in work areas that have ignitable materials. Provide an ABC fire extinguisher in close proximity to the support zone. |
| ☒ | Flooded Areas | Do not drive through flooded areas or standing water. Do not wade into moving water, or water deeper than 2 feet without adequate assistance. |
| ☒ | Flying Debris/ Eye Injuries | Be aware of any flying debris on site and wear protective eyewear when necessary. |
| ☒ | Fork Lifts | Be aware of forklift patterns and stay clear of those routes. |
| ☒ | Hand Tools | Use only the appropriate tool for the task at hand. Use the tool(s) as designed, described, and intended by the manufacturer. |
| ☒ | Heat Stress | The work schedule may be modified if the ambient temperature is more than 80° F. Take breaks as necessary, and drink plenty of fluids. If necessary, wear sunscreen and sunglasses on bright days. Monitor site personnel for signs of heat stress symptoms (heat rash, heat cramps, heat exhaustion, or heat stroke). |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Heavy Equipment | Contractor is responsible for safe operation of equipment. All mobile heavy equipment must have a functioning backup alarm, and operators must comply with manufacturer's equipment instructions. Maintain proper distance and remain in line of sight of operator and out of reach of equipment. Isolate equipment swings, if possible. Make eye contact with the equipment operator before approaching the equipment. Understand and review hand signals, and wear orange safety vest, if necessary. |
| ☒ | Heavy Lifting | Use proper lifting procedures and equipment when handling heavy objects such as drums, manhole covers, tank covers, etc. |
| ☒ | High Pressure Gas Lines, etc. | Be aware of high-pressure gas lines and follow approved safety precautions when working with or around the lines. |
| ☐ | Highway Traffic | Traffic control within the right-of-way will be in accordance with the WDOT "Work Zone Safety – Guidelines for Construction, Maintenance, and Utility Operations" procedures. Work may be restricted within specific lanes during peak traffic times. Verify peak traffic times, and review planned activities with the WDOT, so that appropriate lane closures can be coordinated. |
| ☒ | Housekeeping | All field vehicles, job trailers, and field offices will be properly cleaned and organized to prevent cluttered work and storage areas. |
| ☐ | Hunters/Firing Range, etc. | Be aware of surrounding activities that may involve hunting, firearms, etc. that may not be in your immediate area, but could create an unsafe work environment. |
| ☒ | Ice (thin) | When project activities include either crossing ice or working directly on the ice, a detailed plan should be developed that will be used to continually evaluate the ice conditions, and to determine when work should be terminated due to unsafe conditions. All staff working on the ice will wear an appropriate and approved personal flotation device. Other emergency equipment such as ropes, a throwable flotation device, a means to warm a wet and cold worker, etc. must be available. A buddy system should also be used for this type of work, such that one person is always on shore or at least on previously determined safe ice. |
| ☒ | Insects (ticks, bees, spiders, etc.) | Site workers with known allergies to insect bites should carry their own medication. In case of emergencies, inform fellow workers of any severe allergies. Use insect repellant as necessary, and as specifically allowed on site. If possible, wear long-sleeved shirts and pants. If appropriate, check for ticks at the end of each day. Have other appropriate first aid supplies handy for bites. |
| ☒ | Stakeholders | Be aware of the potential for irate neighbors or outsiders that may interfere with work activities, or that may potentially damage equipment or on-site materials, etc. |
| ☐ | Ladders | Ladders should only be used if they are in good condition, conform to OSHA requirements, and if they will be used in an appropriate manner. Be especially cautious of slipping on ladders when the ladder or footwear is wet or dirty. |
| ☐ | Landfill Gas (Methane, CO2, Hydrogen Sulfide) | Avoid breathing gas, especially in low oxygen areas (simple asphyxiant). Potentially flammable and explosive, so keep ignition sources away from gas. Explosive conditions of LEL >5% in a work area should be ventilated as soon as possible, or the area should be evacuated. |
| ☐ | Leachate (Municipal Solid Waste (MSW)) | MSW leachate may contain hazardous biological substances, so avoid physical contact with leachate and, if possible, stay up-wind. If contact is made with leachate, wash affected areas thoroughly with soap and water. If boots contact leachate, they should be thoroughly washed with soap and water also. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Lead | Wear gloves when in contact with lead contaminated soil, etc. Thoroughly wash hands and arms when daily work is completed. |
| ☒ | Long Hours/Fatigue | Long work hours can lead to fatigue, and fatigue can lead to the physical inability to perform the work in a safe manner, or travel to or from a work site in a safe manner. If long work hours are scheduled, or if the scheduled work takes longer than planned, field staff should determine if fatigue is, or will be, an issue. Field staff should evaluate whether they are able to complete the work in a safe manner, or whether they are able to travel in a safe manner. If fatigue is an issue, appropriate breaks should be planned or taken, including overnight stays when necessary. |
| ☒ | Material Handling | Move containers and heavy material only with the proper equipment, and secure them to prevent dropping, falling, or loss of control during transport. Stay clear of material handling operations, especially near slopes. Do not stand down the slope from equipment, supplies or materials being moved above on the slope, or being deployed onto the slope. |
| ☒ | Material Storage | Stored material may be a falling hazard, or a crush hazard. Do not stand adjacent to materials stacked up, such as pipes, geosynthetic rolls, etc., or in the area of deployment. |
| ☐ | Methane Gas (Landfill Gas) | Explosive conditions (5% LEL) will be ventilated, if encountered, prior to working in an area. Methane is a simple asphyxiant. |
| ☐ | Mine or Quarry | No work shall be performed within 15 feet (or other designated client setback, whichever is greatest) of the mine or quarry walls. Be aware of the potential for falling rocks or slope failures. |
| ☐ | Municipal Solid Waste (MSW) | MSW may contain hazardous biological substances, so avoid physical contact, and if possible, stay up-wind. Wear appropriate PPE, such as gloves, safety shoes, and safety glasses. Wash hands, arms, and face after working near MSW. Reusable PPE and equipment should be thoroughly decontaminated after exposure to MSW. MSW may also contain sharp objects with the potential to puncture PPE. |
| ☒ | Natural Gas | Natural gas is flammable and explosive. Keep ignition sources away from gas sources. Use spark-proof tools when working with gas lines, etc. |
| ☒ | Noise | Hearing protection must be worn when noise levels exceed 85 dBA in the work area. If you need to raise your voice to be heard at the work site, then hearing protection should be worn. Hearing protection will be worn near drill rigs. |
| ☒ | Overhead Hazards | Pay attention to overhead equipment, piping, and structures. A hard hat must be worn at all times when overhead hazards are present on site including the operation of a drill rig. |
| ☒ | Pedestrian Traffic (public, client, workers) | Be aware of pedestrian traffic patterns and route traffic around the exclusion zone(s), as necessary, to avoid distractions and the potential for exposures or accidents. Use appropriate barricades and caution tape to mark work areas. |
| ☒ | Poisonous Plants | Be able to identify any local poisonous plants and avoid them if possible or wear protective clothing as necessary. When removing potentially exposed clothing or PPE, the clothing or PPE should be carefully and thoroughly washed or decontaminated. |
| ☒ | Portable Heaters | Be aware of portable heater locations and stay a safe distance from them. |
| ☒ | Power Washing Equipment | Stay clear of the power washing nozzles and equipment. |
| ☒ | Propane Tanks | Be aware of propane tank locations, and any gas lines leading to or from the tanks. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☐ | Radiation (ionizing) | Exposure to ionizing radiation can be controlled by one of three methods: time, distance, or shielding. Limit your time near the radioactive source. Keep your distance from the radioactive source. Shield yourself from the radioactive source with appropriate shielding material. If the radioactive source(s) are from INVENTUM equipment, the INVENTUM employee using the equipment needs required training to use the equipment and must be monitored using a dosimeter badge. |
| ☐ | Rock Blasting | Contractor is responsible for following safe blasting protocol. Heed all contractor warnings at time of blasting and stay well clear until safe to return to area, as indicated by the contractor. |
| ☒ | Sample Preservative Chemicals: | Wear safety glasses and nitrile gloves when adding preservative chemicals to sample bottles or vials. Have clean wash water nearby. |
| ☐ | Scaffolding | Stay clear of scaffolding. Be aware of the OSHA safety requirements for using constructing and scaffolding. |
| ☒ | Severe Weather | Work may be suspended if dangerous weather conditions (lightning, tornadoes, high winds, heavy rain, freezing rain, etc.) occur. Be aware of changing weather conditions and be prepared to take shelter as necessary. Potential shelters should be identified prior to beginning work. |
| ☒ | Sharp Objects | Wear appropriate gloves when handling sharp objects or use appropriate equipment to move objects. |
| ☒ | Slippery Ground/Surfaces | Exercise caution, especially on slopes, field trailer floors and stairs, after a precipitation event. Use slip resistant boots or implement surface preparations to eliminate the slippery nature of the surface prior to accessing the area. Spill control measures and general housekeeping should be utilized to help prevent slipping on wet floors, wet pavement, and general work areas. |
| ☒ | Slips, Trips, and Falls: | Maintain clear walkways for work areas. |
| ☒ | Snakes | Be aware of the potential for snakes in the area and wear snake boots, snake chaps, gaiters, or leggings as needed. |
| ☒ | Steam Cleaning Equipment | Stay clear of the steam cleaning nozzles and equipment. |
| ☐ | Steel Erection | All materials, equipment, and tools, which are not in use while aloft, shall be secured against accidental displacement. The controlling contractor shall bar other construction processes below steel erection unless overhead protection for the employees below is provided. Employees engaged in steel erection activities on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level shall be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems. |
| ☐ | Steep Slopes or Banks | Pay attention to footing and walking. Stay a safe distance from unstable or extremely steep slopes. Wear appropriate footwear. Be aware of potential slope or bank failures. Heavy equipment should not be operated on or near unstable slopes or banks. |
| ☒ | Strong Nuisance Odors | Strong odors should be ventilated before entering a work area, or a respirator shall be worn as needed. |
| ☒ | Sunburn | For extended periods of time outdoors on sunny days, sunglasses, long-sleeved shirts and long pants should be worn to help prevent sunburn and eye problems. Wear sunscreen as appropriate for the project. |
| ☒ | Surface Water | Working next to or on, bodies of water shall be done using the buddy system. Staff shall wear USCG-approved personal floatation devices when on or adjacent to bodies of water. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Terrain | Uneven or steep terrain can cause hazardous conditions for walking and transporting equipment around the site. Site personnel should use caution when working on uneven surfaces, and they should avoid working down-slope from heavy equipment, or materials being moved or stored. |
| ☒ | Traffic (client, contractors, public, semi-trucks, forklifts, etc.) | Obey all posted speed limits. Park in designated areas only. Be aware of traffic patterns on site, and during access to the site. Use orange traffic cones and barrier warning tape, as needed, or if within 25 feet of the right-of-way. INVENTUM personnel must wear orange safety vests when working in or near traffic areas. Class 2 traffic vests are required with traffic speeds 25 mph or higher. Class 3 traffic vests are required with traffic speeds 50 mph or higher. |
| ☐ | Trains/Railroad Tracks | Be aware of any train activities on the site, entering or leaving the site, or immediately adjacent to the site. Do not walk between the rails or on the railroad ties. When driving, stop at all railroad crossings, even if they are unmarked, and look in both directions before proceeding across the tracks. |
| ☒ | Transporting Hazardous Materials | INVENTUM personnel who transport hazardous materials shall have the required DOT training prior to transporting materials, and will comply with all applicable DOT regulations and requirements for labeling, packaging, etc. |
| ☐ | Tree Cutting | Stay clear of tree cutting activities. |
| ☒ | Trenching | INVENTUM personnel will enter trenches in accordance with 1926 Sub Part P. Be aware that some trenching conditions may result in a confined space condition. |
| ☒ | Trip Hazards (wires, cords, hoses, debris, corn stubble, uneven surfaces, etc.) | Temporary wires, cords, hoses, etc., should be properly located, marked, and protected to help prevent tripping and disruption to work activities. Trip hazards are particularly a problem early in the morning, late in the day, or under other poor lighting conditions. |
| ☒ | Underground Storage Tanks (USTs)<br>(Septic Tanks) | If any unknown USTs are encountered, drilling or excavations will be terminated in that location until a new scope of work, Risk Assessment and Health & Safety Plan can be developed. |
| ☒ | Uneven Surfaces | Be aware of uneven walking or driving surfaces and exercise caution when moving around the site. |
| ☒ | Utilities – Overhead (electrical, telephone, cable TV, etc.) | A subcontractor, the client, or INVENTUM will locate and identify all overhead utilities. The owner or client will be responsible for identifying all applicable overhead utilities, product lines, pipes, and aboveground tanks. A minimum clearance of 20 feet must be maintained between equipment and overhead utility lines. |
| ☒ | Utilities – Underground (electric, gas, telephone, water, storm sewer, sanitary sewer, cable TV, etc.) | A subcontractor, the client, or INVENTUM will call Digger's Hotline to locate all underground utilities. The owner or client will be responsible for marking all applicable on-site underground utilities, product lines, pipes, and tanks. |
| ☒ | Waterways | Exercise caution near, around, or in waterways. Harnesses should be worn when working in, or within 4 feet of, the waterway, especially when attempting to sample from shore or a boat or barge. All applicable laws and regulations will be followed when navigating a boat or barge to and from a work site. |

# Risk Analysis (RA)

(Required for all Inventum Type 2 or Type 3 field projects.)

**Other Common Physical Hazards**

(modify as needed, but include with all project hazard assessments)

| ☒ | PHYSICAL HAZARD | GENERAL CONTROL MEASURE |
|---|---|---|
| ☒ | Welding Tools | Stay clear of welding operations, and do not look directly at the welding process without appropriate eyewear and shield. |
| ☐ | Traffic Control | **Traffic Control**: Traffic control within the right-of-way will be in accordance with the local Public Right-of-Way Agency. Work may be restricted within specific lanes during peak traffic times. Verify peak traffic times and review planned activities with the local Public Right-of-Way Agency, so that appropriate lane closures can be coordinated. |

**Proposed Date(s) of Inventum Work:** TBD

| ON-SITE PROJECT TEAM MEMBER | ON-SITE PROJECT RESPONSIBILITIES |
|---|---|
| John Black | Inventum Site Health and Safety Representative (Supervisor); Remedial Contractor Oversight |
| Todd Waldrop | Inventum Site Health and Safety Representative (Supervisor); Remedial Contractor Oversight |
| James Edwards | Inventum Site Health and Safety Representative (Supervisor); Remedial Contractor Oversight |
| | |

Any required construction/demolition activities: ☒ No ☐ Yes If Yes, complete Section 1

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## 1. Construction Tasks: work tasks to be performed by Inventum staff or Inventum subcontractors

**Civil**

- ☐ Sewer (utility)
- ☐ Water (utility)
- ☐ Electric (utility)
- ☐ Communications (utility)
- ☐ Siding
- ☐ Roofing
- ☐ Drywall
- ☐ Flooring
- ☐ Ceilings
- ☐ Casework
- ☐ Masonry
- ☐ Escalator
- ☐ Steel (erection)
- ☐ Pre-cast (erection)
- ☐ Concrete (erection)
- ☐ Re-bar
- ☐ Elevator
- ☐ Fireproofing
- ☐ Windows
- ☐ Landscaping
- ☐ Painting
- ☐ Insulation
- ☐ Doors
- ☐ Finish Concrete

**Mechanical**

- ☐ Insulation
- ☐ Millwright
- ☐ Fire Protection
- ☐ Boiler
- ☐ Industrial Ventilation
- ☐ Steel Fabrication/Erection

**Other**

- ☐ Electrical
- ☐ Demolition (attach a detailed "**Demolition Plan**")

- ☐ Others
- ☐ Others
- ☐ Others

**Estimated Direct-Hire Inventum Employees:**

Home Office: ☐ Not Applicable ☐ Specify:

Craft Labor: ☐ Not Applicable ☐ Specify:

| Craft | Quantity |
|---|---|
| Craft | Quantity |

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## 2. Applicable Safety Standards or Regulations:

☒ Federal OSHA ☐ State OSHA ☐ Owner/Client

| Specific Standards: | 29 CFR 1910 (OSHA) | 29 CFR 1926 (Other Regulations) |
|---|---|---|
| ☒ Medical Services and First Aid | 1910.151 | 1926.50 |
| ☒ Hazard Communication (HAZCOM) | 1910.1200 | 1926.59 |
| ☐ Lead Exposure | 1910.1025 | 1926.62 |
| ☒ HAZWOPER | 1910.120 | 1926.65 |
| ☒ Personal Protective Equipment (PPE) | 1910.132-138 | 1926.95-107 |
| ☒ Respiratory Protection | 1910.134 | 1926.103 |
| ☒ Ventilation | 1910.94 | 1926.57 |
| ☒ Noise Exposure | 1910.95 | 1926.52 |
| ☐ Illumination | N/A | 1926.56 |
| ☐ Fire Protection | 1910.157 | 1926.24 and 150-155 |
| ☐ Sanitation | 1910.141 | 1926.51 |
| ☐ Materials Handling (rigging, etc.) | 1910.176 | 1926.250-251 |
| ☐ Welding/Cutting | 1910.251-255 | 1926.350-354 |
| ☐ Lockout/Tagout | 1910.147 | 1926.417 |
| ☐ Electrical (flexible cords, etc.) | 1910.305 | 1926.400-449 |
| ☐ Scaffolding | 1910.28-29 | 1926.450-454 |
| ☐ Fall Protection (elevated work) | 1910.23-29, 1910.66-68 | 1926.104-107; 500-503 |
| ☐ Ladders/Stairways | 1910.25-27 | 1926.1050 and 1060 |
| ☐ Cranes, Derricks, Hoists, Elevators, etc. | 1910.179-181 | 1926.550-555 |
| ☐ Aerial Lifts | 1910.66-68 | 1926.556 |
| ☐ Earthmoving Equipment | N/A | 1926.602 |
| ☐ Powered Industrial Trucks (forklifts) | 1910.178 | 1926.602 |
| ☒ Excavations and Trenching | N/A | 1926.650-652 |
| ☐ Concrete and Masonry | N/A | 1926.700-706 |
| ☐ Steel Erection | N/A | 1926.750-761 |
| ☐ Demolition | N/A | 1926.850-860 |
| ☒ Asbestos | 1910.1001 | 1926.1101 |
| ☐ Confined Space Entry | 1910.146 | 1926.21 |

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

| | | |
|---|---|---|
| ☐ Commercial Diving | 1910.401-441 | 1926.1071-1092 |
| ☒ Compressed Gases | 1910.101-105 | N/A |
| ☐ Ionizing Radiation | 1910.1096 | 1926.53 |
| ☒ Benzene | 1910.1028 | 1926.1128 |
| ☒ Cadmium | 1910.1027 | 1926.1127 |
| ☒ Tools - Hand and Power | N/A | 1926.300-307 |
| ☐ Blasting and Using Explosives | N/A | 1926.900-914 |

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## 3. Training Required

(* required for all "Type 3" sites; but minimum recommended)

Check "A" if training required for everyone, and check "T" if training required for specific task.

| A | T | SUBJECT | REFERENCE | |
|---|---|---|---|---|
| | | | **29 CFR 1910** | **29 CFR 1926 or Other** |
| ☐ | ☒ | HAZWOPER 40 hour* | 1910.120 | 1926.65 |
| ☐ | ☐ | 3-Day HAZWOPER Supervised On-Site* | 1910.120 | 1926.65 |
| ☐ | ☒ | 8-Hour HAZWOPER Refresher* | 1910.120 | 1926.65 |
| ☐ | ☐ | 8-Hour Supervisor HAZWOPER* | 1910.120 | 1926.65 |
| ☐ | ☒ | First Aid, CPR* | 1910.151 | 1926.23,.50 |
| ☐ | ☒ | Respiratory Protection | 1910.134 | 1926.103 |
| ☐ | ☐ | Confined Space ☐ Permit attached | 1910.146 | 1926.21 |
| ☐ | ☐ | Mine Safety (MSHA) | N/A | 30 CFR 48.8 |
| ☐ | ☐ | Lockout/Tagout ☐ Permit attached | 1910.147 | 1926.417 |
| ☒ | ☐ | Bloodborne Pathogens | 1910.1030 | N/A |
| ☒ | ☐ | Noise Exposure | 1910.95 | 1926.52 |
| ☐ | ☒ | Competent Person | N/A | 1926.32,.450,.650 |
| ☐ | ☐ | Construction Health and Safety OSHA 10-Hour | N/A | 1926.21 |
| ☐ | ☐ | Demolition | N/A | 1926.850 |
| ☐ | ☐ | Excavations ☐ Permit attached | N/A | 1926.650-652 |
| ☐ | ☐ | Electrical Work | 1910.332 | 1926.400-.449 |
| ☐ | ☐ | Ladders/Stairways | N/A | 1926.1050-1060 |
| ☐ | ☐ | Scaffolding | 1910.28 | 1926.450-454 |
| ☐ | ☐ | Fall Protection | 1910.23-29; 1910.66-68 | 1926.104,.501 |
| ☐ | ☐ | Commercial Diving | 1910.410 | 1926.1071-1092 |
| ☐ | ☐ | Hot Work ☐ Permit attached | 1910.251-255 | 1926.350 |
| ☐ | ☐ | Lead Awareness | 1910.1025 | 1926.62 |
| ☐ | ☐ | Asbestos Awareness | 1910.1001 | 1926.1101 |
| ☐ | ☐ | Cadmium | 1910.1027 | 1926.1127 |
| ☐ | ☐ | Benzene | 1910.1028 | 1926.1128 |
| ☐ | ☐ | Ionizing Radiation | 1910.1096 | 1926.53; 10 CFR 19.12 |
| ☐ | ☐ | Troxler or NITON Gauge User | 1910.1096 | 10 CFR 19.12 |
| ☐ | ☐ | Radiation Safety Program | 1910.1096 | 10 CFR 20.1101 |
| ☐ | ☐ | Hazard Communication (HAZCOM) | 1910.1200 | 1926.59 |
| ☐ | ☒ | DOT Hazardous Materials Shipping | 1910.1201 | 49 CFR 172.704 |

Client-specific training: ☒ Not Applicable ☐ Specify

Site-specific orientation: ☒ Not Applicable ☐ Specify

Competent person: ☒ Not Applicable ☐ Specify

Direct-hire employee training/certification: ☒ Not Applicable ☐ Specify

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## 4. Medical Surveillance

**Surveillance Required:** * required for all "Type 3" sites; baseline is minimum recommended
** Specify frequency below

| | 29 CFR 1910 | 29 CFR 1926 or Other |
|---|---|---|
| ☐ HAZWOPER Physical - Baseline* | 1910.120 | 1926.65 |
| ☐ HAZWOPER Physical – Annual | 1910.120 | 1926.65 |
| ☐ HAZWOPER Physical - Biennial* | 1910.120 | 1926.65 |
| ☐ OSHA Respiratory Protection Questionnaire | 1910.134 | 1926.103 |
| ☐ Respiratory Certification Exam | 1910.134 | 1926.103 |
| ☐ Arsenic (urine) ** | 1910.1018 | N/A |
| ☐ Asbestos ** | 1910.1001 | 1926.1101 |
| ☐ Cadmium (blood) ** | 1910.1027 | 1926.1127 |
| ☐ Lead/ZPP (blood) ** | 1910.1025 | 1926.62 |
| ☐ Mercury (blood) ** | N/A | N/A |
| ☐ PCB ** | N/A | N/A |
| ☐ Vinyl Chloride ** | 1910.1017 | 1926.117 |
| ☐ Hepatitis B Vaccine (series) ** | 1910.1030 | N/A |
| ☐ Tetanus/Diphtheria | N/A | Stay Current |
| ☐ Stress Test | N/A | Only as requested |
| ☐ Visual Acuity Test | N/A | Only as requested |
| ☐ Hearing Test (Audiometry) | N/A | Only as requested |
| ☐ Pulmonary Function | N/A | Only as requested |

Client-specific drug testing: ☒ Not Applicable ☐ Specify

Client-specific medical monitoring[1]: ☒ Not Applicable ☐ Specify

Site-specific medical monitoring: ☒ Not Applicable ☐ Specify

**Frequency of medical monitoring: ☒ Not Applicable ☐ Specify

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## 5. Personal Protective Equipment (PPE)

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work tasks:

| Specific Inventum Job Task or Function | Minimum Level of Protection |
|---|---|
| **Task 1 – Site management and Oversight** | ☒ D ☐ C ☐ B ☐ A |
| Level D: safety glasses (ANSI), safety shoes (ANSI), ear plugs (ANSI); safety vest (ANSI) | |
| **Task 2 – Surficial Soil Sampling** | ☒ D ☐ C ☐ B ☐ A |
| Level D: safety glasses (ANSI), safety shoes (ANSI), ear plugs (ANSI); safety vest (ANSI), nitrile gloves, | |
| **Task 3 – Subsurface Soil Sampling** | ☒ D ☐ C ☐ B ☐ A |
| Level D: Hard hat, safety glasses (ANSI), safety shoes (ANSI), nitrile gloves | |
| **Task 4 – Permit Compliance Water and Wastewater Sampling** | ☒ D ☐ C ☐ B ☐ A |
| Level D: Hard hat, safety glasses (ANSI), safety shoes (ANSI), nitrile gloves | |
| **Task 5 – Monitoring Well Abandonment** | ☒ D ☐ C ☐ B ☐ A |
| Level D: safety glasses (ANSI), safety shoes (ANSI), ear plugs (ANSI); safety vest (ANSI) | |
| **Task 6 – Monitoring Well Installation** | ☒ D ☐ C ☐ B ☐ A |
| Level D: safety glasses (ANSI), safety shoes (ANSI), ear plugs (ANSI); safety vest (ANSI) | |
| **Task 7 – Groundwater Monitoring and Sampling** | ☒ D ☐ C ☐ B ☐ A |
| Level D: Hard hat, safety glasses (ANSI), safety shoes (ANSI), nitrile gloves | |
| **Task 8 – Sampling of Residuals** | ☒ D ☐ C ☐ B ☐ A |
| Level D: Hard hat, safety glasses (ANSI), safety shoes (ANSI), nitrile gloves | |

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

Criteria for changing protection levels are as follows:

| EVACUATION[2] or PROTECTION LEVEL CHANGE[3] CRITERIA | APPROVALS REQUIRED [1]<br>OSC |
|---|---|
| Site Evacuation Plan: ☒ Not Applicable ☐ Specify or Attach Plan: | |
| Change to Level D when: ☐ Not Applicable ☒ | ☒N/A All site work in Level D |
| Change to Level C when: ☒ Not Applicable ☐ dust levels exceed 2.5 mg/m$^3$ in the breathing zone continuously for 5 minutes. | ☒<br>No work will be conducted in Level C. Site work will stop, controls reevaluated, and HASP updated as necessary |
| Change to Level B when: ☒ Not Applicable ☐ Specify | ☒ Inventum will not conduct any work in Level B. |
| Change to Level A when: ☒ Not Applicable ☐ Specify | ☒ Inventum will not conduct any work in Level A.<br>☒ |

[1] OSC: Office Safety Coordinator

[2] General Recommendations: Evacuate the area when LEL readings are >10% LEL in the atmosphere, or when PID readings are greater than the PEL in the breathing zone.

[3] General Recommendation: To Level C when PID readings are greater than the PEL in the breathing zone. To Level B or A only after detailed evaluation and planning.

**Note:** Changes to the level of protection shall be made only after the required approvals are obtained. All changes shall be recorded in the field log and reported to the Project Manager as soon as possible. Inventum's goal is to avoid using respiratory protection unless it is absolutely necessary or required. Administrative controls or engineering controls should always be considered as a means to reduce potential exposures before PPE is required or considered.

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## 6. Air Monitoring [(1)]

The following monitoring instruments shall be used on site to measure airborne contaminant concentrations in either the breathing zone, or as part of the overall site **Air Monitoring Plan** (attach detailed plan):

| MONITORING EQUIPMENT | LOCATION OF MONITORING | FREQUENCY OF MONITORING | ACTION LEVELS |
|---|---|---|---|
| ☐ Combustible Gas Indicator | ☐ N/A<br>☐ Monitoring Plan Attached<br>☐ Confined Space<br>☐ Manhole | ☐ Continuously when potential combustible gases or lack of oxygen are suspected.<br>☐ Specify | 5-10% LEL: continue with caution<br>> 10 % LEL: evacuate the area<br>☐ Specify |
| ☐ O2 Monitor<br>☐ CO Monitor<br>☐ $H_2S$ Monitor | ☐ N/A<br>☐ Confined Space<br>☐ Manhole – monitor oxygen, carbon monoxide, hydrogen sulfide , and lower explosive limit | ☐ Continuously when excess oxygen (>22.5%) or lack of oxygen (<19.5%) are suspected.<br>☐ Test atmosphere prior to entry and continuous during confined space entry. | < 19.5% Oxygen: evacuate the area; supplied air may be needed.<br>> 22.5% Oxygen: evacuate the area; potential fire hazard.<br>☐ Specify |
| ☐ Colorimetric Tubes<br><br>Type:<br><br>Type:<br>Type: | ☐ N/A<br>☐ Specify<br><br>☐ Sample Container<br><br>☐ Confined Space<br>☐ Specify | ☐ Periodically during sampling for analytical purposes only.<br>☐ Whenever noticeable odor is present.<br>☐ Specify | ☐ Specify |
| ☒ PID<br><br>Lamp Needed: ☐ 9.8 eV ☒ 10.6 eV ☐ 11.7 eV<br><br>Calibration Gas: Isobutylene<br><br>Correction Factor: | ☒ Personal Monitoring<br>☒ Sample Container<br><br>☐ Confined Space<br><br>☐ Specify | ☒ Periodically during sampling for analytical purposes only.<br>☒ Continuously within the employee breathing zone.<br><br>☐ Specify<br><br>☐ Specify | ☒ None.<br><br>☒ >5 ppm above background in breathing zone for 5+ min. Stop work and reevaluate potential sources and controls. |
| ☐ FID | ☐ N/A<br>☐ Specify | ☐ Specify | ☐ Specify |
| ☒ Personal Dust Monitor | ☐ N/A<br>☒ Personal Monitoring in Breathing Zone (Task 2 - 6 only) | ☒ Continuously within the employee breathing zone | ☒ >2.5 mg/m3 at work perimeter for 15 min sustained. Stop work and apply dust controls |

| | | | |
|---|---|---|---|
| ☒Other: Perimeter Monitoring | ☒ Perimeter Air Monitoring in accordance with the CAMP | ☐ Specify | ☐ Specify |
| ☐Laboratory Supported<br><br>☐Personal<br>☐Area<br>☒Perimeter | ☐ N/A<br>☐ Specify<br>Employee breathing zone | ☐ Specify<br><br>continuous | ☒ When visible dust is present apply dust control measures (water spray) until abated. |

(1) Whenever air monitoring is required to be performed, a detailed **Air-Monitoring Plan** should be developed and attached to the HASP. The plan should include **Monitoring Locations, Frequency of Readings**, and any **Action Levels** being used to control the work site.

## Air Monitoring Plan

Field monitoring of dust production is anticipated only during subsurface soil sampling (Task 2) and installation of monitoring wells (Task 7). A visual assessment of dust levels will be used continuously during the work along with personal employee monitoring and perimeter air monitoring in accordance with an approved CAMP.

Dust production during monitoring well abandoned, monitoring well installation, and surficial soil sampling is not anticipated due to the typical moisture content of the soil.

This level of nuisance dust is visually observable. If dust is observable continuously in the breathing zone for 5 minutes, dust control methods will be used (*e.g.*, water spray will be applied) until dust is abated. Work will be temporarily discontinued until dust is reduced to acceptable levels within the breathing zone. Should particulate levels above the action level be a continual problem, relevant field personnel will reassess the situation with the project manager.

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## 7. Site Controls and Work Zones (describe in detail)

**Facility Alarms or Signals:** ☒ Not Applicable ☐ Specify

**Work Permits Required:** ☒ Not Applicable ☐ Specify

**Work Traffic Issues:** ☒ Not Applicable ☐ Specify

**Parking Issues:** ☒ Not Applicable ☐ Specify

**Railway Traffic Issues:** ☒ Not Applicable ☐

**Support Zone(s):**

☒ Field vehicle ☒ Job Trailer On Site ☐ Other:

**Contamination Reduction Zone(s):**

☒ Field vehicle ☐ Facility restroom/utility room ☐ Other:

**Exclusion Zone(s):**

☒ Area immediately surrounding work area ☐ Other:

**Site Entry Procedures:**

☒ **Notify Site Safety Contact Representative.**

☒ **Read HASP Plan and sign Acknowledgment Statement.**

☒ **Check in with the facility contact person.** ☒ **Check in with owners full time site representatives.**

☒ **Check in with facility security guard.** ☒ **All visitors must check in and sign visitor logbook in guard house.**

☒ **Wear proper personal protective equipment.**

☐ Attend facility orientation. ☐

☒ **Conduct daily safety meeting (document).**

☐ Other: Confined space – do not enter the confined space if LEL >10%, oxygen <21% or >23.5%, carbon monoxide >35 ppm, or hydrogen sulfide >7 ppm. Exit the confined space if the atmospheric conditions become hazards as noted.

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## Decontamination Procedures:

**Personnel:** (specify)

Work will be performed in Level D or Modified Level D, and minimal contamination is expected. Follow standard decontamination procedures, and good personal hygiene. Disposable PPE should be removed, contained, and disposed of in an appropriate manner. Prior arrangements should be made if disposal is planned for at the project site.

Site workers should plan and stage for wash water and soap at the site, prior to beginning the work. Site workers should wash hands and any exposed skin extremely well with soap and water, prior to leaving the contamination reduction zone, eating, drinking, driving, or leaving the site. Any soiled or contaminated clothing should be removed and handled appropriately, by either washing as soon as possible, or if necessary, disposing. Soiled or contaminated clothing should be carefully bagged prior to disposal or washing, to reduce potential exposure.

**Equipment:** (specify)

Site workers should plan and stage for the appropriate decontamination method at the site prior to beginning the work. Any contaminated single-use disposable equipment or PPE should be appropriately containerized and disposed of as soon as possible in an appropriate manner. Prior arrangements should be made if disposal is planned for at the project site. Contaminated equipment or PPE that will be re-used should be handled and cleaned while wearing the appropriate PPE. Typically, equipment is decontaminated using Alconox soap and deionized water.

## Disposal of Investigation-derived Material:

☒ Leave on site for disposal. Location TBD ☐ Other:

## Work Limitations (time of day, buddy system, etc.):

☐ Buddy system required for some tasks.

☒ Work will be performed during daylight hours only.

☐ Work will be performed using artificial light.

Describe or attach a lighting plan: A lighting plan is attached.

☒ No eating, drinking, or smoking in contamination reduction zone(s) or exclusion zone(s).

☒ When temperatures are either above 80°F or below 20°F, work schedules may be modified.

☒ Other site-specific limitations: Do not enter battery building

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## Radiation Safety:

- ☒ Radiation information is not applicable to this project.
- ☐ Notify RSO.
- ☐ Wear dosimeter badge when handling gauge.
- ☐ Post applicable radiation signs and documents.
- ☐ Post emergency numbers.
- ☐ Provide at least two lock systems for overnight storage.
- ☐ Maintain storage at least 15 feet from full-time workstations.
- ☐ Block, brace, and securely lock the gauge during "all" transportation.
- ☐ Limit "public" exposure to gauge while in use.
- ☐ Provide sketch of gauge storage to RSO.

# Site-Specific Health and Safety Plan

(Required for all Inventum Type 2 or Type 3 field projects.)

## Acknowledgment Statement:

As an employee of Inventum, I have reviewed the Hazard Assessment (HA)/Health & Safety Plan (HASP). I hereby acknowledge that I have received the **required level of training and medical surveillance as necessary**, that I am knowledgeable about the contents of this site-specific RA/HSP, and that I will use personal protective equipment (PPE) and follow procedures specified in the HASP.

## Signatures of Inventum Site Personnel:

| | | |
|---|---|---|
| | Date: | |
| | Date: | |
| | Date: | |
| | Date: | |
| | Date: | |
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| | Date: | |
| | Date: | |

# INVENTUM SAFETY OBSERVATION FORM
# November 2022

| | |
|---|---|
| **Location/Project Name:** _____ | **Date:** _____ |
| **Observer Name:** _____ | |
| **Observee Name:** _____ | **Time:** _____ |
| **Task Observed** | |
| | |
| **Description of Task Observed and Background Information** | |
| | |
| **Positive Comments** | |
| | |

# INVENTUM SAFETY OBSERVATION FORM
# November 2022

## Conclusions / Why the Questionable Items Occurred?

**Feedback Session Conducted By:** _____ **Date:** _____

**Name of Observee's Supervisor:** _____ **Time:** _____

## At-Risk Observations/Root Cause Analysis

**Personal Factor:**
(1) Lack of skill or knowledge
(2) Correct way takes more time/requires more effort
(3) Shortcutting standard procedures is rewarded or appreciated
(4) In past, did not follow procedures or acceptable practices and no incident occurred

**Job Factor:**
(5) Lack of or inadequate operational procedures or work standards
(6) Inadequate communication of expectations or work standards
(7) Inadequate tools or equipment

| At-Risk Observation # | Root Cause Analysis # | Solution(s) To Prevent Potential Incident from Occurring | Person Responsible | Agreed Due Date | Date Completed |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

## Results of Verification (were solutions done?) and Validation (were solutions effective?)

**Reviewed by (PM/Supervisor):** _____ **Date:** _____

**Approved by (Practice Safety Leader):** _____ **Date:** _____

# INVENTUM SAFETY OBSERVATION FORM
# November 2022

| PERSONAL PROTECTIVE EQUIPMENT | Safe | At-Risk | Comments |
|---|---|---|---|
| 1. Hearing Protection (e.g., Ear Plugs) | | | |
| 2. Head Protection (e.g., Hard Hat) | | | |
| 3. ANSI Rated Eye Protection (e.g., Safety Glasses) | | | |
| 4. Hand Protection (e.g., Kevlar Gloves) | | | |
| 5. Foot Protection (e.g., Safety Shoes) | | | |
| 6. Respiratory Protection | | | |
| 7. Fall Protection Inspected (e.g., Harness) | | | |
| 8. ANSI Rated Reflective Vest/High Visibility Clothing | | | |
| 9. Other ( Specify) | | | |
| **BODY USE AND POSITIONING** | **Safe** | **At-Risk** | **Comments** |
| 10. Correct Body Use and Positioning When Lifting/Pushing/Pulling | | | |
| 11. Pinch Points/Moving Equipment - Hands/Body Clear | | | |
| 12. Mounts/Dismounts Using 3-Points of Contact | | | |
| 13. Other (Specify) | | | |

# INVENTUM SAFETY OBSERVATION FORM
# November 2022

| WORK ENVIRONMENT | Safe | At-Risk | Comments |
|---|---|---|---|
| 14. Work/Walk Surface Free of Obstructions (e.g., Tripping Hazards) | | | |
| 15. Housekeeping/Storage | | | |
| 16. Defined and Secured (e.g., warning devices, barricades, cones, flags) | | | |
| 17. Suspended Load, Swing Radius & Lift Area is Barricaded | | | |
| 18. Safety Shutdown Devices | | | |
| 19. Proper Storage & Labeling /Disposal of Sample & Waste Materials | | | |
| 20. Cylinders Stored Upright, Secured, & Caps in Place | | | |
| 21. Manhole/vault Inspected for Hazards | | | |
| 22. Other (Specify) | | | |

# INVENTUM SAFETY OBSERVATION FORM
# November 2022

| OPERATING PROCEDURES | Safe | At-Risk | Comments |
|---|---|---|---|
| 23. Job Planning (HASP reviewed, JSAs, etc.) | | | |
| 24. Fire Extinguishers Accessible and Inspections Current | | | |
| 25. Work Permit/Authorization to Work (Hot, Cold, LOTO, Confined Space) | | | |
| 26. JSA Reviewed & Followed | | | |
| 27. Hazard Assessment - Hazard Hunt | | | |
| 28. Interfaces with Other Functions (awareness with other personnel on site) | | | |
| 29. Operators Looking Behind Prior to Backing Up | | | |
| 30. Operators Wearing Seat Belts While Operating Equipment | | | |
| 31. Subsurface Structures Identified | | | |
| 32. Proper Trench Protective Equipment in Place | | | |
| 33. Adequate Egress Is Available for Excavation & Trench (within 25 ft. if depth is <4 ft.) | | | |
| 34. All Materials Set Back at Least 2 Feet From Edge of Trench/Excavation | | | |
| 35. Other (Specify) | | | |

# INVENTUM SAFETY OBSERVATION FORM
# November 2022

| TOOLS/EQUIPMENT | Safe | At-Risk | Comments |
|---|---|---|---|
| 36. Hand Tools (Proper Equipment Selection, Condition, and Use) | | | |
| 37. Power Tools (Proper Equipment Selection, Condition, and Use) | | | |
| 38. Equipment, Including Heavy (Proper Equipment Selection, Condition, and Use) | | | |
| 39. Hoses Inspected | | | |
| 40. Required Monitoring Equipment Calibrated & Used | | | |
| 41. Ladders Set up Correctly & Inspected | | | |
| 42. Right Tools for the Job are Available and in Good Condition - No Fixed Open Blade Knives (FOBKs) | | | |
| 43. Other (Specify) | | | |
| **Total #** | 0 | 0 | |

## Daily Hazard Review Topic and Sign-In:

| Daily Review Topic | Date |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

## Acknowledgment Statement:

As an affected employee of Inventum Engineering, I hereby acknowledge that I have reviewed the contents of this site-specific HSP and the **daily safety meeting topic**, and that I will use the applicable personal protective equipment (PPE) and follow the procedures specified in the HASP.

### Signatures of all onsite Inventum Personnel, including Direct-Hires (Required):

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

_____ Date: _____

**Attachment A – Site Maps with Soil, Storm Sewer, and Groundwater Exceedances**




| Analytes | Unrestricted Use | Part 375 SCOs Commercial | Part 375 SCOs Industrial | Units | B-9-11112020-0.5-1.0 | | B-9-11112020-2.0-2.5 | | B-9-11112020-9.5-10.0 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date: | 11/11/2020 | | 11/11/2020 | | 11/11/2020 |
| | | | | Sample Interval (ft): | 0.5-1 | | 2.0-2.5 | | 9.5-10 |
| | | | | Matrix | Soil | | Soil | | Soil |
| Benzene | 60 | 44,000 | 89,000 | Ug/kg | 17,000 | | 66,000 | | 86,000 |
| Ethylbenzene | 1,000 | 390,000 | 780,000 | Ug/kg | 17,000 | | 1,500 | J | 1,300 | J |
| Toulene | 700 | 500,000 | 1,000,000 | Ug/kg | 14,000 | | 83,000 | | 54,000 |
| Total Xylenes | 260 | 500,000 | 1,000,000 | Ug/kg | 120,000 | | 9,200 | | 8,100 |

| Analytes | Unrestricted Use | Part 375 SCOs Commercial | Part 375 SCOs Industrial | Units | B-14-11102020-0.3-0.8 | | B-14-11102020-4.5-5.0 | |
|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date: | 11/11/2020 | | 11/11/2020 | |
| | | | | Sample Interval (ft): | 0.3-0.8 | | 4.5-5.0 | |
| | | | | Matrix | Soil | | Soil | |
| Benzene | 60 | 44,000 | 89,000 | Ug/kg | 8,700 | J | <49 | U |
| Ethylbenzene | 1,000 | 390,000 | 780,000 | Ug/kg | 7,100 | J | <49 | U |
| Toulene | 700 | 500,000 | 1,000,000 | Ug/kg | 19,000 | | <49 | U |
| Total Xylenes | 260 | 500,000 | 1,000,000 | Ug/kg | 37,000 | | <98 | U |
| Acenaphthene | 20,000 | 500,000 | 1,000,000 | Ug/kg | 790,000 | | 710 | J |
| Acenaphthylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 820,000 | | 590 | J |
| Anthracene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 1,500,000 | | 1,100 | |
| Benzo(A)Anthracene | 1,000 | 5,600 | 11,000 | Ug/kg | 2,000,000 | | 1,600 | |
| Benzo(A)Pyrene | 1,000 | 1,000 | 1,100 | Ug/kg | 2,000,000 | | 1,700 | |
| Benzo(B)Fluoranthene | 1,000 | 5,600 | 11,000 | Ug/kg | 1,700,000 | | 1,300 | |
| Benzo(G,H,I)perylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 930,000 | | 820 | J |
| Benzo(K)Fluoranthene | 800 | 56,000 | 110,000 | Ug/kg | 780,000 | | 600 | J |
| Chrysene | 1,000 | 56,000 | 110,000 | Ug/kg | 2,100,000 | | 1,800 | |
| Dibenzo(a,h)Anthracene | 330 | 560 | 1,100 | Ug/kg | 300,000 | | 230 | J |
| Fluoranthene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 4,300,000 | | 3,400 | |
| Fluorene | 30,000 | 500,000 | 1,000,000 | Ug/kg | 2,700,000 | | 2,300 | |
| Indeno(1,2,3-Cd)Pyrene | 500 | 5,600 | 11,000 | Ug/kg | 850,000 | | 610 | J |
| Naphthalene | 12,000 | 500,000 | 1,000,000 | Ug/kg | 8,800,000 | | 4,900 | |
| Phenanthrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 9,100,000 | | 8,500 | |
| Pyrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 4,200,000 | | 4,200 | |

| Analytes | Unrestricted Use | Part 375 SCOs Commercial | Part 375 SCOs Industrial | Units | B-29-11102020-1.8-2.3 |
|---|---|---|---|---|---|
| | | | | Sample Date: | 11/10/2020 |
| | | | | Sample Interval (ft): | 1.8-2.3 |
| | | | | Matrix | Soil |
| Chromium | 30 | 1,500 | 6,800 | mg/kg | 37.6 |

| Analytes | Unrestricted Use | Part 375 SCOs Commercial | Part 375 SCOs Industrial | Units | B-16-11102020-0.9-1.4 |
|---|---|---|---|---|---|
| | | | | Sample Date: | 11/11/2020 |
| | | | | Sample Interval (ft): | 0.9-1.4 |
| | | | | Matrix | Soil |
| Benzene | 60 | 44,000 | 89,000 | Ug/kg | 17000 |
| Ethylbenzene | 1,000 | 390,000 | 780,000 | Ug/kg | 15,000 |
| Toulene | 700 | 500,000 | 1,000,000 | Ug/kg | 36,000 |
| Total Xylenes | 260 | 500,000 | 1,000,000 | Ug/kg | 140,000 |
| Acenaphthene | 20,000 | 500,000 | 1,000,000 | Ug/kg | 670,000 |
| Acenaphthylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 2,100,000 |
| Anthracene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 14,000,000 |
| Benzo(A)Anthracene | 1,000 | 5,600 | 11,000 | Ug/kg | 2,100,000 |
| Benzo(A)Pyrene | 1,000 | 1,000 | 1,100 | Ug/kg | 1,800,000 |
| Benzo(B)Fluoranthene | 1,000 | 5,600 | 11,000 | Ug/kg | 1,800,000 |
| Benzo(G,H,I)perylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 890,000 |
| Benzo(K)Fluoranthene | 800 | 56,000 | 110,000 | Ug/kg | 970,000 |
| Chrysene | 1,000 | 56,000 | 110,000 | Ug/kg | 2,000,000 |
| Dibenzo(a,h)Anthracene | 330 | 560 | 1,100 | Ug/kg | 310,000 |
| Fluoranthene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 6,100,000 |
| Fluorene | 30,000 | 500,000 | 1,000,000 | Ug/kg | 4,400,000 |
| Indeno(1,2,3-Cd)Pyrene | 500 | 5,600 | 11,000 | Ug/kg | 900,000 |
| Naphthalene | 12,000 | 500,000 | 1,000,000 | Ug/kg | 10,000,000 |
| Phenanthrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 11,000,000 |
| Pyrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 4,100,000 |

| Analytes | Unrestricted Use | Part 375 SCOs Commercial | Part 375 SCOs Industrial | Units | B-30-11102020-0.5-1.0 |
|---|---|---|---|---|---|
| | | | | Sample Date: | 11/10/2020 |
| | | | | Sample Interval (Ft): | 0.5-1 |
| | | | | Matrix | Soil |
| Benzene | 60 | 44,000 | 89,000 | Ug/kg | 29,000 |
| Toulene | 700 | 500,000 | 1,000,000 | Ug/kg | 19,000 |
| Total Xylenes | 260 | 500,000 | 1,000,000 | Ug/kg | 28,000 |
| Acenaphthene | 20,000 | 500,000 | 1,000,000 | Ug/kg | 410,000 |
| Acenaphthylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 3,330,000 |
| Anthracene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 4,200,000 |
| Benzo(A)Anthracene | 1,000 | 5,600 | 11,000 | Ug/kg | 3,100,000 |
| Benzo(A)Pyrene | 1,000 | 1,000 | 1,100 | Ug/kg | 2,800,000 |
| Benzo(B)Fluoranthene | 1,000 | 5,600 | 11,000 | Ug/kg | 3,200,000 |
| Benzo(G,H,I)perylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 1,500,000 |
| Benzo(K)Fluoranthene | 800 | 56,000 | 110,000 | Ug/kg | 1,200,000 |
| Chrysene | 1,000 | 56,000 | 110,000 | Ug/kg | 3,000,000 |
| Dibenzo(a,h)Anthracene | 330 | 560 | 1,100 | Ug/kg | 460,000 |
| Fluoranthene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 9,400,000 |
| Fluorene | 30,000 | 500,000 | 1,000,000 | Ug/kg | 3,900,000 |
| Indeno(1,2,3-Cd)Pyrene | 500 | 5,600 | 11,000 | Ug/kg | 1,400,000 |
| Naphthalene | 12,000 | 500,000 | 1,000,000 | Ug/kg | 11,000,000 |
| Phenanthrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 13,000,000 |
| Pyrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 5,900,000 |

| Analytes | Unrestricted Use | Part 375 SCOs Commercial | Part 375 SCOs Industrial | Units | B-18-11092020-0.9-1.4 |
|---|---|---|---|---|---|
| | | | | Sample Date: | 11/9/2020 |
| | | | | Sample Interval (ft): | 0.9-1.4 |
| | | | | Matrix | Soil |
| Benzene | 60 | 44,000 | 89,000 | Ug/kg | 27,000 |
| Toulene | 700 | 500,000 | 1,000,000 | Ug/kg | 19,000 |
| Total Xylenes | 260 | 500,000 | 1,000,000 | Ug/kg | 23,000 |
| Acenaphthene | 20,000 | 500,000 | 1,000,000 | Ug/kg | 450,000 |
| Acenaphthylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 3,200,000 |
| Anthracene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 3,100,000 |
| Benzo(A)Anthracene | 1,000 | 5,600 | 11,000 | Ug/kg | 3,000,000 |
| Benzo(A)Pyrene | 1,000 | 1,000 | 1,100 | Ug/kg | 2,800,000 |
| Benzo(B)Fluoranthene | 1,000 | 5,600 | 11,000 | Ug/kg | 2,900,000 |
| Benzo(G,H,I)perylene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 1,600,000 |
| Benzo(K)Fluoranthene | 800 | 56,000 | 110,000 | Ug/kg | 1,300,000 |
| Chrysene | 1,000 | 56,000 | 110,000 | Ug/kg | 2,300,000 |
| Dibenzo(a,h)Anthracene | 330 | 560 | 1,100 | Ug/kg | 380,000 |
| Fluoranthene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 8,700,000 |
| Fluorene | 30,000 | 500,000 | 1,000,000 | Ug/kg | 3,900,000 |
| Indeno(1,2,3-Cd)Pyrene | 500 | 5,600 | 11,000 | Ug/kg | 1,500,000 |
| Naphthalene | 12,000 | 500,000 | 1,000,000 | Ug/kg | 9,100,000 |
| Phenanthrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 10,000,000 |
| Pyrene | 100,000 | 500,000 | 1,000,000 | Ug/kg | 5,600,000 |

## LEGEND

9.5-10 Deepest Exceedance (feet below ground surface)

Soil Borings

- No Exceedance of Industrial Part 375 SCOs at Sampled Interval
- Exceeds Unrestricted Use Part 375 Soil Cleanup Objectives (SCOs)
- Exceeds Commercial Part 375 SCOs
- Exceeds Industrial Part 375 SCOs
- Property Line & Sub-Area Boundaries

D

1" = 50'
50' 25' 0' 50'

References:
1. Parsons, 2021, Tonawanda Plastics Site NYSDEC ID 915003 Draft Site Investigation Summary Report
2. Niagara Boundary and Mapping Services, 2022, Site Aerial of 3821 River Road Tonawanda

RB
DRAWING BY
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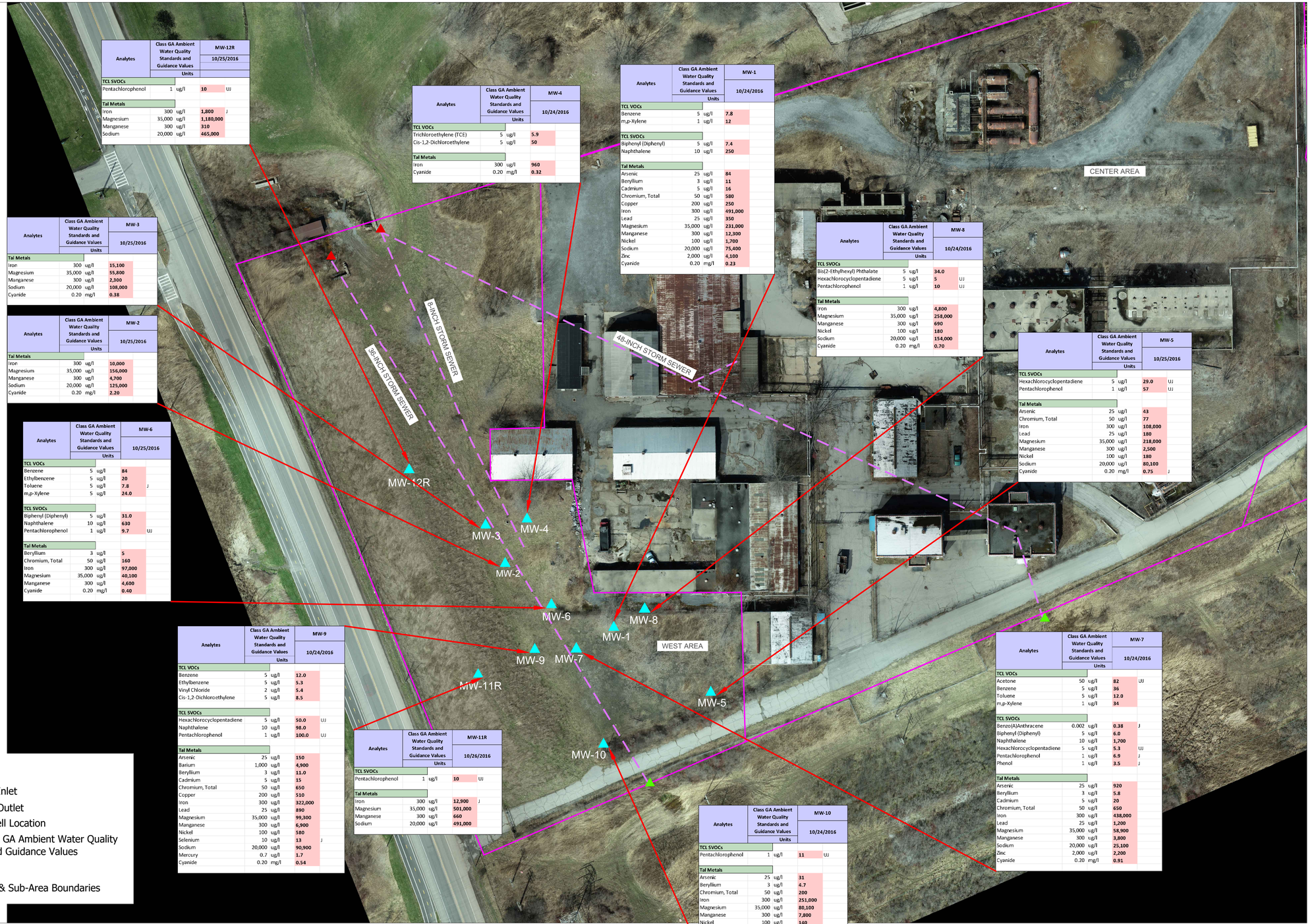
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# 2020 SOIL DATA
## 3821 RIVER ROAD
## TONAWANDA NEW YORK, 14150

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170
(703) 722-6049
www.InventumEng.com

FIGURE 7

DRAWING NUMBER




| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-12R 10/25/2016 | |
|---|---|---|---|---|
| **TCL SVOCs** | | | | |
| Pentachlorophenol | 1 | ug/l | **10** | UJ |
| **Tal Metals** | | | | |
| Iron | 300 | ug/l | **1,800** | J |
| Magnesium | 35,000 | ug/l | **1,180,000** | |
| Manganese | 300 | ug/l | **310** | |
| Sodium | 20,000 | ug/l | **465,000** | |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-4 10/24/2016 |
|---|---|---|---|
| **TCL VOCs** | | | |
| Trichloroethylene (TCE) | 5 | ug/l | **5.9** |
| Cis-1,2-Dichloroethylene | 5 | ug/l | **50** |
| **Tal Metals** | | | |
| Iron | 300 | ug/l | **960** |
| Cyanide | 0.20 | mg/l | **0.32** |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-1 10/24/2016 |
|---|---|---|---|
| **TCL VOCs** | | | |
| Benzene | 5 | ug/l | **7.8** |
| m,p-Xylene | 1 | ug/l | **12** |
| **TCL SVOCs** | | | |
| Biphenyl (Diphenyl) | 5 | ug/l | **7.4** |
| Naphthalene | 10 | ug/l | **250** |
| **Tal Metals** | | | |
| Arsenic | 25 | ug/l | **84** |
| Beryllium | 3 | ug/l | **11** |
| Cadmium | 5 | ug/l | **16** |
| Chromium, Total | 50 | ug/l | **580** |
| Copper | 200 | ug/l | **250** |
| Iron | 300 | ug/l | **491,000** |
| Lead | 25 | ug/l | **350** |
| Magnesium | 35,000 | ug/l | **231,000** |
| Manganese | 300 | ug/l | **12,300** |
| Nickel | 100 | ug/l | **1,700** |
| Sodium | 20,000 | ug/l | **75,400** |
| Zinc | 2,000 | ug/l | **4,100** |
| Cyanide | 0.20 | mg/l | **0.23** |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-3 10/25/2016 |
|---|---|---|---|
| **Tal Metals** | | | |
| Iron | 300 | ug/l | **15,100** |
| Magnesium | 35,000 | ug/l | **55,800** |
| Manganese | 300 | ug/l | **2,300** |
| Sodium | 20,000 | ug/l | **108,000** |
| Cyanide | 0.20 | mg/l | **0.38** |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-2 10/25/2016 |
|---|---|---|---|
| **Tal Metals** | | | |
| Iron | 300 | ug/l | **10,000** |
| Magnesium | 35,000 | ug/l | **156,000** |
| Manganese | 300 | ug/l | **4,700** |
| Sodium | 20,000 | ug/l | **125,000** |
| Cyanide | 0.20 | mg/l | **2.20** |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-6 10/25/2016 | |
|---|---|---|---|---|
| **TCL VOCs** | | | | |
| Benzene | 5 | ug/l | **84** | |
| Ethylbenzene | 5 | ug/l | **20** | |
| Toluene | 5 | ug/l | **7.8** | J |
| m,p-Xylene | 5 | ug/l | **24.0** | |
| **TCL SVOCs** | | | | |
| Biphenyl (Diphenyl) | 5 | ug/l | **31.0** | |
| Naphthalene | 10 | ug/l | **630** | |
| Pentachlorophenol | 1 | ug/l | **9.7** | UJ |
| **Tal Metals** | | | | |
| Beryllium | 3 | ug/l | **5** | |
| Chromium, Total | 50 | ug/l | **160** | |
| Iron | 300 | ug/l | **97,000** | |
| Magnesium | 35,000 | ug/l | **40,100** | |
| Manganese | 300 | ug/l | **4,600** | |
| Cyanide | 0.20 | mg/l | **0.40** | |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-8 10/24/2016 | |
|---|---|---|---|---|
| **TCL SVOCs** | | | | |
| Bis(2-Ethylhexyl) Phthalate | 5 | ug/l | **34.0** | |
| Hexachlorocyclopentadiene | 5 | ug/l | **5** | UJ |
| Pentachlorophenol | 1 | ug/l | **10** | UJ |
| **Tal Metals** | | | | |
| Iron | 300 | ug/l | **4,800** | |
| Magnesium | 35,000 | ug/l | **258,000** | |
| Manganese | 300 | ug/l | **690** | |
| Nickel | 100 | ug/l | **180** | |
| Sodium | 20,000 | ug/l | **154,000** | |
| Cyanide | 0.20 | mg/l | **0.70** | |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-5 10/25/2016 | |
|---|---|---|---|---|
| **TCL SVOCs** | | | | |
| Hexachlorocyclopentadiene | 5 | ug/l | **29.0** | UJ |
| Pentachlorophenol | 1 | ug/l | **57** | UJ |
| **Tal Metals** | | | | |
| Arsenic | 25 | ug/l | **43** | |
| Chromium, Total | 50 | ug/l | **77** | |
| Iron | 300 | ug/l | **108,000** | |
| Lead | 25 | ug/l | **180** | |
| Magnesium | 35,000 | ug/l | **218,000** | |
| Manganese | 300 | ug/l | **2,500** | |
| Nickel | 100 | ug/l | **180** | |
| Sodium | 20,000 | ug/l | **80,100** | |
| Cyanide | 0.20 | mg/l | **0.75** | J |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-9 10/24/2016 | |
|---|---|---|---|---|
| **TCL VOCs** | | | | |
| Benzene | 5 | ug/l | **12.0** | |
| Ethylbenzene | 5 | ug/l | **5.3** | |
| Vinyl Chloride | 2 | ug/l | **5.4** | |
| Cis-1,2-Dichloroethylene | 5 | ug/l | **8.5** | |
| **TCL SVOCs** | | | | |
| Hexachlorocyclopentadiene | 5 | ug/l | **50.0** | UJ |
| Naphthalene | 10 | ug/l | **98.0** | |
| Pentachlorophenol | 1 | ug/l | **100.0** | UJ |
| **Tal Metals** | | | | |
| Arsenic | 25 | ug/l | **150** | |
| Barium | 1,000 | ug/l | **4,900** | |
| Beryllium | 3 | ug/l | **11.0** | |
| Cadmium | 5 | ug/l | **15** | |
| Chromium, Total | 50 | ug/l | **650** | |
| Copper | 200 | ug/l | **510** | |
| Iron | 300 | ug/l | **322,000** | |
| Lead | 25 | ug/l | **890** | |
| Magnesium | 35,000 | ug/l | **99,300** | |
| Manganese | 300 | ug/l | **6,900** | |
| Nickel | 100 | ug/l | **580** | |
| Selenium | 10 | ug/l | **13** | J |
| Sodium | 20,000 | ug/l | **90,900** | |
| Mercury | 0.7 | ug/l | **1.7** | |
| Cyanide | 0.20 | mg/l | **0.54** | |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-11R 10/26/2016 | |
|---|---|---|---|---|
| **TCL SVOCs** | | | | |
| Pentachlorophenol | 1 | ug/l | **10** | UJ |
| **Tal Metals** | | | | |
| Iron | 300 | ug/l | **12,900** | J |
| Magnesium | 35,000 | ug/l | **501,000** | |
| Manganese | 300 | ug/l | **660** | |
| Sodium | 20,000 | ug/l | **491,000** | |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-10 10/24/2016 | |
|---|---|---|---|---|
| **TCL SVOCs** | | | | |
| Pentachlorophenol | 1 | ug/l | **11** | UJ |
| **Tal Metals** | | | | |
| Arsenic | 25 | ug/l | **31** | |
| Beryllium | 3 | ug/l | **4.7** | |
| Chromium, Total | 50 | ug/l | **200** | |
| Iron | 300 | ug/l | **251,000** | |
| Magnesium | 35,000 | ug/l | **80,100** | |
| Manganese | 300 | ug/l | **7,800** | |
| Nickel | 100 | ug/l | **140** | |
| Sodium | 20,000 | ug/l | **127,000** | |
| Cyanide | 0.20 | mg/l | **1.10** | |

| Analytes | Class GA Ambient Water Quality Standards and Guidance Values | Units | MW-7 10/24/2016 | |
|---|---|---|---|---|
| **TCL VOCs** | | | | |
| Acetone | 50 | ug/l | **82** | UJ |
| Benzene | 5 | ug/l | **36** | |
| Toluene | 5 | ug/l | **12.0** | |
| m,p-Xylene | 1 | ug/l | **34** | |
| **TCL SVOCs** | | | | |
| Benzo(A)Anthracene | 0.002 | ug/l | **0.38** | J |
| Biphenyl (Diphenyl) | 5 | ug/l | **6.0** | |
| Naphthalene | 10 | ug/l | **1,700** | |
| Hexachlorocyclopentadiene | 5 | ug/l | **5.3** | UJ |
| Pentachlorophenol | 1 | ug/l | **6.9** | J |
| Phenol | 1 | ug/l | **3.5** | J |
| **Tal Metals** | | | | |
| Arsenic | 25 | ug/l | **920** | |
| Beryllium | 3 | ug/l | **5.8** | |
| Cadmium | 5 | ug/l | **20** | |
| Chromium, Total | 50 | ug/l | **650** | |
| Iron | 300 | ug/l | **438,000** | |
| Lead | 25 | ug/l | **1,200** | |
| Magnesium | 35,000 | ug/l | **58,900** | |
| Manganese | 300 | ug/l | **3,800** | |
| Sodium | 20,000 | ug/l | **25,100** | |
| Zinc | 2,000 | ug/l | **2,200** | |
| Cyanide | 0.20 | mg/l | **0.91** | |

## LEGEND

- Storm Water Inlet
- Storm Water Outlet
- Monitoring Well Location
- Exceeds Class GA Ambient Water Quality Standards and Guidance Values
- Storm Sewer
- Property Line & Sub-Area Boundaries

D

1" = 50'
50' 25' 0' 50'

References:
1. Parsons, 2017, Tonawanda Plastics Investigation Summary Report
2. Niagara Boundary and Mapping Services, 2022, Site Aerial of 3821 River Road Tonawanda

Note: The trajectories of the 8-inch diameter and 48-inch diameter storm sewers are approximate.

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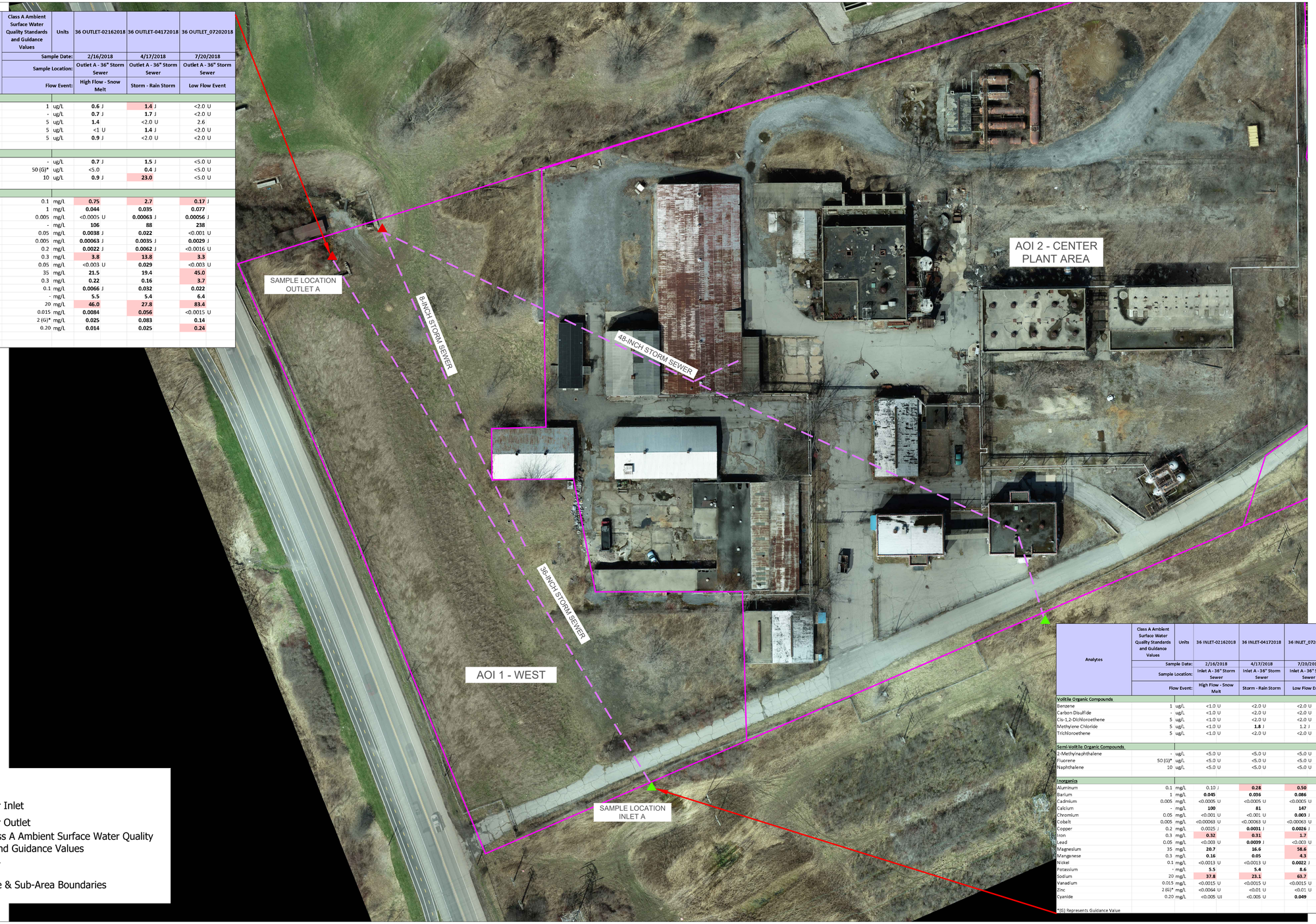
# 2016 MONITORING WELL DATA
## 3821 RIVER ROAD
## TONAWANDA NEW YORK, 14150

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170
(703) 722-6049
www.InventumEng.com

FIGURE 8
DRAWING NUMBER

| Analytes | Class A Ambient Surface Water Quality Standards and Guidance Values | Units | 36 OUTLET-02162018 | 36 OUTLET-04172018 | 36 OUTLET_07202018 |
|---|---|---|---|---|---|
| Sample Date: | | | 2/16/2018 | 4/17/2018 | 7/20/2018 |
| Sample Location: | | | Outlet A - 36" Storm Sewer | Outlet A - 36" Storm Sewer | Outlet A - 36" Storm Sewer |
| Flow Event: | | | High Flow - Snow Melt | Storm - Rain Storm | Low Flow Event |
| **Volitile Organic Compounds** | | | | | |
| Benzene | 1 | ug/L | **0.6** J | **1.4** J | <2.0 U |
| Carbon Disulfide | - | ug/L | **0.7** J | **1.7** J | <2.0 U |
| Cis-1,2-Dichloroethene | 5 | ug/L | **1.4** | <2.0 U | 2.6 |
| Methylene Chloride | 5 | ug/L | <1 U | **1.4** J | <2.0 U |
| Trichloroethene | 5 | ug/L | **0.9** J | <2.0 U | <2.0 U |
| **Semi-Volitile Organic Compounds** | | | | | |
| 2-Methylnaphthalene | - | ug/L | **0.7** J | **1.5** J | <5.0 U |
| Fluorene | 50 (G)* | ug/L | <5.0 | **0.4** J | <5.0 U |
| Naphthalene | 10 | ug/L | **0.9** J | **23.0** | <5.0 U |
| **Inorganics** | | | | | |
| Aluminum | 0.1 | mg/L | **0.75** | **2.7** | **0.17** J |
| Barium | 1 | mg/L | **0.044** | **0.035** | **0.077** |
| Cadmium | 0.005 | mg/L | <0.0005 U | **0.00063** J | **0.00056** J |
| Calcium | - | mg/L | **106** | **88** | **238** |
| Chromium | 0.05 | mg/L | **0.0038** J | **0.022** | <0.001 U |
| Cobalt | 0.005 | mg/L | **0.00063** J | **0.0035** J | **0.0029** J |
| Copper | 0.2 | mg/L | **0.0022** J | **0.0062** J | <0.0016 U |
| Iron | 0.3 | mg/L | **3.8** | **13.8** | **3.3** |
| Lead | 0.05 | mg/L | <0.003 U | **0.029** | <0.003 U |
| Magnesium | 35 | mg/L | **21.5** | **19.4** | **45.0** |
| Manganese | 0.3 | mg/L | **0.22** | **0.16** | **3.7** |
| Nickel | 0.1 | mg/L | **0.0066** J | **0.032** | **0.022** |
| Potassium | - | mg/L | **5.5** | **5.4** | **6.4** |
| Sodium | 20 | mg/L | **46.0** | **27.8** | **83.4** |
| Vanadium | 0.015 | mg/L | **0.0084** | **0.056** | <0.0015 U |
| Zinc | 2 (G)* | mg/L | **0.025** | **0.083** | **0.14** |
| Cyanide | 0.20 | mg/L | **0.014** | **0.025** | **0.24** |

*(G) Represents Guidance Value




| Analytes | Class A Ambient Surface Water Quality Standards and Guidance Values | Units | 36 INLET-02162018 | 36 INLET-04172018 | 36 INLET_07202018 |
|---|---|---|---|---|---|
| Sample Date: | | | 2/16/2018 | 4/17/2018 | 7/20/2018 |
| Sample Location: | | | Inlet A - 36" Storm Sewer | Inlet A - 36" Storm Sewer | Inlet A - 36" Storm Sewer |
| Flow Event: | | | High Flow - Snow Melt | Storm - Rain Storm | Low Flow Event |
| **Volitile Organic Compounds** | | | | | |
| Benzene | 1 | ug/L | <1.0 U | <2.0 U | <2.0 U |
| Carbon Disulfide | - | ug/L | <1.0 U | <2.0 U | <2.0 U |
| Cis-1,2-Dichloroethene | 5 | ug/L | <1.0 U | <2.0 U | <2.0 U |
| Methylene Chloride | 5 | ug/L | <1.0 U | **1.8** J | 1.2 J |
| Trichloroethene | 5 | ug/L | <1.0 U | <2.0 U | <2.0 U |
| **Semi-Volitile Organic Compounds** | | | | | |
| 2-Methylnaphthalene | - | ug/L | <5.0 U | <5.0 U | <5.0 U |
| Fluorene | 50 (G)* | ug/L | <5.0 U | <5.0 U | <5.0 U |
| Naphthalene | 10 | ug/L | <5.0 U | <5.0 U | <5.0 U |
| **Inorganics** | | | | | |
| Aluminum | 0.1 | mg/L | 0.10 J | **0.28** | **0.50** |
| Barium | 1 | mg/L | **0.045** | **0.036** | **0.086** |
| Cadmium | 0.005 | mg/L | <0.0005 U | <0.0005 U | <0.0005 U |
| Calcium | - | mg/L | **100** | **81** | **147** |
| Chromium | 0.05 | mg/L | <0.001 U | <0.001 U | **0.003** J |
| Cobalt | 0.005 | mg/L | <0.00063 U | <0.00063 U | <0.00063 U |
| Copper | 0.2 | mg/L | 0.0025 J | **0.0031** J | **0.0026** J |
| Iron | 0.3 | mg/L | **0.32** | **0.31** | **1.7** |
| Lead | 0.05 | mg/L | <0.003 U | **0.0039** J | <0.003 U |
| Magnesium | 35 | mg/L | **20.7** | **16.6** | **58.6** |
| Manganese | 0.3 | mg/L | **0.16** | **0.05** | **4.3** |
| Nickel | 0.1 | mg/L | <0.0013 U | <0.0013 U | **0.0022** J |
| Potassium | - | mg/L | **5.5** | **5.4** | **8.6** |
| Sodium | 20 | mg/L | **37.8** | **23.1** | **63.7** |
| Vanadium | 0.015 | mg/L | <0.0015 U | <0.0015 U | <0.0015 U |
| Zinc | 2 (G)* | mg/L | <0.0094 U | <0.01 U | <0.01 U |
| Cyanide | 0.20 | mg/L | <0.005 UJ | <0.005 U | **0.049** |

*(G) Represents Guidance Value

LEGEND

- Storm Water Inlet
- Storm Water Outlet
- Exceeds Class A Ambient Surface Water Quality Standards and Guidance Values
- Storm Sewer
- Property Line & Sub-Area Boundaries

D

1" = 50'

50' 25' 0' 50'

References:

1. Parsons, 2021, Tonawanda Plastics Site NYSDEC ID 915003 Draft Site Investigation Summary Report
2. Niagara Boundary and Mapping Services, 2022, Site Aerial of 3821 River Road Tonawanda

Note:

1. Storm sewer data is compare to the Class A ambient surface water quality standard because the SPDES discharge criteria for Energy Transfer at Inlet A is not available.
2. The trajectories of the 8-inch diameter and 48-inch diameter storm sewers are approximate.

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# 2018 STORM SEWER DATA
*3821 RIVER ROAD*
*TONAWANDA NEW YORK, 14150*

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170
(703) 722-6049
www.InventumEng.com

FIGURE 9

DRAWING NUMBER

# Site Specific
# Health and Safety Plan

## Tonawanda Plastics

**Rev. 4.0**

3821 River Road

TONAWANDA, NY

Submitted to:

3821 River Rd, Inc.
140 Lee Street, Suite 200
Buffalo, NY 14210

Prepared by:

140 Lee Street

Buffalo, NY 14210

2/16/2024

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## Authorization Signatures

This Site-Specific Health and Safety Plan (SSHASP) has been reviewed and approved by the individuals below. The undersigned certify that to the best of their knowledge this SSHASP meets the safety requirements as defined by the project specifications and all known applicable governing regulatory requirements.

John Yensan, President
OSC — Date: 6/4/26

Al Trpevski, Project Manager
OSC — Date: 6/4/26

Matt Reardon, Superintendent
OSC — Date: 6/4/26

Paul Mulvey, Director HS&E
OSC — Date: 2/16/2024

# Conformance Signatures

**All Individuals working on this Project, including subcontractors must read and sign. Note: this does not apply to visitors who will not be doing work on the project.**

The following personnel have read and fully understand the contents of this site's Health and Safety Plan and further agree to all requirements contained herein.

| Name | Affiliation | Date | Signature |
|---|---|---|---|
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## Emergency Contact List

# Tonawanda Plastics

3821 River Road

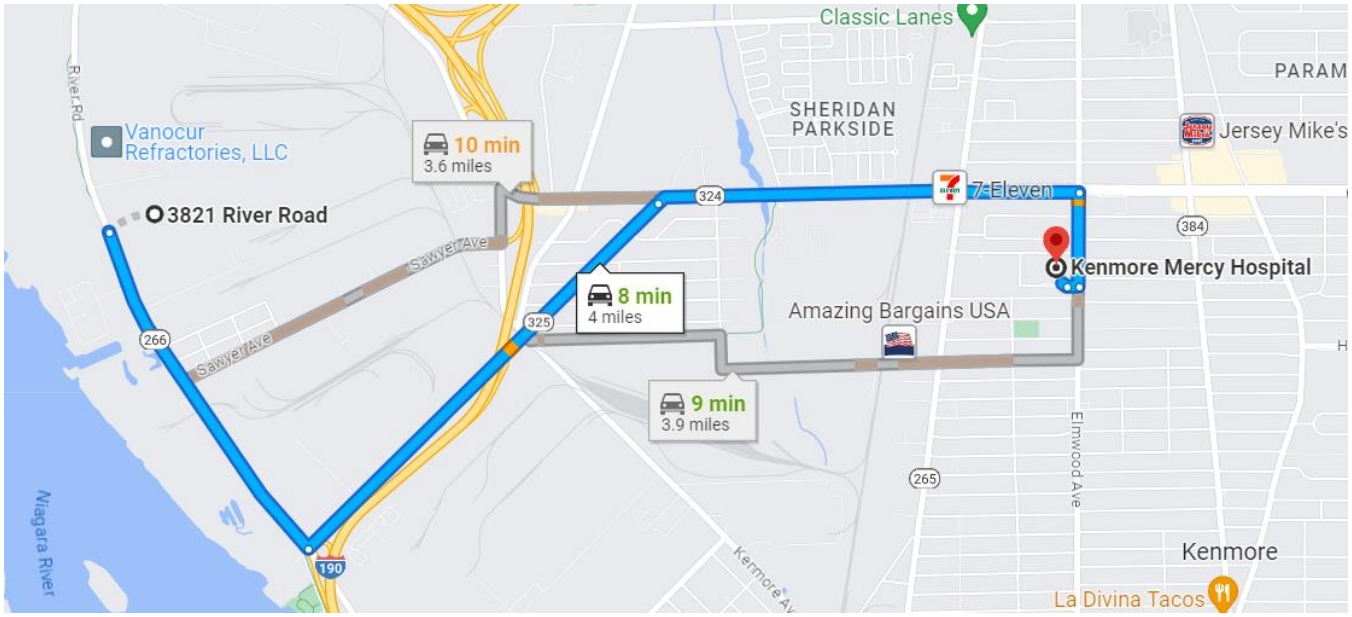
Tonawanda, New York 14150

| AGENCY | Contact | Phone Number |
|---|---|---|
| Owner's Representative | John Black<br>Project Manager | 571-217-6761 |
| OSC | Matt Reardon<br>Superintendent | 716-570-0717 |
| | Brian Rudnick<br>Site Health and Safety Officer (HSO) | 716-864-7585 |
| | Al Trpevski<br>Project Manager | 716-818-3390 |
| | John Yensan<br>President | 716-583-4400 |
| | Paul Mulvey<br>Director HS&E | 702-677-2967 |
| Kenmore Mercy Hospital | Medical Emergency | 911<br>(direct) 716-447-6100 |
| Fire, Police, Ambulance | Dispatch | 911 |
| Utilities | Water<br>Gas<br>Electric | 911 |
| Town of Tonawanda<br>Wastewater Treatment | Paul Morrow<br>Pretreatment Coordinator | 716-693-4900 ext. 4550<br>716-818-5879 (cell) |

| AGENCY | Contact | Phone Number |
|---|---|---|
| Site Emergency | Police, Fire Dept., Ambulance | 911 |
| Fire Department | | 911 |
| Police Department & Security | | 911 |
| Ambulance | | 911 |
| Spill Emergency | Paul Morrow<br>Pretreatment Coordinator | 716-693-4900 ext. 4550<br>716-818-5879 (cell) |
| Poison Control | American Association of Poison Controls | 1-800-222-1222 |
| US EPA Release Report Number | National Response Center | 1-800-424-8802 |
| HAZARDOUS MATERIALS | CHEMTREC (CCN 101139) | 1-800-424-9300 |

LOCAL MEDICAL

# Kenmore Mercy Hospital, 2950 Elmwood Ave 14127
# (Dial 911 for Emergency) (716) 447-6100




- Turn left onto River Road (1.1 mi)
- Turn left onto Sheridan Drive (1.4 mi)
- Merge right to stay on Sheridan Dr. (1.2 mi)
- Turn right onto Elmwood Ave. (0.3 mi)
- The hospital is on the right.

*OSC Medical Consultant:*

Medcor, Inc.
4805 W. Prime Parkway
McHenry, Illinois 60050
800-775-5866

*Non-medical Emergency:*

FOCUS Occupational Services, LLC
2099 Niagara Falls Blvd.
Amherst, NY 14228
(716) 710-8072

# INTRODUCTION

## SITE BACKGROUND

The Brownfield Cleanup Program site consists of approximately 17.446 acres located at 3821 River Road, Town of Tonawanda, Erie County, New York. The Site is located approximately 0.25 miles west of I-90 on the east side of River Road. The surrounding properties are primarily industrial or vacant.

The Site was originally developed by Allied Fibers and Plastics Company (Allied), now known as Honeywell International, in the early 1950s, and was operated as a manufacturing facility through 1982. Site operations included the polymerization of ethylene into low molecular weight polyethylene (trademark: A-C Polyethylene and Co-polymers), which was finished into powder, pelleted and solid forms. The property was sold to Rouse Breihan, Inc. in 1985. Rouse Breihan conducted some management and laboratory testing for the Tonawanda Coke Corporation (TCC) on the proposed BCP Site. A trucking firm also used the site for vehicle maintenance and parking. The Site has been vacant since 2019. 3821 River Road, Inc. purchased the Site from Rouse Breihan, Inc. on August 2, 2022.

Approximately 23 buildings are present on the Site and 12 aboveground storage tanks (AST) with aboveground and below grade piping are located in the center portion of the Site. The remaining buildings are unoccupied and unmaintained.

### Previous Site Remediation

During the summer of 1981, approximately 500 cubic yards (CY) of “tar” and soils were excavated and removed from an area approximately 100-feet by 10 to 20-feet wide located in the eastern portion of the Site along the southern property boundary. The Coal Tar Site (NYSDEC Inactive Hazardous Waste Site 915003C) consisted of an area of the plant property where pools of what was described as “coal tar”, from spillage and leakage during product-transfer operations, were located. The tar removal was completed by the TCC, under agreement with Allied, as part of the demolition of the idle facility termed the “tar storage” terminal. Tar removal was completed to the underlying clay layer. Analytical results of confirmatory soil samples collected following the excavation showed that residual chemicals of concern (COCs) were not detected or were in low parts per million (ppm) concentrations. Three test holes adjacent to the excavation were completed to a depth of approximately three feet to determine if any further migration of coal tar had taken place and no contamination was observed in the test holes. In addition to the “tar” and soil removal, a buried coal tar pipeline was also removed to the property limits. As part of the pipeline removal, an underground tank which was used as a “blow-down” tank for the transfer line, was removed. NYSDEC informed Allied in October 1981 that no further remediation was necessary in the Coal Tar Site and blow down tank area.

The site was sampled by the United States Geological Survey (U.S.G.S.) in July of 1982 and in May of 1983 under the Niagara River Toxics Investigation. Chromium and lead exceeded concentrations

in samples taken from undisturbed soils in the Tonawanda area. Twenty-one organic priority pollutants were detected in the soil samples and all concentrations were below 10 parts per billion (ppb). A Phase I Investigation was completed in 1983 and an investigation was carried out at the end of 1988. Soil samples collected inside the pit showed high levels of chromium and elevated levels of lead. Sediment from an onsite catch basin showed elevated metals concentrations. Sampling and analysis of five off-site sewer samples showed no migration from this source. To further the investigation, up-gradient monitoring wells and four additional wells were installed. Sampling of the monitoring wells over one year showed groundwater exceedances for cyanide, benzene, ethylbenzene, toluene, xylene, and numerous poly aromatic hydrocarbons (PAH) compounds.

### Project Scope

3821 River Rd, Inc. has contracted OSC, Inc. for the overall demolition and remediation of the former Tonawanda Plastics Plant property in Tonawanda, NY. Remediation will be per requirements of the New York State Brownfield Cleanup Program (NYSBCP) and the New York State Inactive Hazardous Waste Site Program (aka State Superfund). Inventum Engineering, PC is providing technical guidance for the project.

The work includes, but is not limited, to the following:

- Mobilization
- Installation of erosion and sediment controls
- Installation of site temporary features (waste/equipment decontamination pads, temporary access roads, and temporary utilities)
- Asbestos removal on structures, building materials, fittings, and debris.
- Stabilization and removal of above ground tank contents
- Removal of hazardous process and product waste chemicals as well as universal waste
- Cleaning/decontamination of above ground structures deemed to remain on site.
- Overhead, above ground, and below grade pipe removal.
- Demolition of buildings, structures, and tanks not to remain on site.
- Treatment/neutralization of surface soils and water as reasonably feasible per NYSBCP
- Removal of grossly contaminated soil not otherwise treated/neutralized.
- Tank cleaning and costing for scrap.
- Dewater
- Grading
- Restoration and seed stabilization
- Demobilization

## APPLICABILITY and REFERENCES

OSC has developed the following Site-Specific Health and Safety Plan (SSHASP) in accordance with the project contract requirements and Federal, State and Local regulations. It is intended for individuals performing work at the site and not for those considered visitors for observation only

tasks. All operations and equipment used in conjunction with this contract shall, at a minimum, comply with the following:

- New York State Brownfield Cleanup Program
- Project Site Specific Health and Safety Plan (this SSHASP)
- OSC Technical Work Plan
- OSHA 29 CFR 1910: Occupational Safety and Health Standards – General Industry
- OSHA 29 CFR 1926: Safety and Health Regulations for Construction
- EPA 9285.1-03: Office of Emergency and Remedial Response – Standard Operating Safety Guides
- OSC Corporate Health, Safety and Environmental Program Manual
- Orientation and Training (Supervision, Laborers, Operators & Visitors)
- Job Hazard Analysis (JHA)
- Standard Operating Procedures; Emergency Response, Reporting, Incident Investigation, Inspections, Audits, Work Procedures, Hazard Communication, Hot Work, Confined Space, Fire Prevention, Control of Hazardous Energy (Lockout, Tagout, Tryout), Excavations, Controlled Work Zones including decontamination, Ladders, Steps, Stairs, Scaffolding Contractor/Vendor Safety Checklist, Heavy Equipment Operation, Forklift Operation, Powered Aerial Platforms
- Substance Abuse Policy
- Receive site orientation training regarding the project requirements contained in this SSHASP. Site orientation will be conducted by OSC's Health and Safety Officer (HSO) named in Section 2.0 of this HASP.
- Acknowledge in writing, on page 4 of this SSHASP titled Conformance Signatures that they have received the site-specific orientation and therefore, have been trained in and understand the contents of this HASP and the general site safety requirements.

The health and safety protocol that is established in this SSHASP is based upon the known site conditions and or conditions anticipated to be present from established site data. This SSHASP is a living document that shall be updated and or revised over the term of this contract as warranted by change in site conditions, scope of work, methods, and improvement measures. A copy of this SSHASP shall be maintained at the project site.

## DEFINITIONS

The Owner: 3821 River Rd, Inc.

The Engineer: Inventum (Owner Representative)

The Contractor: OSC – Company retained by owner to conduct the project.

The Project: Brownfield Cleanup Program, 3821 River Road, Tonawanda, NY

The Project Site: The area designated as the Contractor work area.

Contractor Work Area: An area of the Project site which includes the support zones, access roads, staging areas, contamination reduction zones and exclusion zones.

Active Full Time Project Personnel: All personnel who are permanently assigned to the project and required to perform work. Does not include visitors or vendors visiting the site temporarily who are required to be escorted always by an authorized and trained project employee.

Qualified Person: A person with a recognized degree, or professional certificate, along with extensive knowledge and experience in the subject field who can do design, analysis, evaluation and specifications.

Competent Person: A person who can identify existing any predictable hazards in their surroundings/working conditions which are unsanitary, hazardous or dangerous to employees, and who has both knowledge and authorization to take prompt corrective measures to eliminate them.

Authorized Personnel: A person that is approved or assigned by OSC to perform a specific type of duty/duties, or to be at a specific location(s) at the project site.

Stop Work Authority: HS&E personnel, qualified and competent persons, owner representatives and *all project employees* shall have the authority to stop work in any situation deemed unsafe to those working on the project site, or in any situation that poses a risk to the environment. Work will remain stopped until the involved parties correct their impact or conditions as per the requirements of this HASP.

Contamination Reduction Zone (CRZ): The CRZ is the transitional area between the identified contaminated and clean areas. The CRZ will be provided for the transfer of equipment and materials to and from the exclusion zone; the decontamination of personnel and equipment existing in the exclusion zone; and the physical segregation of the clean and contaminated work areas.

Exclusion Zone (EZ): The exclusion zone encompasses the areas of the contaminates of concern (COCs); as well as any areas being utilized for the temporary storage of salvaged materials [ex. valves] and spoils to be discarded as waste. The purpose of the EZ is to limit access to only qualified and necessary personnel and manage the potential spread of COCs.

## SITE VISITOR REQUIREMENTS

A safe location, where all visitors can observe site activities of interest will be identified by the HSO. Anyone visiting the site will receive site-specific instructions from the HSO. All visitors shall be escorted at all times by site trained personnel after signing in and completing orientation. Visitor training will include at a minimum:

- OSC Project Safety Orientation and general site orientation.
- Project Hazard Communication system
- Job Hazard Analysis (AHA) review (as needed)
- Work Permit Process (as needed)
- Safety Meetings and Inspections

- PPE requirements.
- Decontamination procedures (as needed).
- Emergency procedures, and
- Any other site-specific information that the HSO deems necessary.

Any visitor wishing to enter an established contamination reduction zone (CRZ), or exclusion zone will be required to provide the HSO with documentation of medical monitoring and training equivalent to the requirements of this HASP for that area. Only authorized visitors with written proof that they have been medically certified and trained in accordance with project requirements will be permitted to enter the CRZ and/or exclusion area.

The only exception to this rule is for emergency personnel who may enter the work area without fully complying with the requirements of this subsection. Emergency crews will be quickly briefed as to site conditions and hazards by the HSO.

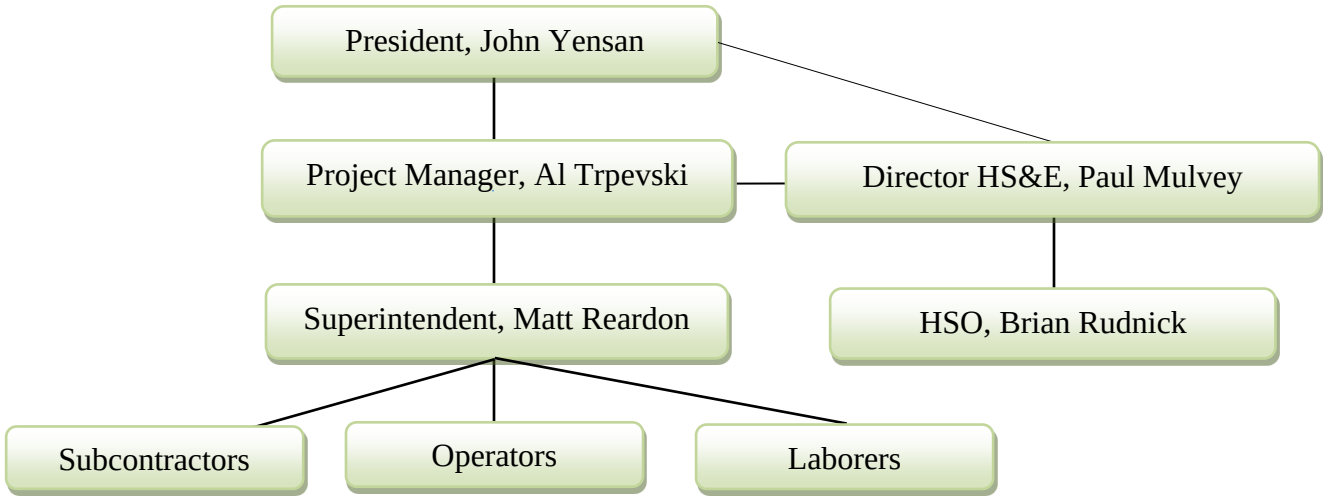
## HEALTH and SAFETY ORGANIZATION

The following *OSC* management personnel will be assigned to this Project:

- President – John Yensan
- Project Manager – Al Trpevski
- Superintendent – Matt Reardon
- On Site Health & Safety Officer – Brian Rudnick
- Director HS&E – Ed Hartman

In addition to the above-listed management, OSC will provide the appropriate number of operators and laborers, as well as the required subcontractors for this project.

### ORGANIZATION CHART



## PERSONNEL RESPONSIBILITIES

### *PROJECT MANAGERS AND SUPERINTENDENTS*

The Project Manager will be responsible for the overall direction and completion of this contract. The Project Manager reports to the President and will be responsible for managing and coordinating all project related activities; as well as serving at OSC's primary contact with the Owner and/or Owner's Representative. The Site Superintendent will be responsible for overseeing contractor and subcontractor operations in the field. The Site Superintendent will report directly to the Project Manager.

Project Managers and Superintendents will be responsible for the following:

- Assure daily compliance with the Corporate HS&E Manual and this SSHASP during the project.
- Implement the procedures and guidelines outlined in this SSHASP throughout the project.
- Implement incident investigations. The Site Superintendent will notify INVENTUM management and the OSC Director HS&E immediately. Documentation will be maintained on OSC's Incident Report (see attachment I). The Incident Report will be submitted to 3821 River Rd Inc representative (Inventum) by OSC. The HSO will conduct the incident investigation with support from the Superintendent and Director.
- Perform and support site safety audits and address all deficiencies.
- Provide incentive and motivation for safe work practices, as well as discipline for unsafe work practices.
- Ensuring a copy of this SSHASP is onsite always.
- Conduct initial site orientation meetings.

### *HEALTH AND SAFETY OFFICER (HSO)*

The HSO will handle health and safety management on the project and will report to the Director HS&E. Specific duties of the HSO include:

- Overall implementation, enforcement and maintenance of this SSHASP.
- Act as a point of contact for all project site health and safety concerns.
- Conduct initial training of the contents of this HASP; as well periodic training for when rules/regulations change, new equipment or procedures are introduced, additional skills are needed, and new hazards are presented. Report observations in the daily safety meetings and update AHAs and training accordingly.
- Conduct daily meetings regarding health and safety.
- Supervising any additional HS&E requirements that are needed for this project.

The HSO will monitor the jobsite health and safety via inspection at the start and completion of each day's work; as well as monitoring the jobsite for this purpose throughout the day. The initial daily inspection will be recorded on OSC's inspection and audit form (Attachment I). Corrective actions and end-of-the-day inspection results will be recorded in the HSO's project safety logbook. Any deficiencies will be promptly corrected. All corrective and improvement measures will be

reviewed with project personnel at the morning daily safety briefing. Intentional violations of the site HS&E regulations will be grounds for disciplinary action, which could include temporary suspension or termination of personnel and/or expulsion of vendor and/or subcontractor personnel from the site.

*HS&E TECHNICIANS (not anticipated for this project)*

The HSO will assign qualified technicians (air monitoring, material sampling, equipment specific and job design professionals) to each work crew or task in hazardous areas as warranted.

*OSC CORPORATE MEDICAL CONSULTANT AND NON-EMERGENCIE*S

The Medical Consultant will be available to provide call-in emergency medical consulting to OSC personnel on an around-the-clock basis. Medical emergencies occurring during normal work hours will be provided by the local hospital (see above). Non-emergency medical support and OSC's Medical Consultant are:

Medcor, Inc.
4805 W. Prime Parkway
McHenry, Illinois 60050
800-775-5866

FOCUS Occupational Services, LLC
2099 Niagara Falls Blvd.
Amherst, NY 14228
716-710-8072

*SUBCONTRACTORS*

All subcontractors shall be prequalified according to the OSC subcontractor/vendor prequalification requirements including Certificates of Insurance that meet or exceed the project contract requirements.

All subcontractor employees shall be required to attend a project safety orientation prior to starting work on site (See Training and Orientation Requirements of this HASP). Subcontractors are responsible for health and safety as it pertains to their operations at the project site and shall provide the required OSC HS&E supporting documentation. Documented proof of training shall be provided for all subcontractor employees. All subcontractors are responsible for providing their employees with the proper site-specific PPE required to perform their work as well as to ensure that all tools and equipment they use are properly inspected and maintained. Subcontractors are responsible for ensuring that their employees conform to all HS&E project requirements and all applicable government regulations. Subcontractors shall formulate work specific JHA's and submit them to the OSC Project Manager and Safety Director for review and approval prior to starting work.

## SITE SPECIFIC TRAINING and ORIENTATION

Personnel, including subcontractors, shall be provided with the training required to comply with this SSHASP. Training documentation (training certificates, attendance rosters) will be filed and maintained onsite by the HSO and will be made available for inspection upon request. Training documentation will be kept in an organized manner for each individual worker.

Full-time active project personnel working onsite must have received the following:

- Required safety training as defined by OSHA CFR 1926.21 for construction.
- OSHA 1926.65, HAZWOPER (employees potentially exposed to hazardous chemicals)
- Medical clearance - fit for work, (includes medical surveillance for specific occupations and probable contaminants) negative drug screen, clearance for respirator use, fit test and training for the type of respirator required.

Supervisor Training – in addition to the above all designated supervisors shall have as a minimum received training that covers competent person training for the specific operation, they are responsible for (i.e. excavation trenching and shoring, confined space, rigging, hot work, etc.), first aid and CPR, record keeping, incident investigation, employee substance abuse i.e., reasonable suspicion), HS&E documentation requirements.

## TRAINING DOCUMENTATION

Documentation of training, provided by a qualified safety professional, will be maintained as necessary for the following topics:

- OSC Site Specific Orientation
- Job Hazard Analysis & Safe work procedures (JHA Review)
- Project Hazard Awareness training
- PPE requirements & possible decontamination procedures
- Heat/Cold Stress
- Fall Protection
- Heavy Equipment Operation (Authorized, Unauthorized)
- Powered Industrial Fork Truck Operation (Authorized, Unauthorized)
- Control of Hazardous Energy Lockout/Tagout and Air Gapping Requirements (1 ft visible air gap)
- Incident reporting
- Emergency response & available services (medical, fire, inclement weather, tornado, bomb threat, signals and procedures)
- Hoisting and Rigging
- Respirator use, maintenance, inspection, medical clearance, and fit test
- Excavation hazards and protective measures
- Confined Space if applicable.
- Dust, Erosion, and Sediment Control.
- Noise control measures
- OSC's STAC program
- Authority to stop work (all employees) and the buddy system "No One Works Alone".

## JOB SPECIFIC SPECIALIZED TRAINING & MEDICAL CLEARANCE

OSC employees will all participate in the company's annual medical surveillance program which evaluates "fit for duty" condition. These evaluations will be provided by a licensed health care professional.

Employees that may be exposed to elevated levels of contaminates (to be determined) or that wish to use tight-fitting respirators on a voluntary basis will require a current medical evaluation and be respiratory qualified in compliance with OSHA 1910.134.

## MEETINGS

Attendance at all HS&E meetings will be documented and filed onsite.

- Daily Morning Safety Brief prior to the start of work "Tool Box Talk".
- Prior to the beginning of each work task, all involved workers shall be required to attend a task-specific HS&E meeting to review task-specific health and safety requirements pertinent to the tasks (JHA review - job hazards and protective measures).

*Weekly HS&E Meetings*

All onsite Supervisory personnel shall be required to attend a weekly meeting, conducted by the owner representative, to review project and/or task specific procedures. Topics to be discussed at these weekly meetings include but are not limited to.

- AHA – review for all definable features of work, hazards, and controls.
- STAC - employee work observations and recommendations
- Audit/Inspection findings, and recommendations for improvement.
- Necessary training requirements and site work rules,
- Change in work practices and/or work conditions, incident reports.
- Precautions and work practices related to scheduled site activities.
- New or modified site wide procedures or requirements.
- Discussion of potential hazards or hazardous operations.
- Procedures in restricted areas.
- Equipment rules and requirements.
- Restrictions on the handling of materials.
- PPE requirements.
- Delegation of responsibility (emergency backup personnel, competent persons, etc.).
- Review of emergency response for anticipated situations (medical, fire, inclement weather, tornado, bomb threat, environmental release/spill) and communication methods (alarms, radio, voice, and hand signals).

### HS&E AUDITS

The OSC Director, HSE will make project site visits to assure compliance with this HASP and aid as needed. Site audits will be made minimally on a quarterly basis using the company's audit criteria (see Appendix I Forms). An audit finding report will be submitted to the project manager and superintendent within 5 days of the site visit. Highlighted deficiencies must be corrected immediately if not done so during the site visit.

### SUBSTANCE ABUSE SCREENING

OSC maintains a drug free workplace. The company prohibits the use, manufacture, sale, possession, or transfer of illegal drugs, alcohol, and controlled substances on project sites.

OSC requires pre-employment, reasonable suspicion and random substance abuse testing (random testing for project-assigned personnel only as required by contractual agreement). Post injury screening may also be conducted in conjunction with reasonable suspicion. Employees as a minimum will undergo testing for illegal drugs before working on the project. Drug and alcohol screens shall be managed by OSC using laboratories certified by HHS under the National Laboratory Certification Program (NLCP).

Reasonable suspicion testing may be triggered by direct observations of employee behavior or drug-related paraphernalia. Site personnel who have been observed using alcohol or controlled substances on site or during breaks at off-site locations after which they will return to work will be requested to take an alcohol or drug test. Reasonable suspicion includes possession (on person or in vehicles) of alcohol or controlled substances on site as well as paraphernalia that suggest drug use. Site personnel who exhibit signs, symptoms, or behaviors of drug or alcohol use as interpreted by a reasonable person will also be requested to take a drug and/or alcohol test.

*NOTE* - Prescription drugs taken without an authorized prescription for use is considered an illegal drug. Also, in case of any injury, incident, or emergency, employees may be required to undergo a 10-panel screen for illegal drugs, alcohol (breath), or prescribed medication. Submission to substance abuse testing is a condition of employment. Failure or refusal to submit to substance abuse testing is treated the same as a positive result. All reports will be maintained at the main office. Any positive results will be referred to OSC Senior Management for further action.

## PROJECT OVERVIEW AND TASK RISK ANALYSIS

### TASK/RISK ANALYSIS

A Job Hazard Analysis (JHA) shall be developed for significant features of work which break jobs down into individual tasks defining the potential hazard of that task and the proper protective and control measures that shall be taken to minimize the hazard. JHA's shall be submitted with any required daily work permit to the owner representative for their review. JHA's shall be modified as warranted by safe work observations, audit and incident investigation. Assessment of the work hazards associated with the scope of work for this project is provided in Table 1.0 below. PPE requirements for all work shall be primarily in level D; ANSI approved hard hat, safety glasses, hearing protection with elevated noise exposures (i.e., working with power tools or near sources of

loud noises), abrasion resistant gloves, safety toed boots or safety toed rubber boots (dependent on hazard exposure), high visibility traffic vest or equivalent high visibility clothing, and/or disposable coveralls (modified D). Specific information relating to the potential chemical, physical, biological and radiological hazards is provided in Table 1.1.

**TABLE 1.0**
**OVERALL JOB HAZARD EXPOSURE** (See also attachment I (JHA))

| | Potential Exposure |
|---|---|
| Mobilization and temporary facilities and controls; establishment of work zones: hazard warning signs, OSC designated work area signage including barricades and area delineation, address safe work surface needs, add lighting, traffic controls, dust, fire and erosion controls. | Low |
| Installation of erosion and sediment control | Moderate |
| Installation of site temporary features (waste/equipment decontamination pads, roads) | Moderate |
| Asbestos removal on structures, building materials, fittings, and debris | Moderate/High |
| Stabilization and removal of above ground tank contents | Moderate/High |
| Removal of hazardous process and product waste chemicals & universal waste | Moderate/High |
| Cleaning/decontamination of above ground structures deemed to remain on site | Moderate/High |
| Overhead and Below Grade Piping Removal | Moderate/High |
| Tank cleaning | Moderate/High |
| Mechanical demolition of buildings, structures, and tanks | Moderate/High |
| Treatment/neutralization of surface soils and water as reasonably feasible per NYSBCP | Moderate/High |
| Excavation / trenching / test pitting | Moderate/High |
| Installation of temporary groundwater treatment system | Moderate/High |
| Managing COG lines, product lines, and utilities | Moderate/High |
| Removal of grossly contaminated soil not otherwise treated | Moderate/High |
| Restoration and seed stabilization | Low |
| Demobilization | Low |

Low: Non-intrusive work – Minimal hazard/chance of exposure.
Slight: Non-intrusive work / Possible HS&E hazards with tools. – Little chance of exposure.
Moderate: Non-intrusive work / Possible HS&E hazards with powered tools, heavy equipment and/or working near or in water – Little chance of exposure to contaminants.
Moderate/High: Intrusive work / Possible HS&E hazards with equipment – Exposure to contaminants is possible.
High: Intrusive work / Possible HS&E hazards with equipment – Exposure to contaminants is probable.

## CONTAMINATE/CHEMICAL HAZARDS

*Existing Site Hazards*

The site was sampled by the United States Geological Survey (U.S.G.S.) in July of 1982 and in May of 1983 under the Niagara River Toxics Investigation. Chromium and lead exceeded concentrations in samples taken from undisturbed soils in the Tonawanda area. Twenty-one organic priority pollutants were detected in the soil samples and all concentrations were below 10 parts per billion (ppb). A Phase I Investigation was completed in 1983 and an investigation was carried out at the end of 1988. Soil samples collected inside the pit showed high levels of chromium and elevated levels of lead. Sediment from an onsite catch basin showed elevated metals concentrations. Sampling and analysis

of five off-site sewer samples showed no migration from this source. To further the investigation, up-gradient monitoring wells and four additional wells were installed. Sampling of the monitoring wells over one year showed groundwater exceedances for cyanide, benzene, ethylbenzene, toluene, xylene, and numerous poly aromatic hydrocarbons (PAH) compounds.

Table 1.1

| Complete Substance Name (be specific) (1) | Specific Applicable OSHA Standard (if any) | Physical State (S, L, G, Aq, Vap, F, P) (2) | Max. Conc. Level Per Physical State (3) | General Control Measures (Eng., Admin., PPE) (4) |
|---|---|---|---|---|
| Acetone | 2400 mg/m3 | L | 82 ug/L | Eng., PPE |
| Acenaphthene | NA | S | 790 ug/kg | Eng., PPE |
| Acenaphthylene | NA | S | 3,200 ug/kg | Eng., PPE |
| Anthracene | 0.2 mg/m3 | S | 14,000,000 ug/kg | Eng., PPE |
| Benzo(a)anthracene | 0.2 mg/m3 | S, L | 3,100,000 ug/kg, 0.4 ug/L | Eng., PPE |
| Benzo(a)pyrene | 0.2 mg/m3 | S | 2,800,000 ug/kg | Eng., PPE |
| Benzo(b)fluoranthene | 0.2 mg/m3 | S | 3,200,000 ug/kg | Eng., PPE |
| Benzene | N/A | S, L | 86,000 ug/kg, 84 ug/L | Eng., PPE |
| Benzo(G,H,I) perylene | 1 ppm | S | 1600,000 ug/kg | Eng., PPE |
| Benzo(k)Fluoranthene | NA | S | 1,300,000 ug/kg | Eng., PPE |
| Biphenyl (Diphenyl) | | L | 31 ug/L | Eng., PPE |
| Bis(2-Ethylhexyl) Phthalate | NA | L | 34 ug/L | Eng., PPE |
| Chrysene | 0.2 mg/m3 | S | 3,000,000 ug/kg | Eng., PPE |
| cis-1,2-Dichloroethene | 0.2 mg/m3 | L | 50 ug/L | Eng., PPE |
| Dibenz(a,h)anthracene | NA | S | 460,000 ug/kg | Eng., PPE |

| | | | | |
|---|---|---|---|---|
| Ethylbenzene | 545 mg/m3 | S, L | 1,700 ug/kg, 20.0 ug/L | Eng., PPE |
| Fluoranthene | NA | S | 9,400,000 ug/kg | Eng., PPE |
| Fluorene | NA | S | 4,400,000 ug/kg | Eng., PPE |
| Hexachlorocyclopentadiene | NA | L | 50 ug/L | Eng., PPE |
| Indeno(1,2,3-Cd) Pyrene | NA | S | 15,000,000 ug/kg | Eng., PPE |
| Naphthalene | 50 mg/m3 | S, L | 11,000,000 ug/kg, 1700 ug/L | Eng., PPE |
| Pentachlorophenol | 0.5 mg/m3 | L | 100 ug/L | Eng., PPE |
| Phenanthrene | 0.2 mg/m3 | S | 13,000,000 ug/kg | Eng., PPE |
| Phenol | 19 mg/m3 | L | 3.5 ug/L | Eng., PPE |
| Pyrene | NA | S | 5,900,000 ug/kg | Eng., PPE |
| Toluene | 200 ppm | S, L | 83,000 ug/kg, 12 ug/L | Eng., PPE |
| Trichloroethene | 100 ppm | L | 5.9 ug/L | Eng., PPE |
| Total Xylenes | 435 mg/m3 | S, L | 120,000 ug/kg, 34 ug/L | Eng., PPE |
| Vinyl Chloride | 1 ppm | L | 5.4 ug/L | Eng., PPE |
| Arsenic | 10 µg/m³ | L | 920.0 ug/L | Eng., PPE |
| Barium | 0.5 mg/m3 | L | 4,900.0 ug/L | Eng., PPE |
| Beryllium | 0.2 µg/m³ | L | 11.0 ug/L | Eng., PPE |
| Cadmium | 5 µg/m³ | L | 16.0 ug/L | Eng., PPE |
| Chromium, Total | 1 mg/m3 | S, L | 37,600 ug/kg, 5,800 ug/L | Eng., PPE |
| Copper | 0.1 mg/m3 | L | 510.0 ug/L | Eng., PPE |

*Chemicals Brought On-Site*

The use of chemical products onsite will follow the requirements set forth in OSHA 29 CFR 1910.1200 (OSHA's Hazard Communication Standard), applicable Federal, State and Local regulations and the project procedure provided in this HASP. The potential hazards associated with these products will be mitigated through site specific training, administrative controls (e.g. labeling and storage) and use of the prescribed PPE.

Safety Data Sheets (SDS) for all chemicals brought onsite, will be available for review in OSC's field office at the project site. Chemical products shall be labeled which shall include, product name, manufacturers name, hazard warning, identifier and hazard pictogram.

The following table provides exposure guidelines for common hazardous chemicals that may be brought to the site, if required, for use during this project. The HSO will be notified before any new chemicals (chemicals not listed on the below table) are brought onsite.

| HAZARD SUMMARY FOR CHEMICALS BROUGHT ONSITE | | | | | |
|---|---|---|---|---|---|
| **Substance** | **Route of Entry** | **Exposure Symptoms** | **Treatment** | **8 Hour TWA** | **STEL and IDLH** |
| Diesel Fuel | • Skin contact<br>• Eye contact<br>• Inhalation<br>• Ingestion | • Harmful if comes in contact with or is absorbed throughout the skin.<br>• Contact may cause skin and eyes irritation.<br>• Prolonged or repeated exposure may cause liver or blood forming organ damage.<br>• May cause skin irritation or dermatitis. | • Eyes: Irrigate immediately.<br>• Skin: Flush with soap and water.<br>• Inhalation: Remove the victim to fresh air and provide respiratory support if needed.<br>• Ingestion: Seek medical attention. | 300 ppm | STEL: 500 ppm |
| Grease, Oil and Hydraulic Fluids | • Skin contact<br>• Eye contact<br>• Inhalation<br>• Ingestion | • May be slightly irritating to skin and eyes.<br>• Inhalation may cause headaches.<br>• Ingestion could result in nausea and vomiting. | • Eyes: Irrigate immediately.<br>• Skin: Flush with soap and water.<br>• Inhalation: Remove the victim to fresh air and provide respiratory support if needed.<br>• Ingestion: Seek medical attention. | N/A | N/A |
| Gasoline Petroleum Distillates | • Skin contact<br>• Eye contact<br>• Inhalation<br>• Ingestion | • Acute: Central nervous system effects. Chemical pneumonitis if aspirated into the lungs.<br>• Chronic: Benzene is a confirmed carcinogen. Long term exposure caused kidney and liver cancer in rats/Chemical. | • Eyes: Irrigate immediately.<br>• Skin: Flush with soap and water. • Inhalation: Remove the victim to fresh air and provide respiratory support if needed.<br>• Ingestion: Seek medical attention. | 300ppm | 500ppm STEL |

| HAZARD SUMMARY FOR CHEMICALS BROUGHT ONSITE | | | | | |
|---|---|---|---|---|---|
| Substance | Route of Entry | Exposure Symptoms | Treatment | 8 Hour TWA | STEL and IDLH |
| Sodium Hydroxide | • Skin contact<br>• Eye contact<br>• Inhalation<br>• Ingestion | • Irritation to eyes, skin, mucus membranes.<br>• Swelling of larynx and accumulation of fluid in the lungs.<br>• Stridor, vomiting, drooling, and abdominal pain are early symptoms of sodium hydroxide ingestion. Ingestion may lead to perforation of the gastrointestinal tract and shock. | • Eyes: Irrigate immediately.<br>• Skin: Flush with soap and water.<br>• Inhalation: Remove the victim to fresh air and provide respiratory support if needed.<br>• Ingestion: Seek medical attention immediately. | 2 $mg/m^3$ | 10 $mg/m^3$ |
| Sodium Hypochlorite | • Skin contact<br>• Eye contact<br>• Inhalation<br>• Ingestion | • Irritation to the skin and eyes with possible eye damage.<br>• Can cause headache, dizziness, nausea, and vomiting | • Eyes: Irrigate immediately.<br>• Skin: Flush with water.<br>• Inhalation: Remove the victim to fresh air and provide respiratory support if needed.<br>• Ingestion: Seek medical attention. | 0.5ppm | 10ppm |
| Sulfuric Acid | • Skin contact<br>• Eye contact<br>• Inhalation<br>• Ingestion | • Irritation to the eyes, skin, nose, and throat.<br>• Can cause pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatitis; dental erosion; and dermatitis | • Eyes: Irrigate immediately.<br>• Skin: Flush with water.<br>• Inhalation: Remove the victim to fresh air and provide respiratory support if needed.<br>• Ingestion: Seek medical attention immediately. | 1 $mg/m^3$ | 15 $mg/m^3$ |

## GENERAL PHYSICAL HAZARDS AND STANDARD PROTECTIVE MEASURES

**Activity:** *All General Work Activities* (manual ground laboring, operating equipment, supervising, inspecting).

**Potential Hazard:** noise, slips, trips and falls, struck by, pinched, falling debris, shock, heat/cold stress.

**Procedures to Mitigate Hazard:** Minimum standard site required PPE (Level D ANSI rated hard hat, eye protection, safety boots, high visibility traffic vest or equivalent clothing, cut/abrasion resistant gloves. Hearing protection (when "you need to raise your voice to hear yourself talk") is required whenever using powered hand tools, when operating heavy equipment with no enclosed cab or near loud noise sources. Inspect work area for hazards, overhead power lines, obstructions, slip,

trip, fall hazards, uneven surfaces, and vermin. Manage work area; flag, mark, delineate and cover, identify with appropriate hazard warning signs. Clearly label open pits, wells and other fall hazards (soft barricade 15 feet back, hard barricade 2 feet back). Practice extreme caution in all work areas including vegetation covered areas. Watch footing during equipment access/egress and when moving through the work area, walk with purpose, pick feet up and setup down, keep hands out of pockets, use handrails, stay on designated paths, and don't take short cuts through the site. Avoid stepping or standing on uneven or unsteady surfaces. In high heat situations stay well hydrated. Personnel will adhere to the heat and cold stress precautions provided in this HASP. All employees have stop-work responsibility and authority for safety concerns.

**Activity:** *Manual Material Handling*

**Potential Hazard:** Strain, pinched, struck by, lacerations,

**Procedures to Mitigate Hazard:** Hands and feet clear of pinch points, standard site required PPE and gloves with hazard exposure (i.e., barrier gloves), Observe the OSC lifting program (50 lbs. maximum on this project). Use good body mechanics when lifting, lift objects with your legs and not your back, keep the back straight and object lifted the power zone. Do not twist, pick your feet up and turn. Utilize equipment whenever possible - forklift, drum cart or other appropriate equipment. Seek assistance if it is needed.

**Activity:** *General Traffic from Operations* (heavy equipment, trucks, pedestrian, etc.)

**Potential Hazard:** Struck by, crush, fire, and burn.

**Procedures to Mitigate Hazard:** Standard site required PPE. Traffic barricades and directional signs provide ground spotters/flagman equipment traffic, with high visibility, traffic vests or equivalent clothing. Minimum 35 ft. clearance from heavy equipment operations, leveling, compacting, separating, and loading out. Develop and implement a traffic control program when site activities occur adjacent to non-OSC vehicular traffic.

**Activity:** *Site Maintenance, Materials Storage and Housekeeping*

**Potential Hazard:** Slip, trip, fall, fire, burn, chemical hazards, eye, skin, struck by

**Procedures to Mitigate Hazard:** Personnel will properly store all equipment. Remove all scrap material from the work area and place it in designated storage/lay down areas for disposal. Delineate work areas and identify with appropriate Hazard Warning Signs. Handling of materials per products SDS and developed proper storage of all flammable and combustible materials; > 20 feet from ignition sources or protected with ½ hour fire barrier (indoors). Likewise, all flammable/combustible liquid will be segregated from the ignition source >20 ft. Store all hazardous materials in approved containers. Keep all solvent waste, oily rags, and liquids in fire resistant containers. One 20 lb. ABC Extinguisher should be provided in storage areas (within 75 ft. away no closer than 20 ft.).

**Activity**: *Operation of Hand or Power Tools*

**Potential Hazard:** Eye, hand, face, foot injuries, electrocution, noise, fire, burn.

**Procedures to Mitigate Hazard:** Tool use per Mfg.'s guidelines. Inspect tools before use; verify that guards and safety devices are in place before, during and after operation. Only use a power tool that you have been trained to use. Use GFCI plugged in at source for all corded tools. Red tag and remove all defective tools from service. Maintain and inspect the tools per the manufacturer's recommendations. All personnel will utilize the proper eye protection and hearing protection.

**Activity:** *Operating Heavy Equipment* (Excavators, Compactors, Dozers, Skid Steers, Rough Terrain Fork Trucks, Powered Aerial Platforms and Trucks)

**Potential Hazard:** Struck by, caught between, crushed, rollover, fire, burn.

**Procedures to Mitigate Hazard:** Equipment operation only by trained and authorized operators. Before use, any machinery or mechanized equipment will be inspected by a competent person and certified to be in safe operating condition. OSC will designate competent persons to be responsible for the inspection of machinery and equipment, daily and during use, to ensure its safe operating condition. Any machinery found to be unsafe will be dead lined; its use will be prohibited until the unsafe conditions have been corrected. Inspection of the machine/equipment will be conducted at the beginning of each shift, during which the equipment may be used, to determine that the brakes and operating systems are in proper working condition. All inspections will be documented. Only designated personnel, with appropriate training and authorization shall operate machinery and mechanized equipment. Any observed equipment deficiencies that will affect their safe operation will be corrected before continuing operations. A controlled work zone shall be established for demolition, sorting and loading operations. Likewise, a trained ground spotter shall be provided to assure personnel stay clear when an operator's rear view is obstructed. Dust control measures (active water misting during intrusive activities with water hose or equivalent misting equipment). Utilize the appropriate warning signs and backup alarms. All site personnel working near heavy machinery will use reflective clothing (i.e., vests) to alert the operator of their whereabouts. See appropriate AHA for details (hoisting, heavy equipment operation, etc.).

**Activity:** *Excavating and Working in Excavations*

**Potential Hazard:** Cave in, collapse, chemical exposure, struck by, entrapment.

**Procedures to Mitigate Hazard:** Per OSHA requirements, provide protective systems of trenches when deeper than 5 feet and entry is necessary. Inspect the excavations/trenches regularly for changing conditions. Ensure that the material from the excavations/trenches is being placed away from the edge, to prevent cave-ins and pit (instability (> 2 feet back). Backfill the excavations as required by the approved contract requirements, to minimize the number of open excavations and control zones.

All excavation work shall be supervised by a competent person who will determine what protective measures are required, what those controls will be and how they will be implemented (testing, monitoring, benching, sloping, shoring, means of egress, dewatering, etc.). The competent person will inspect the excavations and controls to ensure reinforced structures are barricaded or marked, with barricade tape or traffic cones, during active excavations. If an excavation must remain open prior to backfill, those excavations must be fenced or barricaded (> 6 ft. from edge). Compliance with OSHA 29 CFR 1926 Subpart P will be maintained.

Atmosphere monitoring will be conducted prior to entry and during work activities in excavations/trenches.

**Activity:** *Working Around or Near Utilities* (Utilities hazards overhead and or underground)

**Potential Hazard:** Stored Energy Hazards (electrical, gas, water, sewer, etc.)

**Procedures to Mitigate Hazard:** Request utility mark out, notify FPO utility authority a minimum of three days prior to performing any intrusive or demolition activities. Prior to work beginning, ensure that all utility lines are not energized. Stay a minimum of 10-feet away from energized lines.

**Activity:** *Servicing Equipment*

**Potential Hazard:** Uncontrolled release of hazardous energy (electrical, mechanical, kinetic, pressure, heat, chemical, any type of stored or potential energy).

**Procedures to Mitigate Hazard:** The lock-out/tag-out procedure provided in this HASP will be followed when working on machines and equipment in which the unexpected energizing / start-up of the machines or equipment, or release of stored energy could cause injury to employees.

**Activity:** *Working from Elevated Heights* (> 6 feet) with an open edge to the next lowest.

**Potential Hazard:** Fall

**Procedures to Mitigate Hazard:** All work from elevated heights shall be performed as supervised by a competent person. In all cases proper fall protection shall be utilized, use personal fall restraint systems, and maintain 100% tie-off.

**Activity:** *Demolition of Structures and Tanks*

**Potential Hazard:** Unintended explosion, crush, premature collapse, propelled debris, contamination spread (i.e., asbestos, silica).

**Procedures to Mitigate Hazard:** Only qualified, competent personnel to oversee and manage demolitions (mechanical and energetic). Engineering Survey to be completed for each building prior to start of demolition to ensure utilities have been air gapped and all hazardous, and universal waste has been removed. Maintain strict control over entry/egress of well demarcated work and exclusion zones. Extended buffer zone to be established and maintained around all demolition. JHA for demolition work has been completed, reviewed, and signed off by designated work crew.

## BIOLOGICAL HAZARDS

### *Bites and Stings*

Animal bites, such as from coyotes, or stings which are usually irritants that cause localized swelling, itching and minor pain and can be handled with first aid treatment. The bites of certain snakes, lizards and spiders can contain sufficient poison to warrant medical attention. Diseases that may require medical attention can be transmitted from some animal bites. Examples are rabies (mainly from dogs, skunks, racoons, and foxes), Lyme disease (transmitted from ticks) and encephalitis (transmitted from mosquitoes).

Personnel with known allergic reactions to bee stings should carry the appropriate medication and must notify the Director HS&E and HSO of his/her condition prior to reporting for work at the site.

*Ticks, Chiggers and Lyme disease*

Ticks and chiggers may be present in vegetated areas during the spring, summer and fall seasons. Preventative measures include protective clothing that covers the entire body, tucking pant legs into boots or socks and tucking a long-sleeved shirt into pants; head/hair protection; and the use of insect repellant containing DEET on all exposed areas and coveralls. Project personnel should check their bodies thoroughly for ticks and should bathe soon after returning home. Remove any ticks carefully, using a gentle firm, tugging motion with fine tweezers. If site employees feel they have been bitten, they should notify the HSO immediately.

*Snakes (WNY has no poisonous snakes)*

If project personnel encounter a potentially dangerous snake – stop work, remove yourself and other workers from the immediate area and notify the Superintendent. The supervisor will contact an appropriate site representative to request that the hazard be removed. Do not re-enter the work area until you have been cleared by the HSO to do so.

*Toxic Plants*

Poison Ivy, poison sumac and poison oak may be present during the spring, summer and fall seasons. Avoid contact with these plants. If a project worker has come in contact, the affected area should be washed thoroughly with soap and cool water. Notify the HSO immediately.

*Bloodborne Pathogens*

29 CFR 1910.1030 requires that all first aid responders who may encounter potentially infectious materials be trained and protected from exposure. Furthermore, there is a risk for any site employee to be exposed to discarded needles and/or contaminated sharps.

All employees on this project will.

- Avoid contact with any blood or potentially contaminated object.
- Use caution when picking up or moving objects (stones, brush, debris, etc.).
- Wear leather gloves and do not touch suspect objects.

In addition to the above requirements, the following will apply.

- All personnel will be required to receive bloodborne pathogen awareness training.
- No eating, drinking, smoking, or applying lip balm will be permitted in the designated work area, decontamination area, and first aid area.
- First aid kits will be equipped with the proper PPE and supplemental kits will be supplied with barrier protection devices (i.e., gloves, CPR shields and respirators).

- If a garment (gloves included) is contaminated by blood or other potentially infectious materials, the garment(s) will be removed as soon as possible.
- After an exposure incident, a confidential medical evaluation and follow-up will be conducted and made available to the employee immediately upon receipt. The HSO will coordinate all medical arrangements.

*Radiological Hazards*

No radiological hazards are expected during this project.

# SITE SECURITY

All onsite personnel and visitors will be required to sign-in and sign-out, at the guard shack and are to check in at the project field office, before entering designated work sites. OSC will maintain, onsite, all records of site access. Visitors will be required to be knowledgeable of and conform to this SSHASP prior to accessing work zones. Vehicular traffic will be permitted in the designated parking area as permitted by the owner. Access to the controlled work and traffic zones is restricted to authorized vehicles only.

## SITE LAYOUT

See project specific work plans prepared separately and maintained in the office.

## BUDDY SYSTEM

Working alone is prohibited. All field personnel will be assigned a co-worker who will watch for hazards or problems his/her co-worker might encounter. Communication between employees must be maintained always. Workers will pre-determine hand signals, or other means of emergency signals, for communication when respiratory protection or distance makes communication difficult. Visual contact must remain between the two co-workers; they must remain near each other in order to assist in case of an emergency.

## SITE COMMUNICATIONS PLAN

Each work crew, operator and manager will be equipped with a two-way radio. In the event of an emergency, and two-way radio communication is not available, oral and visual safety signals have been established to protect project personnel. These signals will be presented to personnel for all phases of operation before conducting any task. These safety signals will ensure quick communication during adverse or emergency situations. Examples of established signals, and their meanings, are provided below.

| Visual Signal | Indication |
|---|---|
| Hand gripping throat | Out of air, can't breathe |
| Wave hands over head from side to side | Attention: stand by for next signal |

| | |
|---|---|
| Swing hands from the direction of person receiving the signal to directly overhead and through a circle | Come here |
| Pointed finger with extended arm | Look in that direction |
| Grip partner's wrist with one or both hands | Leave the area immediately |
| Hand on top of head | Need assistance |
| Thumbs up | Ok, I'm alright, I understand |
| Thumbs down | No, negative |
| **Audio Signal** | **Indication** |
| Short blast of air or vehicle horn | Caution look here |
| Three long blasts of air or vehicle horn | Leave the area |

# PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE will be selected, used, maintained, and stored in accordance with OSHA 29 CFR 1926 Subpart E, and applicable manufacturer recommendations. Engineering, administrative and/or work practice controls to minimize hazards will be implemented where feasible, followed by PPE.

## MINIMUM LEVELS OF PROTECTION

Level D personal protective equipment that is to be worn always by project personnel at the site includes.

- ANSI approved safety glasses with side shields.
- Leather safety boots (ANSI or ASTM)
- Rubber boots w/wet hazards or disposable booties as required per task.
- Hardhat (ANSI Rated)
- High visibility vest or equivalent high visibility clothing
- Appropriate clothing (long sleeve shirts and pants) and Tyvek coveralls as required per task.
- Gloves (leather always), nitrile as required.
- Hearing protection (around powered equipment or using powered hand tools)
- Tick protection when grubbing.

Modified D PPE will be used when the possibility of dermal hazardous chemical contact, but not inhalation exposure exists and includes.

- The above minimum PPE
- Mono-goggles with face shield in chemical splash situations
- Impermeable chemical barrier gloves (i.e., nitrile) if handling contaminated material
- Coated disposable coveralls (Tyvek or equivalent) if exposure to hazardous chemicals exists.
- Face shield and safety glasses with work where the potential for flying debris hazards is present (i.e., chipping, grinding, steel on steel impact activities)

Level C PPE will be used if there is the possibility of inhalation of hazardous concentrations (or unknown concentrations) of vapors or fumes at or above OSHA PELs. Level C PPE includes:

- Modified level D PPE
- Air purifying respirator (half-face)
- Appropriate filtering media (particulate, mercury, organic, or combination cartridge)

NOTE: OSC employees are given the option of using an air purifying respirator for voluntary use.

Level B is not anticipated for this project but may be made available if necessary.

Levels D and Modified Level D are the anticipated PPE during this project. These minimum levels of protection are considered preliminary and may change based upon initial exposure assessment and routine assessments as work progresses. No change to the specified level of protection will be made without the approval of the HSO and in agreement with the Director HS&E.

## SELECTION OF PROTECTION LEVELS

PPE will be used when project and support activities involve known, or suspected, contamination; when vapors, gases or particulates may be generated by site activities; or when direct contact with skin may occur. Respirators protect the lungs against airborne toxicants. Chemical resistant clothing protects skin from contact with harmful and absorbable chemicals.

Level D: Protection will be used when no airborne contaminant exposure is likely and job functions do not require the use of respiratory equipment or chemical resistive clothing. The equipment for this level of protection is described above and is expected to be the minimum for the project.

Level D Modified: Protection will be modified when additional contact hazards have been identified such as splash hazards and contaminated or nuisance dust. See the description above.

Level C: Protection that will be provided when airborne contaminants have been identified and which requires the use of air purifying respiratory equipment to keep exposures below health-based limits. Examples of respiratory protection for this project are half or full-face air purifying respirators with appropriate cartridges (i.e., P-100 cartridges for lead particulate, Black Organic Vapor – VOC, Brown/Gold Acid Gas, etc.). Likewise, excavation work may require an approved P100/vapor combination cartridge.

Level B: Protection that will be provided when the highest level of respiratory protection is needed with partial body or skin protection. Equipment for this level of protection will include a minimum of the following:

- SCBA, PAPR or airline respirator depending on the contaminate and situation.
- Chemical resistant protective clothing for hazards identified.
- Hardhat or helmet for hazards identified.
- Chemical resistant gloves with liners for hazards identified.
- Chemical resistant safety shoes or boot covers for hazards identified.

Level B is not expected for this project.

## HEARING PROTECTION

Project personnel will be provided hearing protection and required to use it whenever conducting tasks where exposures may exceed 90 dB as indicated in the following table:

| | Equipment | Sound Level at Operator Average, dB | Range | TWA, dBA |
|---|---|---|---|---|
| | ***Earth Moving:*** | | | |
| | Front End Loader | 88 | 85-91 | |
| | Backhoe | 86.5 | 79-89 | |
| | Bulldozer | 96 | 89-103 | |
| | Roller | 90 | 79-93 | |
| | Scraper | 96 | 84-102 | |
| | Excavator | 86 | 83-92 | 89.6* |
| | Truck | 96 | 89-103 | |
| | Paver | 101 | 100-102 | |
| | ***Power Units:*** | | | |
| | Generators | <85 | | |
| | Compressors | <85 | | |
| | ***Impact:*** | | | |
| | Pile Driver (diesel/pneum.) | 98 | 82-105 | |
| | Pile Driver (gravity) | 82.5 | 62-91 | |
| | Pneumatic Breaker | 106 | 94-111 | |
| | Hydraulic Breaker | 95.5 | 90-100 | |
| | Pneumatic Chipper | 109 | | |
| | ***Other Equipment:*** | | | |
| | Compactor/Vibrator | 94.5 | 85-98 | 86.1 |
| | Compressed Air Blower | 104 | | |
| | Power Saw | 88.5 | 78-95 | |
| | Electric Drill | 102 | | |
| | **Noise Standards** | | **Noise Level** | |
| | OSHA (at worker's ear) | | 90 dB (A) TWA | |
| | Day Time Community (at property line) | | 65 dB (A) | |
| | *Open windows | | | |

OSC has monitored sound levels for various tasks and operations conducted during the project to verify that the levels cited above are accurate and to serve as exposure indicators. Sound levels have been measured for each task or operation reasonably expected of having noise levels that could result in exposures above 90 dB as an 8-hr. TWA. Regardless of the results however, OSC employees will be required to use hearing protection under pre-defined conditions.

Hearing protection will be required whenever an employee is either using a powered tool or working near loud noises (excavators, sheet driving, or working in heavy equipment with windows open). Hearing protection may be obtained from the HSO. Each employee is responsible for wearing hearing protection when required. Replacements may be obtained from the HSO, if necessary. Employees are encouraged to use hearing protection voluntarily if communications are not compromised.

## RESPIRATORY PROTECTION

Project personnel may be required to use respiratory protection to reduce their exposure to airborne hazardous substances. The standard requirements that determine the selection and use of respirators depend on the hazards present. Respirators will also be made available, at the project office, for emergencies.

Only respirators that are approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupation Safety and Health (NIOSH) are allowed. Use must follow the regulatory requirements set forth by OSHA 29 CFR 1910.134 and OSHA 29 CFR 1926.103.

OSC employees may voluntarily use a filtering facepiece in conditions when respiratory protection is not mandatory. Employees that are medically cleared to use an APR may wear any type of respirator voluntarily.

### *Medical Clearance & Fit Testing*

All personnel that are assigned to tasks where a respirator is needed, must have prior medical clearance. Medical evaluations and fit testing are provided by OSC. Fit test records and all project personnel medical documentation will be filed and maintained onsite, by the HSO.

Medical limitations and restrictions will be strictly enforced. No employee will be permitted to use a respirator if he/she has any facial abnormality or facial hair that may affect the fit or seal of their respirator.

### *Training*

All personnel who are required to wear a respirator will receive training (in addition to required annual training) from the HSO on the use, maintenance, proper care, and inspection of their respirators. Attendance at all training will be documented. Attendance records will be maintained onsite by the HSO and will be available for inspection upon request.

*Inspection*

All respirators to be used at the jobsite will be inspected for damage by the employee, prior to use. After they are trained, every employee will be responsible for the inspection of their own respirator. The following elements will be inspected:

- Tightness of the connections
- Face piece
- Headbands
- Inhalation valve
- Cartridge or filter fittings
- Signs of deterioration

Any malformation, distortion, missing parts, cracks, etc. in the respirator will cause the equipment to be deemed useless until a qualified technician can properly repair the respirator. If necessary, a new respirator will be issued.

*Respirator Type*

The type of respirator, and who is required to wear them, will be identified on a task specific level by the HSO, in consultation with the Director HS&E, based on the type of work that will be performed and the potential for exposure to airborne contaminants.

*Standard Procedure for Use*

All personnel will adhere to the following standard operating procedure for respirator use:

- Carefully inspect the respirator prior to entering potentially contaminated work areas.
- Conduct positive and negative pressure leak tests each time the respirator is to be used.
- Do not remove the respirator in contaminated work areas.
- Wear a respirator with straps inside disposable garment hood (if equipped)

*Cleaning and Disinfecting*

Any reusable respirator must be cleaned after each use. The steps required to clean a respirator after use are:

- Remove the cartridge and headbands.
- Disassemble all respirator parts.
- Wash all parts, except for the cartridge and headband, in a cleaner-disinfectant solution or use soap and hot water.
- Rinse all parts completely in clean, warm water.
- Air dry in a clean, sanitary area
- Re-assemble the respirator.
- Store the cleaned respirator in a sealed bag.

*Storage*

Respirators will be stored in a sealed bag to protect against dust, sunlight, extreme temperature, moisture, and abrasives. Inhalation holes will be covered with duct tape immediately after leaving a contaminated area. The tape will be left on until the respirator is donned for the next entry into a contaminated area. This tape will prevent any contaminants from being dislodged from the cartridge. Respirators should be stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastic setting in an abnormal position. The respirator should not be hung to store or air dried by its straps.

# STANDARD OPERATING PROCEDURES (SOPs)

## GENERAL

- Ensure that all safety equipment and protective clothing is kept clean and well maintained.
- Ensure that all prescription eyeglasses are safety glasses and are compatible with respirators.
- Ensure that all disposable or reusable gloves are approved by the HSO.
- Respirator filters will be inspected daily.
- At the end of each day, decontaminate or dispose of all PPE used onsite. The HSO is responsible for ensuring decontamination before PPE reuse.
- Project personnel will have vision or corrected vision to at least 20/40 in one eye.
- Onsite personnel that are found to be disregarding any provision of this HASP will be barred, at the request of the HSO, from this project.
- Do not reuse disposable outerwear such as coveralls, gloves, and boots. Used disposable outerwear will be removed upon leaving the exclusion zone and placed inside disposable containers that are provided for this sole purpose. The containers will be stored at the project site, at the designated staging area, and OSC will arrange for the proper disposal of these materials at the completion of the project.
- When working, immediately replace protective coveralls that have become torn or badly soiled.
- Eating, drinking, smoking, chewing gum and tobacco use shall be in designated areas.
- All personnel must thoroughly wash their hands, face, and forearms prior to using the facilities, eating, drinking and smoking.
- NO alcohol, drugs (without prescriptions) or firearms will be allowed onsite at any time.

All personnel who are on medication with a safety-sensitive affect will report it to the HSO, prior to work start-up, The HSO will require a letter from the individual's personal physician stating what limitations, if any; the medication may impose on the individual.

## EXCAVATION SAFETY

OSC maintains strict procedure for soil excavations. The safety of all employees during these operations depends on the soil structure and stability, contamination, weather conditions, buried utilities and structures and superimposed loads.

When excavating within a wet, sandy area, or if the area has been backfilled at any time, it is likely to be very unstable. All personnel working in these conditions must be cautious and provide extra sloping, if possible. A change in weather conditions, such as heavy rain or snow, can loosen the soil and increase the risk of a collapse. If the area of excavation is prone to collapse precautions, such as covering the area, should be taken. Heavy equipment or materials should be kept as far away as possible from the excavation area because they can also increase the risk of collapse. All excavated soil should be removed from the rim of the area and contained if possible.

An excavation competent person must be on site anytime entry into an excavation is necessary. Any person entering an excavation must be trained in the hazards and safe work practices of excavations.

To eliminate the impact on buried pipelines or cables before any excavation begins OSC personnel will notify all utility companies to locate their lines. If such a hazard exists, the lines will be carefully marked (potting, hand digging, etc.) prior to the start of the excavation activities.

When deeper than five feet, to prevent collapsing soil the excavation must be sloped, shored, or somehow contained before any personnel may enter. A ladder will be provided for employees who are working in depths of more than four feet and spacing between will not exceed 25 feet. The ladder will not be removed until all employees have exited the excavation site.

All excavation sites will be inspected daily by an OSC designated competent person. All activity will cease if the competent person, site superintendent, and/or the HSO find the site hazardous. The competent person will make an inspection any time there is a change in conditions (i.e., weather, water, heavy equipment operation, etc.).

## EXTERIOR PRECAUTIONS

OSC requires that all exterior structures (sidewalks, bridges, etc.) be protected and clear of excavated materials. Sidewalks will be shored to carry a load of at least 125 pounds/sf. Planks, which are being used for temporary walkways, will be laid parallel to the length of the walkway, and will be fastened together. If possible, guard rails or fences will be erected to protect employees and vehicle traffic from the edge of excavation sites.

## LOCKOUT/TAGOUT POLICY

For repairs or maintenance, equipment will be locked out. This procedure ensures the health and safety of all personnel by deactivating any movable, electrical or pressurized equipment. This policy applies to all machinery or equipment that can be moved either using electrical power, hydraulic

power, compressed air, steam, or energy stored in springs/suspension devices. Damaged tags will be placed on all movable equipment and machinery.

Only project personnel and supervisors are authorized to lockout machinery/equipment. Every employee is responsible for his/her own equipment and nobody else is permitted to remove a lock or tag except the authorized employee. Any violation of this policy is cause for strict disciplinary action.

*Lockout Procedures*

Lockout devices are used to prevent the accidental re-energizing of equipment.

De-energizing Circuits and Equipment: Disconnect the circuits and equipment, to be worked on, from all electrical sources and release stored energy that could accidentally re-energize equipment.

Application of Locks and Tags: Only authorized personnel are allowed to place a lock and tag on each disconnecting – means used to de-energize the circuits or equipment before the work begins. A lock prevents unauthorized personnel from re-energizing the equipment or circuits. A tag prohibits unauthorized operation of the disconnecting device.

Verification of De-energized Condition of Circuits/Equipment: Prior to work on equipment, OSC requires that a "qualified" employee verify that the equipment is de-energized and cannot be restarted. This is typically done by a visible break in the conductors (i.e., air gap) of one foot or more.

Re-energizing Circuits and Equipment: Before circuits or equipment are re-energized, the following steps must be taken in the following order:

- A "qualified" employee conducts tests and verifies that all tools and devices have been removed.
- All exposed employees are warned to stay clear of the circuits and equipment.
- Authorized personnel will remove their own locks and tags.
- The HSO will conduct a visual inspection of the area to be sure all employees are clear of the circuits and equipment.

## ELECTRICAL

Only qualified and authorized personnel may work on or around electrical equipment. OSC personnel are not permitted to work on energized lines or equipment. Live or hot work must be contracted to a qualified third party unless specific authorization is given by the OSC President or Director HS&E. The following shall be observed:

- The working space around all electrical equipment will be large enough to permit access to all parts of the equipment. The working space will never be used for the storage of other materials so that immediate access can be gained.
- Only NEC certified electrical tools may be used.

- A ground fault circuit interrupter (GFCI) shall be utilized with all portable electric tools; plugged in at the source and tested prior to use. All electrical equipment shall be properly grounded or guarded (double insulated tools, GFCI).
- Single phase electrical tools must be plugged into properly grounded receptacles.
- The use of extension cords is discouraged. If their use is necessary, extension cords must never be used in traffic areas where they may be a hazard, or where they may become unplugged. Extension cords will always be grounded.
- Any energized electrical equipment, operating at 50 volts or higher, must be protected by a cabinet or other approved enclosure with warning signs that are immediately visible.

### FALL PROTECTION

All work from elevated heights > 6 ft. with an open edge to the next lowest level shall be performed as supervised by a competent person. In all cases proper fall protection systems shall be utilized as determined by the competent person for fall protection; restraint systems (PFRS, guard rails, and warning lines (restricted for unprotected edge work where traditional systems are not practical).

*Whenever possible, fall restraint shall be used over fall arrest*.
OSC observes a policy of 100% tie-off at all times.

## INCIDENT PREVENTION PROCEDURES

### SAFETY TASK ANALYSIS CARD

The Safety Task Analysis Card (STAC) process is a required component of all OSC projects. The STAC is a pre-printed, bi-fold card that must be completed by each employee at least once per week. The card is used by the employee as a reference tool throughout their work shift. STAC card observations are used to address new work tasks and/or potential hazards.

STAC's are used in addition to safe work permits and/or approved work procedures. The STAC is designed to be an ongoing learning tool. By breaking jobs into small parts, workers can identify hazards and eliminate or control them. It is intended as a tool to help employees make observations and correct fellow employee at risk behaviors.

The STAC must be completed by each employee at least once per week. This is the minimum requirement. Project personnel found participating in or observing risky actions without submitting a properly completed STAC will be re-trained on the need to do so.

Project supervisors and/or the HSO will review submitted STACs with employees during tailgate safety meetings and identify corrective actions.

## FIRE PREVENTION and PROTECTION

Emergency response and contingency procedures provided this SSHASP will be in effect throughout all phases of work. Included are firefighting equipment, alarm systems, the location of the closest fire departments and procedures for handling fire emergencies. Firefighting equipment will be inspected on a regular basis, maintained in proper working order, and will be in an accessible place on the site, at all times.

All heavy equipment will be equipped with a fire extinguisher unless doing so would create an undue hazard in operation or inspection of the equipment, typically this occurs only on small equipment such as a skid steer.

Fire extinguishers will be immediately available when working with or near combustible or flammable items.

A fire extinguisher, rated 2A or greater, will be provided for every 3,000 sf of protected building area, or major fraction thereof, on every floor and they will be placed no more than 100 feet from any point within the building. Fire extinguishers will be placed adjacent to stairways in multi-story buildings. This condition is not expected on the project.

## SITE HOUSEKEEPING

The following housekeeping guidelines apply at this site:

- All excess material and debris will be kept clear from all working areas.
- Combustible materials will be removed at regular intervals and all wastes will be properly disposed of at frequent intervals.
- Containers will be provided for the collection and separation of all discarded materials and refuse. Covers and identification will be provided for all containers used for flammable or harmful substances.

## MECHANICAL EQUIPMENT

The following guidelines apply when dealing with the inspection and operation of all mechanical equipment:

- All vehicles and equipment used on the site must be checked at the beginning of each shift to assure that all parts that affect safe operation are in proper working condition and are free from defects. An inspection form must be completed and filed with the HSO.
- Personnel will not be permitted to operate equipment when there is an obstructed view to the rear or sides unless there is a spotter.
- Employees will not work or walk under or between any equipment that had parts which are suspended or held aloft unless/until the parts are substantially blocked to prevent falling and shifting.

- Hydraulic leaks must be addressed immediately by stopping the equipment, preventing further leaking and cleaning any hydraulic fluid spills/leaks. Notify the HSO immediately for proper corrective actions to be determined.

## HIGH PRESSURE WASHERS

*OSC* requires that only trained and authorized personnel operate high pressure washers. This policy is intended to protect both *OSC* employees as well as any property where the equipment will be used. The following guidelines apply:

- The lance must always be pointed at the specific work area.
- Personnel will remain at least 25 feet away from the washer and the item being washed.
- Care should be taken to ensure the proper footing of the operator.
- The operator will wear the following personal protective equipment: Hard hat with face shield, goggles, safety boots with metal foot and shin guards, hearing protection, PVC rain or chemical resistant suit and heavy gloves; as well as any additional equipment to protect against chemicals, as needed.
- OSC requires that all operators be trained in the emergency shutdown procedures and general equipment maintenance of high-pressure washers.
- Under no circumstances will an operator be allowed to make modifications to a power washer.

## VEHICLE and EQUIPMENT SAFETY

Only trained and qualified personnel may operate equipment and vehicles. This policy is intended to protect all employees and client properties. The guidelines for this policy are as follows.

- Each unit is to be inspected prior to its use on site, documented, and then inspected periodically depending on the equipment involved and the manufacturer's specifications.
- No repair work, or refueling, will be done while the vehicles or equipment are in operation. The engine is to be turned off and all buckets, blades, gates, or booms must be lowered to the ground, or a substantial support.
- Equipment backup alarms must be operational and audible over the surrounding noise levels. If this is not the case, an assistant must be assigned to the operator, and he/she will be required to clear the way.
- Only authorized personnel are permitted to ride in company vehicles and equipment.
- Under no circumstances will an employee be permitted to get on or off a moving vehicle.
- Operators must wear the following PPE: Boots/sturdy work shoes, ear protection devices when the noise level is excessive (see hearing protection section), heavy work gloves. Hardhats and safety eyewear with side shields are required whenever outside of an enclosed cab. Safety glasses and hearing protection are required when cab windows are open.
- The operator must always wear seatbelts.
- To ensure the proper visibility all windshields, side windows, mirrors and lights will be cleaned as often as necessary.

*Trucks*

The following guidelines apply to truck operators:

- A current driver's license must always be carried.
- Drivers will check loaded material to ensure against loss or shifting during transit.
- All DOT regulations will be followed.
- When towing trailers, safety chains (grade 70) must be used.
- Non-OSC drivers must receive site-specific instructions upon arrival such as remaining in the truck, where to tarp loads, required PPE if allowed to exit truck, proper entry procedures, etc.

*Heavy Equipment*

OSC has the following requirements for operating front end loaders, excavators, dozers, and tractors:

- Prior to their use onsite, the equipment's brakes, cables and hoses must be checked and in good working order.
- When the equipment is moving, all blades, buckets and bowls will be carried close to the ground but high enough to avoid any obstacles on the ground. If not in motion, they must be lowered to the ground or to a substantial support.
- No employees are permitted to ride on a boom, bucket, bowl, or any other heavy equipment extension.
- All safety equipment must be properly installed, and in good working condition, before a piece of equipment is used on this project.

## SANITATION

Except for mobile crews having transportation readily available, all work sites will have toilets provided that adhere to the following requirements: One toilet for 20 or less employees; one toilet seat and one urinal per 40 employees; if there are 200+ employees, one toilet seat and one urinal per 50 workers.

Adequate washing/showering facilities will be provided on site where there are harmful substances, and they will be near the site. An acceptable supply of potable water will be provided onsite, and it will be clearly marked as such. Portable water containers will have tightly sealed tops and a tap.

## DAILY INSPECTIONS

The HSO will monitor jobsite hazard mitigation through inspections at the start and throughout each workday. Results of these daily inspections will be recorded in a daily safety log.

Any safety violations will be recorded and corrected by the Project Manager. All observed safety violations will be immediately corrected, explained to the person responsible, and reviewed at the next safety meeting. If an employee has excessive violations of the site safety rules, it will be

grounds for disciplinary action which could lead to; termination of OSC personnel or expulsion if an onsite subcontractor personnel.

## INCIDENT REPORTING

OSC will prepare and maintain (on site) incident reports that include corrective actions. These reports will be provided within 48 hours of the incident if needed. Each incident report will be reviewed by the OSC Director HS&E. Verbal notification shall be within 2 hours.

Any occupational incident, which results in the death of one or more employees will be reported to OSHA within 8 hours. The inpatient hospitalization of an employee and all amputations or loss of an eye will be reported within 24 hours. All such incidents will be reported by OSC to the nearest OSHA Area Director during normal business hours or at the National Hotline (800-321-OSHA (6742).

In addition to OSC's internal reporting requirements, requires all incidents (adverse events) to be investigated and based on the severity, requires notification of the incident within specified timelines. Adverse events are divided into three tiers: Tier 1 events are the most significant and serious events, followed by Tier 2, which are significant events but not as serious as Tier 1 events, and Tier 3 events are essentially all other events that do not meet the criteria for Tier 1 or Tier 2 events. Tier 1 events are to be reported within 2 hours, Tier 2 events are to be reported within 24 hours, and Tier 3 events are to be reported when possible.

Adverse events include the following:

### Tier 1:

- A release to air, water or soil that has an actual or potential off-site adverse environmental impact.
- One or more on-site fatalities.
- Three or more employees, contractors, or visitors are admitted to a hospital.
- Any security incident that may be immediately dangerous to life or property, including fires, explosions, bomb threats, chemical release, radiation release, release of a biological or chemical agent (aerosolized or gaseous form).
- Government representatives alleging or suggesting criminal non-compliance of any kind.
- Receipt or notice of any regulatory agency directive or other type of injunctive device designed to curtail or restrict operations; and,
- Community injuries or diagnoses of illnesses allegedly associated with a company-related incident, event or release to air, water, or soil.

### Tier 2:

- Employee or contractor lost workday injuries/illnesses.
- Employee, contractor, or visitor recordable injuries/illnesses.
- An environmental excursion that does not also trigger Tier 1 reporting.
- A release to air, water, or soil that only narrowly avoided an adverse environmental impact or had the potential to be an excursion.

- Discovery of potential or actual evidence of contaminated groundwater from current or former operations that does not otherwise meet the definition of a Tier 1 Event.
- Suspicious activities in or around 3821 River Rd. Inc. facilities or processes that may present a potential security risk.
- Allegations of previously unknown health/safety/environmental effects caused by products, processes, emissions, or discharges.
- Written notification from a governmental agency alleging non-compliance of any kind.
- Proposal or imposition of a HSER fine, penalty or corrective action.
- Receipt of a non-routine request for information from a governmental agency.
- A non-routine regulatory agency inspection.
- Audits (Peer review, Self-assessments, Third party findings and recommendations)
- Significant community activism or adverse media coverage not associated with an episodic event.
- A product recall imposed by a regulatory agency.
- Transportation-related events that result in Tier 2 impacts.
- Notice of an allegation from a third party or regulatory agency of environmental impacts from operations on current or formerly operated 3821 River Rd Inc facilities.
- Demands, including voluntary agreements, to conduct a site investigation or remedial measures to respond to environmental impacts from operations on current or formerly operated 3821 River Rd. Inc. facilities.

Tier 3:

- On-site or off-site employee, contractor employee or visitor injuries/illnesses where first-aid treatment or evaluation is provided by a Medical or Para-Medical Professional.
- A regulatory agency inspection (which is not a Tier 1 or Tier 2 Event and may still be underway) with no notice of fine, penalty or corrective action.

Adverse events must be reported to the PM, OSC Safety Director, and the INVENTUM engineering manager, as soon as possible following the event. All Tier 1 and Tier 2 adverse events must be investigated. A written OSC incident investigation report shall be completed within 48 hours.

# MEDICAL SURVEILLANCE

## MEDICAL EXAMINATIONS

OSC field personnel are provided with a thorough, initial medical examination to assess fitness for the project and to provide baseline health data for subsequent reference. Examinations are conducted by a qualified health care provider and repeated annually (unless abnormal test results, annual “questionnaire” answers or other problems dictate more frequent observation). A copy of the physician’s statement certifying each employee’s ability to work at task specific operations will be maintained in the project file by the HSO.

During the medical examination employees will be evaluated for their ability to wear respiratory protection. This evaluation will include, at a minimum, an examination of the cardiopulmonary

system; including forced vital capacity (FVC) and forced expiratory volume C 1 second (FEV 1.0). When indicated by the physician, other tests of the respiratory and cardiovascular systems will be performed on the basis of an individual's past history, findings of the above below evaluation, and/or the type of equipment the individual may be required to use.

Following is an example of a baseline yearly medical examination:

| Medical Monitoring Protocol | | | | |
|---|---|---|---|---|
| **Exam Components** | **Baseline** | **Annual** | **Interim** | **Exit** |
| Vital Signs | Yes | Yes | Yes | Yes |
| Vision Screening (Includes Peripheral and Color) | Yes | Yes | Yes | Yes |
| Urine Drug Screen | Yes | Yes | As needed | As needed |
| DOT hearing | Yes | Yes | No | Yes |
| Spirometry | Yes | Yes | Yes | Yes |
| Chest X-Ray (asbestos work only) | Yes | 3 | No | 3 |
| Review of History | Yes | Yes | Yes | Yes |
| Physical Exam | Yes | Yes | Yes | Yes |
| **Notes:**<br>Only do an X-ray if not done within the last 3 years<br>For medical indications only | | | | |

NOTE: Any employee who develops a lost time injury or illness during the period of this contract will be evaluated by the OSC medical consultant. The project supervisor will be provided with a written statement that indicates the employee's fitness and ability to return to work, signed by the medical consultant prior to allowing the employee to re-enter the work zone.

## AIR MONITORING

Lower Explosive Limit (LEL) monitoring will be conducted around any tank, vessel, or barrel containing or may have contained flammable or volatile chemicals prior to beginning work each day and or when being handled. Concentrations greater than 10% of the LEL will result in work stopping immediately for further evaluation. When LEL concentrations are zero, the HSO shall determine the need for additional monitoring.

Volatile Organic Compound monitoring (breathing zone) shall be performed when odors are detected. Monitoring will be conducted using a MultiRAE Lite with a 11.7 lamp. Work resulting in readings of 0.6 ppm or greater TWA after 15 minutes of measurement shall stop and the OSC Director, HSE contacted for further evaluation.

Before a confined space is entered, the air shall be characterized using real-time monitors for oxygen content, LEL, and other potential hazards such as carbon monoxide or hydrogen sulfide exposure.

The need for additional air monitoring or exposure measurements will be determined as specific work tasks are developed. Air monitoring and sampling shall be specified in the relevant JHA as approved by the Director HS&E.

# CONFINED SPACE ENTRY PROCEDURES

The following guidelines outline the minimum acceptable criteria that will be utilized by OSC and subcontractor personnel for all confined space entry operations.

All project specific confined space entries will be thoroughly reviewed by the designated HSO. Confined Space Permits shall be issued and approved in conjunction with the INVENTUM Project Manager. Personnel entering and working in confined spaces will be required to adhere to the OSHA Permit-Required Confined Space Standard 29 CFR 1926.1200 and the OSHA General Duty Clause. Affected project personnel are instructed in these OSHA regulations as part of the OSC employee training program.

The HSO will be responsible for reviewing the applicable entry protocol with the field team, prior to confined space entry.

## DEFINITIONS

CONFINED SPACE: There are two types of confined spaces: permit required, and non-permit required. OSHA's "PRCS Evaluation Procedures and Decision Flow Chart" will be used to evaluate the potential for permit required confined space.

PERMIT REQUIRED CONFINED SPACE (PRCS): The space contains, or has the potential to contain:

- A hazardous atmosphere. A hazardous atmosphere is defined as any space where the oxygen is below 19.5% or above 23.5%, combustible vapors are above 10% LEL, or high toxic concentrations are present which may cause death, incapacitation or an impaired ability to self-rescue.
- The space contains a material that may engulf an entrant.
- The space has an internal configuration that may trap or asphyxiate entrants.
- The space contains any other serious health, safety or environmental hazard.

NON-PERMIT REQUIRED CONFINED SPACES: OSHA defined a non-permit required confined space as a PRCS in which all serious hazards have been eliminated. Non-permit required confined spaces will be re-evaluated by the HSO using the "PRCS Evaluation Procedure and Decision Flow Chart" (see attached) whenever they or their characteristics change in a way that could lead to reclassification as a PRCS.

## PERSONNEL RESPONSIBILITIES

*Entry Supervisors*

OSC will designate an entry supervisor to oversee the confined space entry and ensure that personnel engaged in PRCS entry operations will comply with this procedure. Entry supervisors will:

- Verify that all tests specified by the permit have been conducted and that all procedure and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
- Terminate the entry and cancel the permit when the entry operations covered by the entry permit have been completed, or whenever a condition that is not allowed under the entry permit arises in or near the PRCS.
- Verify that rescue services are available and that the means for summoning them are operable.
- Remove all unauthorized individuals who enter, or attempt to enter, the PRCS during entry operations.
- Determine that the entry operations are consistent with the terms of the entry permit and that acceptable entry conditions are maintained.

*Attendants*

The entry supervisor will designate a qualified attendant for each PRCS operation. To be qualified, an attendant must know the hazards that authorized entrants may encounter during an entry (including information on the mode, signs and symptoms, and consequences of exposure) and must be aware of the behavioral symptoms of hazard exposure. Attendants will:

- Remain outside the PRCS during entry operations until relieved by another attendant.
- Warn all unauthorized entrants that they must stay clear of the PRCS, or that they must immediately exit if they have entered the PRCS.
- Inform the entry supervisor, if unauthorized personnel have entered the PRCS.
- Continuously maintain an accurate count of entrants in the PRCS and ensure that the means used to identify authorized entrants accurately identifies the entrants.
- Communicate with authorized entrants, as necessary, to monitor entrant status and to alert entrants of the need to evacuate the PRCS.
- Monitor the activities both inside and outside the PRCS.
- Immediately order evacuation of the PRCS if a prohibited condition is detected, the behavioral effects of hazard exposure in an authorized entrant are observed, or a situation outside the PRCS is found that could endanger the authorized entrants; or if the attendant cannot effectively and safely perform his/her duties and responsibilities.
- Perform non-entry rescues, as specified by the Confined Space Entry Permit; summon rescue and other emergency services as soon as it is determined that authorized entrants may need assistance to escape from PRCS hazards.

Attendants will NOT, under any circumstances:

- Perform any duty that might interfere with their primary duty to monitor and protect the authorized entrant.
- Enter the PRCS for rescue purposes.

*Entrants*

Authorized PRCS entrants will be identified on each Confined Space Entry Permit. Authorized entrants will:

- Know the hazards, including information on the mode, signs or symptoms, and consequences of exposure.
- Properly use the PPE provided for the PRCS entry.
- Communicate with the attendant, as necessary, so the attendant can monitor entrant status and alert entrants of any need to evacuate the PRCS.
- Evacuate the PRCS and alert the attendant whenever they recognize any warning signs or symptoms of exposure to a dangerous situation; or they detect a prohibited condition; or whenever the attendant or entry supervisor orders the evacuation; or when an evacuation alarm is activated.

## TRAINING

All project personnel will be instructed not to enter PRCSs without the proper permit and without following the procedure and practices outlined in this SOP and in the Confined Space Entry Permit. Personnel, who are required to enter a PRCS, or act as an attendant or entry supervisor, will be trained to acquire the understanding, knowledge and skills necessary for the safe performance of their assigned responsibilities and duties.

Entrants will receive training on:

- The means and methods used to communicate with attendants; as well as the means attendants will use to notify them of emergencies.
- The operation of any specialized equipment that is expected to be used, including monitoring and rescue equipment.
- Evacuation signals and procedures; as well as the need for entrants to notify the attendant and evacuate the PRCS if they detect any dangerous conditions.

Attendants will receive training on:

- The procedures for monitoring inside and outside the PRCS and recognizing the conditions that might be hazardous to entrants.
- Procedures for communicating with entrants.
- Procedures for evacuating entrants from the PRCS and when evacuation is required.
- Procedures for controlling access to the PRCS.
- Their responsibility to remain outside the PRCS during entry, unless they are relieved by another attendant.
- Non-entry rescue procedures.

Entry Supervisors will receive training on:

- Verifying that the Confined Space Entry Permit has been completed properly.
- Procedures for verifying that all tests specified by the Permit have been conducted.
- Requirements for verifying that all the procedures and equipment specified by the Permit are in place before allowing entry to begin.
- Procedures for determining if conditions are acceptable for entry.
- Authorizing entry operations, and
- Terminating entry.

Confined Space Training will be conducted:

- Before the employee is first assigned confined space duties.
- Before a change in assigned duties.
- Whenever there is a change in permit space operations that presents a hazard about which employee has not previously been trained, and
- Whenever project management, involved regulatory officials, or the project engineer has reason to believe that there are inadequacies in the knowledge or use of these procedures.

When complete, training will be certified by the instructor. The certification will list the names of the personnel presenting and receiving training and the dates of training. Training certification documentation will be maintained as part of the Project file kept at the site and in the individual's personnel files in the home office.

## PRCS ENTRY PROCEDURE

### *Atmospheric Testing*

Before an employee enters any confined space, the entry supervisor will test the internal atmosphere with a calibrated, direct reading instrument to determine if acceptable entry conditions exist for the following conditions, in the given order:

| | Condition | Acceptable Parameter(s) |
|---|---|---|
| A. | Oxygen Content | Above 19.5% and Below 23.5% |
| B. | Flammable Gases and Vapors | Less than 10% LEL |
| C. | Potential Toxic Air Contaminants | Below Action Levels for PPE |

Continuous systems which cannot be isolated (i.e. sewers) or activities which generate significant airborne contaminants (i.e. welding) will be continuously monitored during entry, unless forced mechanical ventilation is used and has been shown to maintain an acceptable atmosphere.

### *Entry*

The HSO will use the "PRCS Evaluation Procedures and Decision Flow Chart" to verify the presence of a PRCS. If it is determined that a PRCS does exist, the HSO will review the confined space entry procedures with entry personnel; post OSHA required danger signs at the entrances to the PRCS

and notify Project personnel of the PRCS location(s); notify offsite emergency response services of the PRCS; and prepare a Confined Space Entry Permit.

*Confined Space Permit*

The entry supervisor will be responsible for completing the Confined Space Entry Permit. All items on the Permit must be completed. The entry supervisor will verify that all entry personnel are aware of the specific hazards that are associated with the PRCS; that all necessary safety equipment and materials are in place; that all emergency response procedures are in place; and that the pre-entry air monitoring results indicate acceptable entry conditions, before signing the permit.

*Pre-entry Briefing*

The entry supervisor will conduct a pre-entry briefing with the attendants and authorized entrants to discuss the requirements of the Permit and to ensure that all involved personnel understand their responsibilities and the specific hazards associated with the PRCS. A pre-entry briefing will be conducted, for each attendant and entrant, prior to entry and whenever new hazards are identified.
Entry Authorization

The entry supervisor will sign the Confined Space Entry Permit after the Permit has been completed, all safety equipment is in place, air monitoring results are acceptable, the pre-entry briefing has been conducted and the rescue procedures have been established. Once the permit has been signed:

- Entrants will wear all necessary safety and rescue equipment.
- The Permit will be posted at, or near, the PRCS entrance, and
- Entry procedures will begin.

*Permit Exit and Cancellation*

Each Entry Permit will be valid for one shift only. Expired and canceled Permits will be returned to the Site Superintendent who will file them with the Project documents. Permits will be canceled if:

- A new hazard is identified or encountered.
- An entrant is seriously injured and requires evacuation and/or rescue.
- A change in the scope of work required new activities which may create previously unanticipated hazards that could cause serious death or injury.

## RESCUE/EMERGENCY RESPONSE

*Offsite Rescue and Emergency Services*

Offsite rescue and emergency service personnel will be informed by the HSO of the hazards they may confront when called to the jobsite to perform services. These services will be identified and notified prior to any entry. Entry will not be performed if emergency rescue services are not available. The rescue/emergency service personnel will be provided access to all permit spaces

from which the rescue may be necessary, so that the emergency responders can develop appropriate rescue plans and conduct rescue operations.

*Non-entry Rescue*
Non-entry rescues, retrieval systems or methods will be used whenever an authorized entrant enters a PRCS, unless the retrieval equipment increases the overall risk of entry or would not contribute to the rescue of the entrant.

Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level or above the entrant's head. Retrieval lines will be attached to a mechanical device or a fixed point outside the Permit space, in such a manner that rescues can begin as soon as the rescuer becomes aware of the necessity. The mechanical device will be ready to retrieve personnel from vertical PRCSs more than five feet deep.

# DECONTAMINATION PROCEDURES

Decontamination of equipment and personnel will be performed as necessary and as defined in the project scope. All equipment and personnel will be decontaminated before leaving the property.

Personnel and equipment decontamination procedures to be employed are summarized in the following subsections.

## PERSONNEL HYGENE and DECONTAMINATION

Personnel will be made aware of any personal habit that may allow contaminants into or onto their body. All personnel will check that regularly worn PPE (i.e. hardhats and liners, eye protection, etc.) is clean and in good condition. A storage area for decontaminated PPE will be provided and used outside the contaminated zone. Any products used for personal consumption are prohibited in any work area. Break areas will be limited to specific areas where eating, drinking, smoking, etc. and the storage of these materials will be allowed.

A typical personnel decontamination sequence is presented below.

- Step 1: Scrape the gross contamination from boots and outer gloves. Wash them using soap in a water solution and rinse with water into a designated container in the contamination reduction zone.
- Step 2: Remove the tape from around boots and outer gloves and deposit in a collection drum (if disposable) or store on a rack (if reusable). Remove the over boots and outer gloves and place in a collection drum (if disposable) or wash and place on a rack (if reusable).
- Step 3: Remove respirator cartridge and place in a collection drum.
- Step 4: Remove disposable coveralls and place in a collection drum. Remove boots and store them in an appropriate location. Remove disposable inner gloves and dispose of them in a collection drum.

- Step 5: Remove hardhat and safety glasses: Decontaminate as necessary (wash with sanitizing solution [MSA sanitizing solution or equivalent], rinse with potable water and allow to dry at the end of each day).
- Step 6: Remove respirator, if used, and deposit in a plastic liner. Avoid touching your face with your fingers. Respirators will be washed in a sanitizing solution (MSA sanitizer or equivalent), rinsed with portable water and allowed to air dry at the end of each day.
- Step 7: Thoroughly wash and rinse any exposed skin with water and biodegradable soap using bucket 1. Rinse in bucket 2. Re-rinse in bucket 3. Shower and launder all personal clothing as soon as possible upon completing daily activities.

Personnel hygiene, hand and face washing, and following decontamination will take place in the project support area.

## EQUIPMENT DECONTAMINATION

The HSO will be responsible for inspecting decontaminated vehicles, equipment and material contaminated work areas, to ensure proper decontamination. The users and HSO will verify that each piece of equipment utilized in the exclusion zone has been properly decontaminated.

Decontamination personnel will be required to use Modified Level D PPE as specified in this HASP. The standard operating procedure for the use of high-pressure washers, also provided, will be strictly followed to prevent injury.

## HEAVY EQUIPMENT DECONTAMINATION

As a general practice, equipment, such as excavators, bulldozers, etc. will remain within the work zone for the duration of the excavation activities. This ensures the minimization of the potential migration of contaminants outside the project limits. In addition, the sequence of excavation has been designed to avoid the movement of machinery and personnel over areas within the work zones that have been excavated.

Generally heavy equipment, and large materials used in potentially contaminated areas equipment, will be decontaminated as outlined below:

- Conduct gross removal of solids at point use.
- Degrease as necessary.
- Move to the equipment decontamination pad for decontamination via pressure washing.
- Collect and handle resultant liquids/solids.

## TOOLS and SMALL EQUIPMENT DECONTAMINATION

Tools and smaller equipment that may have come in contact with potentially contaminated materials will be decontaminated using the procedures outlined below:

- Flush and wipe components to remove debris and other gross contamination.
- Clean with potable water and non-phosphate detergent (i.e. Alconox or Liquinox) using a brush or high-pressure washer, as necessary, to remove particulate matter and surface films.

- Rinse thoroughly with potable water.
- Allow tools to air dry for a reasonable amount of time.

### NON-DISPOSABLE SAMPLING EQUIPMENT

Non-disposable sampling equipment that may have come into contact with potentially contaminated materials will be decontaminated prior to collecting each sample as follows:

- Clean with potable water and non-phosphate detergent using a brush, if necessary, to remove all visible foreign matter.
- Rinse thoroughly with potable water.
- Rinse thoroughly with de-ionized water.
- Visually inspect the openings and treads for solid materials.
- Allow sampling equipment to air dry as long as possible on a clean polyethylene sheet or aluminum foil.

### DISPOSAL of DECONTAMINATION WASTES

All equipment and solvents used for decontamination will be decontaminated or disposed of properly. All aqueous liquids generated in the personnel and equipment decontamination process will be collected, characterized and appropriately disposed of. All disposable PPR will be containerized in drums and properly disposed of.

## EMERGENCY EQUIPMENT and FIRST AID REQUIREMENTS

Emergency and first aid equipment to be maintained onsite will include the following:

- Approved, portable, emergency eye wash units in accordance with ANSI Standard Z358.1
- At least one industrial first aid kit will be provided and maintained at an easily accessible, uncontaminated location chosen by the HSO. Additional first aid kits may be provided.
- First aid and CPR kit locations will be specifically marked by the HSO and stocked with adequate water and other supplies to cleanse and decontaminate burns, wounds or lesions.
- 10#A: B: C type dry chemical fire extinguishers will be provided at all project site locations where flammable materials present a fire risk. Mobile equipment will be equipped with 2-pound extinguishers.

Agencies and medical facilities that need to be contacted in the event of an onsite emergency, as well as directions to the nearest hospital, are identified at the beginning of this HASP. The tables stating the emergency contact information and hospital location will be posted in a prominent location(s) onsite.

If a site worker becomes injured or ill, Red Cross/American Heart Association recommended first aid procedures shall be followed. First aid, or other appropriate initial reactions, will be provided by the certified first aid technician that is closest to the incident.

NOTE: When protective clothing has been grossly contaminated during an incident, contaminants may be transferred to the treatment personnel or the wearer and cause injuries. Unless severe medical problems have occurred simultaneously with splashes, protective clothing should be washed off as quickly as possible and removed. If the worker can be moved, he/she will be taken to the personnel decontamination station where decontamination procedures, additional first aid or preparation for transport to the hospital will be accomplished. In the event that the victim could not be decontaminated, the rescue service provider must be notified of the situation.

If the injury to the worker is of a chemical nature, the procedures as listed in the SDS for the chemical are to be followed. In the event the SDS is not available, such as for an unknown contaminant, the steps listed below are to be followed:

*Eye Exposure*: If contaminated solids or liquids get into the eyes, wash eyes immediately using copious amounts of water while lifting the lower and upper eyelids occasionally. Wash for at least 15 minutes. Obtain medical attention.
*Skin Exposure*: If contaminated solids or liquids get on the skin, promptly wash the contaminated skin using soap and water. Then immediately obtain medical attention.
*Respiratory Exposure*: Immediately move the victim to fresh air and obtain medical attention.
*Ingestion Exposure*: Seek immediate medical attention.

NOTE: Any person who is transported to the hospital for treatment related to an exposure injury will take with them the appropriate information (i.e. SDS) on the chemical to which they have been exposed. SDS for known or suspected chemicals to exist onsite will be stored in OSC's project field office and maintained by the HSO. Due to the nature of unknown contaminants and exact manufacturers, a proxy SDS may be used in lieu of the actual SDS as a reference only.

# MEDICAL EMERGENCY RESPONSE

## REPORTING AN EMERGENCY

The HSO will immediately notify the Site Superintendent stating the points that are listed under a minor injury. However, with a major emergency the HSO must state that this is a major emergency. Concurrently the HSO must direct that 911 be called if not already done so. The Site Superintendent will react as follows:

- Call OSC's Corporate Director HS&E
- Call the fire department (if necessary)
- Call the police (if necessary)
- Call the Project Manager

## PRE-PLANNING

Arrangements for emergency services will be made prior to initiating onsite operations. Emergency response procedures will be covered as part of the project training.

## EMERGENCY CHAIN OF COMMAND

In the event of an emergency, personnel will immediately notify the HSO, using available communications. The HSO will assess the situation and take appropriate action which can include ceasing all work; ordering evacuation of the work zone; requesting emergency medical treatment; and/or administering first aid.

## WEATHER

In the event of severe weather (lightning, high winds, etc.), the HSO will notify project personnel. As the storm approaches, all work will stop, loose objects will be secured, and site personnel will take shelter at a location pre-arranged by the HSO. After the severe weather has passed, and prior to work startup, the HSO will inspect the site for hazards.

*Lightning* – Any visual sighting of lightning will result in stopping outside work activities. Work will not commence until 30 minutes after the last observed strike.

*High Winds* – Winds higher than 30 mph will cause all exterior hoisting and lifting to cease. Crane operators have the authority to stop lifts at lower wind speeds based on their discretion.

*Project Tornado Shelter (not anticipated for this project)* - To be determined with initial hazard exposure assessments and site mobilization. All reasonable efforts should be made to access this location in the event of a tornado. Recognizing imminent tornado signs include seeing an unusually dark sky, possibly with some green or yellow clouds. You may hear a roaring or rumbling sound like a train, or a whistling sound like a jet. Large hail may also be falling. You may be able to see funnels, or they may be hidden by rain or hail.

Listen to the radio for tornado warnings during bad thunderstorms. If a tornado warning is issued, don't panic. Instead, listen and look. Quickly but calmly follow directions to get to shelter. Take cover. Indoors you should go down into the basement and crouch down under the stairs, away from windows. Do not take an elevator. If you can't get to a basement, go into a closet or bathroom and pull a mattress over you or sit underneath a sturdy piece of furniture on the ground floor near the center of the building. Pull your knees up under you and protect your head with your hands. A bad place to be in a tornado is in a building with a regular freestanding roof such as a gymnasium, arena, auditorium, church or shopping mall. If you are caught in such a building, take cover under something sturdy. More than half of tornado deaths occur in mobile homes. If a tornado threatens, get out and go to a building with a good foundation, or lay down in a ditch away from vehicles and other objects.

If you are driving, get to a shelter, lie down in a ditch or seek cover up under the girders of an overpass or bridge. Stay as close to the ground as you can. Protect your head and duck flying debris. Stay away from metal and electrical equipment because lightning accompanies tornadoes.

If you have time before the tornado strikes, secure objects such as garbage cans and lawn furniture which can injure people. While most tornado damage is a result of the violent winds, most injuries and deaths actually result from flying debris.

# SPILL CONTAINMENT PROCEDURES

The purpose of this section is two-fold; to prevent and control accidental discharge of polluting materials to surface soils and waterways (or groundwater); and to minimize and abate the hazards to human health and the environment from hazardous waste releases to air, soil or surface water. These procedures will be reviewed with project personnel prior to startup and thereafter as necessary during regular weekly HS&E meetings and daily briefings.

## EMERGENCY NUMBERS

The names and phone numbers of emergency services and offices to be contacted in the event of a spill, or any other onsite emergency, is provided in the Contact Information portion located at the beginning of this HASP. These phone numbers will be posted by the HSO in prominent positions throughout the Project site.

## DEFINITIONS

For the purposes of this plan, spoils are defined as any material that is accidentally or intentionally leaked, pumped, poured, dumped or emitted onto the ground, surface water, groundwater or air. All spilled material will be considered hazardous and be cleaned up following the established spill response procedures and reported as required.

Spills will be categorized as: Priority 1 or Priority 2.

**Priority 1 Spills**: Result in a significant release of contamination into the air, or onto the ground, outside the exclusion zone.

**Priority 2 Spills**: Result in minor spill, less than five (5) gallons and not reportable, which can be easily cleaned up.

POTENTIAL SOURCES and PREVENTATIVE MEASURES

The contracted work has potential spill sources. These include, but are not limited to:

| Potential Spill Source | Preventative Measure(S) |
|---|---|
| Transporting waste material to selected on and offsite disposal facilities | OSC will verify that all transportation vehicles used in support of this contract are equipped with the appropriate spill response equipment, and that the drivers have received the proper spill response training and maintain all the required federal and state licenses and certifications.<br>Loads will be secured, tied down, and covered, and transport vehicles will be checked prior to release from the site. |
| Re-fueling onsite equipment | OSC will prohibit the long-term storing of diesel fuel. OSC will limit the amount of fuel kept onsite to only that required for weekly equipment usage. |
| General spill prevention requirements | Easily accessible spill response stations will be set up containing absorbent pillows, floor dry, shovels and brushes to be used in the event of a spill. The location will be known to all project personnel. |

## SPILL RESPONSE PROCEDURES

*Initial Containment and Response*

In the event of a spill, the following initial containment and response procedure must be implemented immediately.

- Administer first aid to injured person(s). Any employee that observes a spill will act immediately to remove and /or protect the injured person from a life-threatening situation. First aid and/or decontamination procedure will be implemented as appropriate.
- Warn other persons and/or vehicles of the hazard. Personnel will act to prevent any unsuspecting persons from coming in contact with the spilled materials by alerting nearby people and by obtaining assistance of other personnel who are familiar with spill control and clean up training.
- Stop the spill at the source, if possible. Without taking unnecessary risks, personnel will attempt to stop the spill at the source. This may involve activities such as up righting a drum, closing a valve or temporarily sealing a hole with a plug. OSC personnel will not make more than a brief effort, prior to notifying the HSO.
- Notify the HSO. Using available onsite communication systems, or other rapid communication procedures, the HSO will be notified of the spill, including information on the material spilled, quality, personnel injuries and immediate life-threatening hazards. The HSO will notify emergency contacts immediately (See Emergency Contact List).

NOTE: If a flammable liquid is involved in the spill, remove all ignition sources and monitor for explosive conditions with an LEL meter during cleanup. Also, remove any surrounding materials that might chemically react with the spilled materials.

*Spill Containment*

The HSO will make a rapid assessment of any spill at the site; apply the appropriate HS&E considerations to the use of PPE in the spill release zone; and direct primary containment measures. Depending on the nature of the spill, primary containment measures may include, but are not limited to:

- Constructing a temporary containment berm to control the horizontal flow of the spill using absorbent pads, booms, sandbags, sand and/or other inert materials.
- Placing drums under the leak to collect the spilling material before it flows onto the ground.
- Digging a sump, installing a polyethylene liner and diverting the spilled material to the sump
- Transferring the material from its original container to another container

Spills that occur between the project site and the offsite disposal facility will be initially contained by the driver using on-board spill response equipment.

*Spill Cleanup*

The HSO and Project Manager will develop an incident-specific spill clean-up plan for Priority 1 spills that will take into consideration the associated hazards, quantity of spilled material, disposal methods and costs. The incident specific spill clean-up plan will be reviewed for acceptance by the owner representative and/or other Federal, State or Local oversight personnel. Once approved, the spill clean-up plan will be implemented under the direct supervision of the OSC site superintendent.

Generally, all visually detectable spills, leaks or releases of fuel oil will be collected and cleaned up using absorbent pads, booms, sandbags, sand and/or other inert materials as practicable using the response procedures outlined below.

| Spill Type | Response |
|---|---|
| Waste oil on the ground | Contain the spill and excavate the visually contaminated soils. Containerize, sample for classification purposes and dispose offsite. |
| Building/paved surfaces | Contain the spill. Power wash the contaminated are(s). Collect and containerize the resultant wastewater for onsite treatment. |
| Vehicle | Power wash the vehicle. Collect, contain and treat the resultant decontamination fluids. |
| Heavy Equipment hydraulic fluid leak | Stop the equipment immediately. Clean up spill and/or leaking fluid. Contact HSO for repair approach. |
| Waste from truck spilled on roadway | Contain the spilled material. Collect, containerize and remove the spilled material. Sample for waste classification purposes. Dispose of material offsite. |

*Post-spill Inspection*

The HSO, site superintendent and owner representative will jointly inspect the spill site to determine that the spill has been cleaned up to the satisfaction of all involved parties.

*Reporting*

In the event of a spill incident, the HSO will immediately contact the site superintendent and owner representative; initiate the emergency procedure steps that are provided in this HASP and complete a Spill Report for submittal to the owner representative.

OSC will be responsible for reporting any Priority 1 spills immediately following the incident. A written report will be submitted within seven days after the telephone call reporting the incident. The written report will include the item spilled, quantity, identification and manifest numbers, whether the amount spilled is EPA/State/District reportable, exact location of occurrence,

containment procedures used, anticipated clean-up and disposal procedures and disposal of spill residue.

# HEAT/COLD STRESS

## HEAT

The HSO will visually monitor personnel for signs of heat overexposure. The HSO will be responsible for implementing the following program when the ambient air temperature exceeds 85°F (heat stress monitoring).

### *Symptoms*

Weakness, dizziness, fainting, nausea, headaches, cool and clammy skin, profuse sweating, slurred speech, weak pulse and dilated pupils.

### *Procedure*

Personnel who wear PPE allow their body heat to be accumulated with and elevation of the body temperature. Heat, heat exhaustion and heat stroke can be experienced which, if not remedied, can threaten health and life. A current edition of the American Red Cross Standard First Aid book or equivalent will be maintained onsite at all times so that the HSO and all personnel will be able to recognize the symptoms of heat emergency and be capable of controlling them.

When PPE is worn (especially level C) the suggested guidelines for ambient temperature and maximum wear time per excursion are as follows:

| Ambient Temperature (°F) | Maximum Wear Time Per Excursion (Minutes) |
|---|---|
| Above 90 | 15 |
| 85 – 90 | 30 |
| 80 – 85 | 60 |
| 70 – 80 | 90 |
| 60 – 70 | 120 |
| 50 – 60 | 180 |

One method for measuring the effectiveness of employees' rest-recovery regime is by monitoring their heart as follows:

- During a 3-minute period, count the pulse rate for the last 30 seconds of the first minute, the last 30 seconds of the second minute and the last 30 seconds of the third minute.
- Double that count.
- If the recovery rate during the last 30 seconds of the first minute is at 110 beats per minute or less and the deceleration between the first, second and third minute is at least 10 beats/minute, the work recovery regime is acceptable. If the employee's rate is above the specified, a longer rest period is required as well as an increased intake of fluids.
- Onsite tracking of ambient temperature as well as pulse/temperature of the worker will be conducted by the HSO and recorded throughout the work shift.

### COLD

Whole body protection will be provided to personnel who will have prolonged exposure to cold air. The HSO will use the equivalent chill temperature when determining the combined cooling effect of wind and low temperatures on exposed skin or when determining the proper clothing insulation requirements. The following clothing will be used as deemed necessary, by the HSO.

Appropriate underclothing (wool or other cloth)

Outer coats that repel wind and moisture

Face, head and ear coverings

Extra pairs of socks

Wool glove liners or wind and water repellant gloves

Personnel who are working in continuous cold weather are required to warm themselves on a regular basis in the onsite trailer. Drinks will be provided to personnel to prevent dehydration. The HSO will follow the work practices and recommendations for cold stress threshold limit values as stated by the current edition of the Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices by the American Conference of Governmental Industrial Hygienists, or equivalent cold *stress prevention* methods.

## LOGS, REPORTS and RECORDKEEPING

The following reports will be prepared and submitted as indicated below. Copies of the field logs, permits and forms required for this project will be kept onsite for the duration of the project.

| TYPE | FREQUENCY |
|---|---|
| JHA - Pre-plan for High-Risk Work | Prior to start of work |
| Employee Daily Safety Brief, Site Log | Daily, minimum |
| Air Monitoring Reports | As necessary |
| Incident Report | As required, within 48 hours |

The above logs and reports will be prepared by the HSO, or the designated representative, at the frequency noted above. Additionally, daily logs of all personnel working or visiting the site will be maintained. Completed logs and reports will be maintained stored on site in the project field office. Copies shall be provided to the Project Manager.

## Hot Work Permit Procedures (Welding, Cutting, Open Flame Work & Sparking)

OSC will follow specific procedures to assure all hot work activities, welding, burning, cutting, sparking and other ignition source work is completed safely without incident (no fires, injuries or property damage). All hot work shall require an approved hot work permit issued by the OSC HSO prior to commencing work. The hot work permit shall define the minimum acceptable procedures and precautions that shall be taken for all phases of the hot work; prior to start of work, as well as during and after hot work is completed. A permit shall be issued daily for each specific location, type of hot work, protective measures, date, time duration and completion time. Hot work permits will be available for review. Completed and signed permits shall be returned to the HSO at the end of the workday. Copies of completed permits shall be maintained in the OSC field office for review.

*NOTE: Many of the piping, vessels and towers at the site contain flammable materials. The hot work permit procedure MUST be followed.*

## Authorization of Equipment Operators

All heavy equipment operators working on site will be approved competent either through OSC's in-house program or through local labor union process. Training requirements for approval are as follows:

### HEAVY EQUIPMENT OPERATORS

- Formal classroom with written qualification, or
- On-the-job mentoring for 40-hour minimum under a competent person, and
- Determination of proficiency by an OSC certified supervisor

The formal classroom and mentoring may be adjusted based on an operator's previous experience. In addition, operators may need to obtain state-specific crane licenses/permits.

### CRANE OPERATORS

- Formal classroom with written qualification
- Determination of proficiency by a certified operator
- On-the-job mentoring for 80-hour minimum under a competent person

The formal classroom and mentoring may be adjusted based on an operator's previous experience. In addition to the certification, operators may need to obtain state-specific licenses/permits.

# ATTACHMENT I: Forms

Ontario Specialty Contracting
140 Lee St
Buffalo, NY 14210

# PSI / JHA / SPA

| Company | Date & Time | Job No./Permit No. |
|---|---|---|
| Ontario Specialty Contracting | 02/16/2024 03:06 PM | 22010 |
| **Project** | **Task Location** | **Muster / Meeting Point** |
| Plastics | 3821 River Road | Guard Shack |
| **Job Site Address** | **Nearest Hospital** | **Nearest Hospital Address** |
| 3821 River Road | Kenmore Mercy Hospital | 2950 Elmwood Avenue |

Review these items with the crew at the site of the task and check the blocks that apply to the work.

**Environmental Hazards**

- ☐ Spill Potential/Containment
- ☐ HAZMAT / TDG Storage
- ☐ Weather / Conditions
- ☐ SDS Reviewed for Hazardous Materials
- ☐ Ventilation Required
- ☐ Heat Stress / Cold Exposure
- ☐ Lighting Levels Too Low
- ☐ Housekeeping

**Ergonomics Hazards / Material Handling**

- ☐ Working In a Tight Area
- ☐ Part of Body in Line of Fire
- ☐ Working Above Your Head
- ☐ Pinch Points Identified
- ☐ Repetitive Motion

**Work at Height Hazards**

- ☐ Barricades Flagging, and Sign in place
- ☐ Hole Coverings in Place
- ☐ Protect from Falling Items
- ☐ Powered Platforms
- ☐ Others working overhead / Below
- ☐ Fall Arrest Systems
- ☐ Ladders

**Activity Hazards**

- ☐ Welding/Grinding
- ☐ Burn / Heat Sources
- ☐ Compressed Gasses
- ☐ Working on / Near Energized Equipment
- ☐ Electrical Cords / Tools - Condition
- ☐ Equipment/ Tools Inspected
- ☐ Critical Lift Meeting Required
- ☐ Energy Isolation
- ☐ Airborne Particles
- ☐ Open Hole(s) / Leading Edge (s)
- ☐ Mobile Equipment / Vehicle
- ☐ Rigging
- ☐ Excavation / Underground Work Hazards
- ☐ Confined Space

**Access / Egress Hazards**

- ☐ Scaffold (Inspected and Tagged)
- ☐ Slip / Trip Potential Identified
- ☐ Required Permits in Place
- ☐ Excavations
- ☐ Walkways / roadways

**Personal Limitations / Hazards**

- ☐ Clear Instructions Provided
- ☐ Trained To Use Tool and Perform Task
- ☐ Distractions in Work Area
- ☐ Working Alone (Communication)
- ☐ Lift Too Heavy / Awkward Position
- ☐ External Noise Level
- ☐ Physical Limitations
- ☐ First Aid Requirements

**PPE Requirements**

- ☐ Goggles / Fectoggles/ Spoggles
- ☐ Face Shield
- ☐ Gloves (Kevlar or Leather)
- ☐ Coverall (Fire Retardant - FRC)
- ☐ Hearing Protection
- ☐ Respirator
- ☐ Harness / Lanyards
- ☐ Reflective Vest
- ☐ Footwear (Condition / Application)
- ☐ Safety Glasses
- ☐ Welding Hood
- ☐ Tyvex Suit
- ☐ Retractable Lanyard
- ☐ Hard Hat
- ☐ 4 Gas Monitor
- ☐ Cut resistant sleeves (Kevlar or Approved Equivalent)

**Other**

**Risk Rank Table/*Nivel de Riesgo***

| RISK OUTCOME/*RIESGO* | Risk Rank |
|---|---|
| High/*Alto* | (8-10) |
| Significant/*Significante* | (6-7) |
| Moderate/*Moderado* | (5) |
| Low/*Bajo* | (2-3-4) |

| | | Consequence/Consecuencia | | | | |
|---|---|---|---|---|---|---|
| | | Insignificant/*No Importante* 1 | Minor/*Menor* 2 | Moderate/*Moderado* 3 | Major/*Mayor* 4 | Catastrophic/*Catastrofico* 5 |
| Likelihood/*Probable* | Almost Certain/*Casi Cierto* 5 | 6 | 7 | 8 | 9 | 10 |
| | Likely/*Probable* | | | | | |



Identify the task steps and hazards, and then identify the plans to eliminate or control the hazards

| TASK STEPS | HAZARD | CONTROL | RISK RATING |
|---|---|---|---|
| General site tasks (including maintenance of facility, site clean up, equipment maintenance, site review) | - Slips/trips/falls<br>- Strain/sprain<br>- Struck by / Crush<br>- Pinch points<br>- Driving onsite | Maintain clean and designated pathway to and from work area<br>- Use proper lifting techniques, use equipment for lift when possible, team lift over 50 pounds<br>- Maintain contact with operators in work area, notify when approaching work zone<br>- Stay clear of swing radius of equipment<br>- Identify pinch points and keep hands clear<br>- Conduct equipment inspection<br>- Use equipment and tools as manufacturer intended | 3 |
| Equpment repair / maintenance | • Struck by / caught between equipment<br><br>• Injuries from hand, power and pneumatic tools<br><br>• Hand injuries<br><br>• Rigging failure<br><br>• Slips/trips | • Inspection of equipment<br>• Spotters to maintain eye contact with operators and wear hi-vis vests.<br>• Communication using hand signals / 2 way radios<br>• Backup alarms functioning<br>• Proper hand / body position<br><br>• Inspect tools before use.<br>• Do not remove guards or second handles.<br>• Glove use<br>• Face shields for grinding and saw cutting.<br>• Use pins to connect hoses and whip checks<br><br>• Proper hand, arm, and body placement. Awareness of line of fire potential<br>• Proper glove per task<br>• Identify pinch points, use appropriate tools for task<br><br>• Inspect crane and ground conditions prior to operating<br>• Inspect rigging before use<br>• Verify weight of load and center of gravity<br>• No personnel under suspended loads<br>• Tagline where necessary | 5 |

| | | | |
|---|---|---|---|
| | | • Maintain housekeeping<br>• Eyes on path of travel | |
| Set up of regulated area (drop cloths/banner tape), hang glove bag(s) and decontamination unit for abatement. | • Cuts using knife<br>• Slips, trips, falls<br>• Fall from height (if applicable) when hanging glove-bags<br>• Unauthorized access and contamination of non-regulated areas | • Use retractable utility knife<br>• Use Kevlar gloves<br>• Cut away from body<br>• Good housekeeping<br>• Clean up scrap poly, tape, glue cans, etc. as you go<br>• Elevate all cords overhead<br>• Minimize reaching, use podium or platform ladder or baker scaffold when available. Use Scissor lifts when applicable Use stepladders as last option.<br>• Have a designated access point with step off area(drop cloth, disposal bags) for employee entrance and exit from regulated area | 1 |
| Pipe Inspection / Identification | - Slips/trips/falls<br>- Pinch points<br>- Working from height / falls (aerial lift, ladder or platform)<br>- Overhead hazards<br>- Chemical exposure<br>- Fire<br>- Explosion<br>- Strain/sprain | - Maintain clear walking paths, plan approach and take purposeful steps<br>- Identify pinch points and keep hands/body clear, wear appropriate gloves<br>- Only trained and authorized personnel to operate equipment and tools<br>- Inspect work area prior to start and periodically throughout day to identify change in hazards (including overhead)<br>- Wear chemical resistent outer clothing, gloves and face shields when contents of pipe are unknown<br>- Use intrinsically safe drill with cutting oil to drill hole at high point of pipe. Inspect atmosphere within pipe with 5 gas meter.<br>- Useintrinsically safe drill with cutting oil to drill hole at low point of pipe to drain material as necessary.<br>- Use proper ergonomics (do not twist while lifting, do not extend reach beyond allowed range, proper lifting stance) | 7 |
| Operate Scissor and Boom lifts to access pipe insulation for glove-bagging | • Falls from heights<br>• Struck by and caught in between<br>• Machine tip over<br>• Pinch points | • Inspect equipment prior to use for damage, defects or leaks. Ensure that back up alarms are working.<br>• Inspect the work area for any uneven surfaces, hoses, debris or overhead hazards that could cause the lift to become unbalanced and cause potential harm to the operator.<br>• Take equipment out of service if damage, defects or leaks are identified. Report the condition to the Site Superintendent or the Safety Manager.<br>• Only trained, authorized personnel will be allowed to operate equipment onsite.<br>• Inspect PFAS and anchor points prior to use<br>• Don fall arrest equipment and secure to the anchorage point in the aerial lift prior to operating.<br>• Do not drive units with platform in elevated position<br>• Keep units within plant designated walkways when traveling<br>• Do not leave the aerial lift basket while elevated to enter a different work surface unless you maintain 100% tie off. | 3 |

| | | | |
|---|---|---|---|
| | | • Do not stand on the railings of the basket or use a ladder or other item to gain additional height in the aerial lift basket.<br>• Use a ground person in the event that the controls in the aerial lift basket become inoperable or the operator becomes disabled.<br>• Always look in the direction of travel while operating.<br>• DO NOT walk under an elevated aerial lift unit.<br>• Never place your body between a fixed object and the aerial lift. | |
| Removal of pipe Insulation using glove-bag methodology | • Asbestos exposure<br>• Cuts on hands from metal banding, jacketing or tie wire<br>• Back pain/strain from awkward and static positions<br>• Back strain when moving full glove bags | • Use water<br>• Wear half face respirator with HEPA filter<br>• Gloves<br>• Poly Pro suit (sleeves down, hoodie on)<br>• Wear Kevlar gloves inside glove-bag gloves if possible, Develop plan to remove jacketing off pipe ahead of sealing bag.<br>• Rotate postures as needed. Take stretch breaks.<br>• Do not overload bag. No more than 3' of pipe insulation per bag. If using large glove-bags use lull to lift bag.<br>• Use 2-man lift.<br>• Use proper lifting techniques – lift with legs, not with back.<br>• Use carts/buggies as needed/available. | 2 |
| Building/Structure Demolition and Dismantling | - Struck by/crush<br>- Flying debris<br>- Dropping materials<br>- Slip/trip/falls<br>- Structure failure<br>- Respiratory hazards<br>- Falls<br>- Working from heights (including aerial lifts)<br>- Fire<br>- Pinch points<br>- Stored Energy | - Delineate work zone, only authorized personnel within perimeter<br>- Only competent and authorized personnel will utilize heavy equipment<br>- Inspect work area periodically for changes in structure or overhead hazards<br>- Maintain clear walking paths, plan approach and take purposeful steps<br>- Work upwind, keep area wet as appropriate to limit dust production<br>- Complete pre-inspection of structure to determine potential chemical hazards<br>- All demolition will be conducted under the direction of an onsite demolition competent person<br>- Only trained and authorized personnel will use aerial lifts to access structure as needed<br>- Ensure any fall protection is inspected prior to use, only trained personnel will use fall protection<br>- Identify pinch points and keep clear of them, wear appropriate gloves<br>- Identify potential areas of stored energy (cables, bounce back of structure, overhead hazards). Discuss with SSO to determine addition control measures | 7 |
| Equipment Decontamination | - Flying debris<br>- High pressure<br>- Slip/trip/falls<br>- Sprain/strain<br>- Pinch points | - Delineate work zone to prevent personnel from flying debris<br>- Wear protective PPE (tyvek, face shield)<br>- Inspect pressure washer prior to use, only authorized and trained personnel to use<br>- Keep pressure washing wand pointed away from body and away from others | 3 |

| | | | |
|---|---|---|---|
| | | - Keep walkways clear of debris, wear nonslip boots, plan approach<br>- Use buddy system durin gset up, team lift greater than 50 pounds, use equipment to lift when available.<br>- Practice proper ergonomic (no twisting while lifting, maintain three points of contact during access and egress from equipment)<br>- Identify pinch points and take precautions when working around them, wear appropriate gloves | |

## Weather

### Current

**Temperature**

30



Overcast Clouds
64% Humidity

### Forecast

**Temperature**

27 30



Light Snow
59% Humidity

| | Yes | No |
|---|---|---|
| 1. I have reviewed the weather conditions with the crew? | ☐ | ☐ |
| 2. I have reviewed the road conditions with the crew? | ☐ | ☐ |

### Current

**Heat Index**

26

### Forecast

**Heat Index**

25

| | Yes | No |
|---|---|---|
| 3. I have reviewed the OSHA Heat Index? | ☐ | ☐ |

**By signing with your pin below:** You acknowledge and understand the **safety instructions** you've been given and that you will follow all of the required procedures and safety rules. You acknowledge that you have arrived for your shift injury free and must notify supervision or the safety department on site of any injury/accident or near miss that you had during your shift. You also verify that you are not showing any symptoms such as fever, cough or shortness of breath. you have not been in contact with anyone known to have COVID-19 and you have not traveled to any area with widespread concern of coronavirus.

Initial After:

| Worker | Verified |
|---|---|
| | |

Supervisor:
Auditor:

| | Adequate | Inadequate | | Adequate | Inadequate |
|---|---|---|---|---|---|
| 1. Task Description | ☐ | ☐ | 6. Reviewed / Signed by PSI / JHA Lead | ☐ | ☐ |
| 2. Hazard Identification | ☐ | ☐ | 7. Muster / Assembly Point Identified | ☐ | ☐ |
| 3. Hazard Controls | ☐ | ☐ | 8. Tools and Equipments Inspected | ☐ | ☐ |
| 4. All Sections Implemented | ☐ | ☐ | 9. PSI / JHA at Task Location | ☐ | ☐ |
| 5. Workers' Names Legible | ☐ | ☐ | | | |

**Comments**

## Evacuation Plan

**Note**

Muster point for BCP site will be at the guard shack at the main entrance.

*JOB SAFETY INSPECTION AND AUDIT*

**LOCATION/PROJECT:** **Date:**

**Audit and Inspection Report by:**

## OSC Summary of Findings and Improvement Measures:

## Summary

| DESCRIPTION | YES | NO | N/A | COMMENTS/ACTIONS |
|---|---|---|---|---|
| **SAFETY ADMINISTRATION, POSTINGS, FIRST AID & EMG RESPONSE** | | | | |
| 1. OSHA 300A form posted between February 1 and April 30 | | | | |
| 2. LABOR POSTINGS (ALL IN ONE FEDERAL & STATE) | | | | |
| 3. Emergency Phone number for the nearest medical center posted | | | | |
| 4. Safety Briefs/Talks & AHA's current and up to date. | | | | |
| 5. Work areas properly delineated (barricaded) and hazard warning signs | | | | |
| 6. Appropriate First Aid Supplies and Trained Personal Available | | | | |
| 7. Training Documentation Complete (40 Hour, OSC BASIC 10/OSHA 10, NYS Asbestos Hard Card Supervisors/Handlers) | | | | |
| **HOUSEKEEPING** | | | | |
| 1. Work area neat, debris picked up and free of trip hazards | | | | |
| 2. Projection and impalement hazards eliminated/protected (removed, | | | | |
| 3. Waste containers provided and used | | | | |
| 4. Passageways and walkways clear | | | | |
| 5. Cords and leads off the floor or protected | | | | |
| 6. Spill Kit Available & Stocked | | | | |
| **FIRE PREVENTION** | | | | |
| 1. Adequate firefighting equipment (hoses, extinguishers, fire blanket) | | | | |
| 2. Appropriate Flammable and Combustible Storage | | | | |
| 3. "No Smoking" signs posted and enforced near flammables | | | | |
| **ELECTRICAL AND CONTROL OF HAZARDOUS ENERGY** | | | | |
| 1. Extension cords with no bare wires or missing ground prongs in service | | | | |
| 2. Ground fault circuit interrupters being used | | | | |
| 3. Terminal boxes accessible and equipped with required covers | | | | |
| 4. Temporary Lighting (Guarded, Covered, No Exposed Sockets) | | | | |
| 5. Equipment wiring | | | | |
| 6. Proper Hazardous Energy Controls (LOTO, Air Gapping, Blanks) | | | | |
| **HAND, POWER & POWDER-ACTUATED TOOLS** | | | | |
| 1. Hand tools inspected regularly | | | | |
| 2. Guards in place on equipment | | | | |
| 3. Right tool being used for job at hand | | | | |

| DESCRIPTION | YES | NO | N/A | COMMENTS/ACTIONS |
|---|---|---|---|---|
| 4. Operators of powder-actuated tools are licensed | | | | |
| **FALL PROTECTION** | | | | |
| 1. Safety guard rails properly installed and inspected. | | | | |
| 2. Employees exposed to fall hazards are protected (PFAS 100% Tie-off Guards, Covers, Nets) | | | | |
| 3. Employees below protected from falling objects (Toe Boards or Guards) | | | | |
| **LADDERS** | | | | |
| 1. Straight Ladders extended at least 36 inches above the landing, proper | | | | |
| 2. Ladders inspected & properly use (secured, proper angel, type) | | | | |
| 3. Ladders with split or missing rungs taken out of service (tagged out) | | | | |
| 4. Stepladders used in fully open position | | | | |
| **SCAFFOLDING** | | | | |
| 1. All scaffolding inspected daily by a competent person | | | | |
| 2. Erected on sound rigid footing | | | | |
| 3. Tied to structure as required | | | | |
| 4. Guardrails, intermediate rails, toe boards and screens in place | | | | |
| 5. Planking is sound and sturdy | | | | |
| 6. Baseplates and mudsills in place | | | | |
| 7. Proper access provided | | | | |
| 8. Employees below protected from falling objects | | | | |
| **FLOOR & WALL OPENINGS** | | | | |
| 1. All floor or deck openings are planked over or barricaded | | | | |
| 2. Perimeter protection is in place | | | | |
| 3. Deck planks are secured | | | | |
| 4. Materials stored away from edge | | | | |
| **TRENCHES, EXCAVATION & SHORING** | | | | |
| 1. Competent person on hand | | | | |
| 2. Excavation proper protective system (shored or sloped/benched) | | | | |
| 3. Materials and spoil piles are stored at least two feet from trench | | | | |
| 4. Ladders provided within 25 feet in trench > 4 ft depth | | | | |
| 5. Equipment safe distance from edge of trench or excavation | | | | |

| DESCRIPTION | YES | NO | N/A | COMMENTS/ACTIONS |
|---|---|---|---|---|
| 6. Warning system in place if operator cannot see edge of trench | | | | |
| **MATERIAL HANDLING & HAZARD COMMUNICATION** | | | | |
| 1. Materials are properly stored or stacked | | | | |
| 2. Employees are using proper lifting methods | | | | |
| 3. SDS Available/Proper Containers & Labels Noted | | | | . |
| 4. Chemical Products properly used and stored per SDS | | | | |
| **WELDING & BURNING** | | | | |
| 1. Gas cylinders stored upright, securely, and in good condition | | | | |
| 2. Proper separation (20 ft) between fuels & oxygen or fire barrier | | | | |
| 3. Burning/welding/cutting goggles or shields are used | | | | |
| 4. Fire extinguishers are nearby (< 75ft ) | | | | |
| 5. Equipment & Hoses are in good condition. Flash arrestor equipped. | | | | |
| **RIGGING, HOISTING/LIFTING & PLACING ACTIVITIES (HOISTS, CHAINFALLS, CRANES & FORK TRUCKS)** | | | | |
| 1. Proper setup of lifting/hoisting equipment, controlled work zone established, swing radius barricaded & spotter provided | | | | |
| 2. Operator familiar with load chart (lifting capacity, weight of load <75% Max capacity of lifting/hoisting equipment & rigging components) | | | | |
| 3. Proper communication (radio communication, hand signals) | | | | |
| 4. Equipment & rigging inspected. Hoisting/Rigging by competent person. | | | | |
| 5. Employees kept from under suspended loads | | | | |
| 6. Chains and slings inspected (ANSI rated & properly tagged). | | | | |
| 7. Pick plan available and reviewed with crew | | | | |
| 8. Competent operator, rigger and flagman | | | | |
| **POWERED EQUIPMENT (Earth Moving, Fork Trucks, Aerial Lifts, ATV's** | | | | |
| 1. Equipment Physical Condition, daily inspection current with equipment (Guards, Lights, Glass/Cage, Tires/Tracks, Lights, Frame) | | | | |
| 2. Operational and Safety Controls Functional | | | | |
| 3. Proper Operation and Use Observed | | | | |

| DESCRIPTION | YES | NO | N/A | COMMENTS/ACTIONS |
|---|---|---|---|---|
| 4. Operators Manual Available and Inspection Check List Available with Equipment | | | | |
| **PERSONAL PROTECTIVE EQUIPMENT** | | | | |
| 1. Proper Head Protection used given task (ANSI Rated Hard Hats, Properly Worn) | | | | |
| 2. Proper Eye Protection given task (ANSI Rated Eye and Face Protection) | | | | |
| 3. Required Respirators given task (Proper Use, Care, Training & Medical) | | | | . |
| 4. Proper Hearing protection is being worn as required (NR Rating) | | | | |
| 5. High-visibility vests or equivalent high vis clothing are being worn | | | | |
| 6. Proper Hand, Foot, Leg, face & Skin Protection given task (Gloves, Safety Boots, Chaps, Metatarsals, Clothing - FR, Chemical) | | | | |
| **ABATEMENT** | | | | |
| 1. Decontamination unit properly installed and functioning (Shower, Filtration, Dirty Room, Clean Room & Waste Out). | | | | |
| 2. Proper negative air established, # units, monometer, backup units, temporary power, lighting, GFCI, exhaust, barricades & waste storage | | | | |
| 3. Containment properly installed (air locks, EMG egress, hazard signs) | | | | |
| 4. Proper abatement methods observed (PPE, Wet Methods & Handling) | | | | |
| 5. Entry exit log in use and properly completed | | | | |
| 6. Supervisors log and inspections current | | | | |

**Select Site Photos**

**Select Site Photos Continued**

Appendix B – Hot Work Permit

# Hot Work Permit

Project Name: _____ Project #: _____

Date and start time issued: _____ Expiration Date/Time: _____

Hot Work: ❑ Internal Combustion Engines ❑ Hot Tapping

❑ Sparking ❑ Work on Live Equipment ❑ Welding/Burning ❑ Other

Scope of Work: _____

What equipment preparation is required? (i.e., lockout/tagout, blinding pipes)

_____

Is any area cleanup required? _____ Explain: _____

_____

Is work area ventilation required? _____ What Type? _____

Is fire equipment required? _____ What Type? _____

What methods are to be employed to control sparks? _____

What type of firewatch is required, if any? _____

What periodic air/gas testing is required? _____

What continuous air/gas testing is required? _____

What instruments are required? _____

Where should the continuous air monitor(s) be placed?

What PPE is required? _____

Who must be notified each time work commences? _____

Special Instructions: _____

Signatures: Site Supervisor: _____

Site Safety Officer: _____

Client Representative (if required): _____

Appendix C – Pile 2 Concrete Sample Analytical Report

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Todd Waldrop
Inventum Engineering LLC
441 Carlisle Drive
Suite C
Herndon, Virginia 20170

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## JOB DESCRIPTION

Bulk Soil/Concrete Analysis

## JOB NUMBER

480-224895-1

Eurofins Buffalo
10 Hazelwood Drive
Amherst NY 14228-2298

See page two for job notes and contact information.



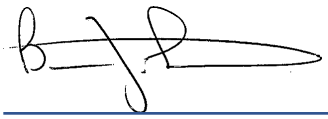
my EOL

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

## Authorization



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Authorized for release by
Brian Fischer, Manager of Project Management
Brian.Fischer@et.eurofinsus.com
(716)504-9835

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## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| 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 |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| vs | Reported analyte concentrations are below 200 ug/kg and may be biased low due to the sample not being collected according to 5035A- L low-level specifications. |

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| *+ | LCS and/or LCSD is outside acceptance limits, high biased. |
| E | Result exceeded calibration range. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| S1- | Surrogate recovery exceeds control limits, low biased. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| B | Compound was found in the blank and sample. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| S1- | Surrogate recovery exceeds control limits, low biased. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |

### LCMS

| Qualifier | Qualifier Description |
|---|---|
| *5+ | Isotope dilution analyte is outside acceptance limits, high biased. |
| I | 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. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| ^5- | Linear Range Check (LRC) is outside acceptance limits, low biased. |
| ^5+ | Linear Range Check (LRC) is outside acceptance limits, high biased. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD recovery exceeds control limits. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## 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) |

## Glossary (Continued)

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| 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 |

**Job Narrative**
**480-224895-1**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

**Receipt**
The samples were received on 10/29/2024 4:51 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.4°C and 4.8°C.

**GC/MS VOA**
Method 8260C: The following volatiles samples were analyzed using medium level soil analysis and diluted due to foaming at the time of purging during the original sample analysis: PILE6-03-10282024 (480-224895-27) and PILE6-05-10282024 (480-224895-29). Elevated reporting limits (RLs) are provided.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-730795 recovered above the upper control limit for 2-Hexanone. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PILE6-03-10282024 (480-224895-27) and PILE6-05-10282024 (480-224895-29).

Method 8260C: The method blank for preparation batch 480-730798 and analytical batch 480-730795 contained Methylene Chloride above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated sample(s) was not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-730750 recovered above the upper control limit for Chloromethane and Cyclohexane. The sample associated with this CCV was non-detect for the affected analytes; therefore, the data has been reported. The associated sample is impacted: PILE1-01-10282024 (480-224895-1).

Method 8260C: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 480-730959 and analytical batch 480-730960 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected. The associated sample is: (480-224895-A-31-C MSD).

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-731001 recovered above the upper control limit for 4-Methyl-2-pentanone (MIBK). The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated samples are impacted: PILE3-05-10282024 (480-224895-15) and PILE6-04-10282024 (480-224895-28).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**GC/MS Semi VOA**
Method 8270D: The following samples required a dilution due to the nature of the sample matrix: PILE1-01-10282024 (480-224895-1), PILE2-01-10282024 (480-224895-7) and PILE3-01-10282024 (480-224895-11). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8270D: The continuing calibration verification (CCV) associated with batch 480-730417 recovered above the upper control limit for 2-Nitroaniline and Di-n-octyl phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PILE1-01-10282024 (480-224895-1), PILE1-02-10282024 (480-224895-2), PILE2-01-10282024 (480-224895-7) and PILE3-01-10282024 (480-224895-11).

Method 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates

to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: PILE1-02-10282024 (480-224895-2). These results have been reported and qualified.

Method 8270D: The following samples were diluted to bring the concentration of target analytes within the calibration range: PILE1-02-10282024 (480-224895-2) and PILE3-01-10282024 (480-224895-11). Elevated reporting limits (RLs) are provided.

Method 8270D: The following sample was diluted due to the abundance of target analytes: PILE3-01-10282024 (480-224895-11). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

Method 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: PILE1-02-10282024 (480-224895-2), PILE4-01-10282024 (480-224895-18) and PILE6-02-10282024 (480-224895-26). These results have been reported and qualified.

Method 8270D: The continuing calibration verification (CCV) associated with batch 480-730587 recovered above the upper control limit for Bis(2-ethylhexyl) phthalate, Butyl benzyl phthalate and Di-n-octyl phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: PILE1-02-10282024 (480-224895-2), PILE3-01-10282024 (480-224895-11), PILE3-02-10282024 (480-224895-12), PILE4-01-10282024 (480-224895-18), PILE4-02-10282024 (480-224895-19), PILE5-01-10282024 (480-224895-24), PILE6-01-10282024 (480-224895-25) and PILE6-02-10282024 (480-224895-26).

Method 8270D: The following samples were diluted due to color, appearance, and viscosity: PILE4-01-10282024 (480-224895-18), PILE4-02-10282024 (480-224895-19), PILE6-01-10282024 (480-224895-25) and PILE6-02-10282024 (480-224895-26). Elevated reporting limits (RL) are provided.

Method 8270D: The laboratory control sample (LCS) for preparation batch 480-730376 and analytical batch 480-730587 recovered outside control limits for the following analytes: Di-n-octyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. The following associated samples are impacted: PILE3-02-10282024 (480-224895-12), PILE4-01-10282024 (480-224895-18), PILE4-02-10282024 (480-224895-19), PILE5-01-10282024 (480-224895-24), PILE6-01-10282024 (480-224895-25) and PILE6-02-10282024 (480-224895-26).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**Herbicides**
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**PCBs**
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**Pesticides**
Method 8081B: The following samples required a Florisil clean-up, via 3620C, to reduce matrix interferences: PILE1-01-10282024 (480-224895-1), PILE1-02-10282024 (480-224895-2), PILE2-01-10282024 (480-224895-7), PILE3-01-10282024 (480-224895-11), PILE3-02-10282024 (480-224895-12), PILE4-01-10282024 (480-224895-18), PILE4-02-10282024 (480-224895-19), PILE6-01-10282024 (480-224895-25) and PILE6-02-10282024 (480-224895-26).

Method 8081B: The following samples were diluted due to the nature of the sample: PILE1-01-10282024 (480-224895-1), PILE1-02-10282024 (480-224895-2), PILE2-01-10282024 (480-224895-7), PILE3-01-10282024 (480-224895-11), PILE4-01-10282024 (480-224895-18), PILE4-02-10282024 (480-224895-19), PILE6-01-10282024 (480-224895-25) and PILE6-02-10282024 (480-224895-26). As such, surrogate recoveries are below the calibration range, estimated, and not representative. Elevated reporting limits (RLs) are provided.

Method 8081B: The method blank for preparation batch 480-730372 and analytical batch 480-730567 contained alpha-BHC, delta-BHC and gamma-BHC (Lindane) above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed. The following associated samples are impacted: PILE1-01-10282024 (480-224895-1), PILE1-02-10282024 (480-224895-2), PILE2-01-10282024 (480-224895-7), PILE3-01-10282024 (480-224895-11), PILE3-02-10282024 (480-224895-12), PILE4-01-10282024 (480-224895-18), PILE4-02-10282024 (480-224895-19), PILE5-01-10282024 (480-224895-24), PILE6-01-10282024 (480-224895-25) and PILE6-02-10282024 (480-224895-26).

Method 8081B: For method 8081 Pesticides, the majority of the peaks present in the sample extracts are biphenyls indicating the presence of Aroclors. The results of several confirmed positive peaks may be enhanced and due to the biphenyl peaks present,

## Job ID: 480-224895-1 (Continued) Eurofins Buffalo

and may be considered estimated for: PILE5-01-10282024 (480-224895-24)

Method 8081B: Surrogate recovery for the following sample was outside the upper control limit: PILE3-02-10282024 (480-224895-12). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**PFAS**
Method 1633: Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: PILE1-01-10282024 (480-224895-1) for M2-8:2 FTS . Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries, samples are non detect for associated target analytes.

Method 1633: The low level continuing calibration verification (CCVL) associated with batch 240-633666 recovered above the upper control limit for. The samples associated with this CCV were below the RL for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**Metals**
Method 6010C: The following sample was diluted for Lead due to the nature of the sample matrix: PILE3-02-10282024 (480-224895-12). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**General Chemistry**
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE1-01-10282024

## Lab Sample ID: 480-224895-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.58 | J B F1 vs | 5.5 | 0.34 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.1 | J B vs | 5.5 | 2.5 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Acenaphthene | 940 | J | 3700 | 550 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Anthracene | 1700 | J | 3700 | 920 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene | 6000 | | 3700 | 370 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 5900 | | 3700 | 550 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 8300 | | 3700 | 590 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 4700 | | 3700 | 390 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 4100 | | 3700 | 480 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Carbazole | 1800 | J | 3700 | 440 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Chrysene | 7400 | | 3700 | 830 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene | 1300 | J | 3700 | 660 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Dibenzofuran | 660 | J | 3700 | 440 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Fluoranthene | 17000 | | 3700 | 390 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Fluorene | 830 | J | 3700 | 440 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 3800 | | 3700 | 460 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Phenanthrene | 12000 | | 3700 | 550 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Pyrene | 12000 | | 3700 | 440 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| alpha-BHC | 8.5 | J B | 36 | 6.5 | ug/Kg | 20 | ☼ | 8081B | Total/NA |
| PCB-1248 | 0.36 | | 0.21 | 0.040 | mg/Kg | 1 | ☼ | 8082A | Total/NA |
| PCB-1260 | 0.15 | J | 0.21 | 0.096 | mg/Kg | 1 | ☼ | 8082A | Total/NA |
| Pentachlorophenol | 7.6 | J | 18 | 5.9 | ug/Kg | 1 | ☼ | 8151A | Total/NA |
| Perfluorooctanoic acid (PFOA) | 0.18 | | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorononanoic acid (PFNA) | 0.098 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorodecanoic acid (PFDA) | 0.24 | | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluoroundecanoic acid (PFUnA) | 0.091 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorododecanoic acid (PFDoA) | 0.17 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorotridecanoic acid (PFTrDA) | 0.055 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorotetradecanoic acid (PFTeDA) | 0.067 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 1.0 | | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorodecanesulfonic acid (PFDS) | 0.060 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 12400 | | 11.3 | 9.7 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 3.3 | | 2.3 | 0.99 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 125 | | 0.56 | 0.16 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.44 | | 0.23 | 0.045 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 1.2 | | 0.23 | 0.079 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 75900 | | 56.4 | 30.5 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Chromium | 17.6 | | 0.56 | 0.41 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 3.6 | | 0.56 | 0.11 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 29.0 | | 1.1 | 0.64 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 12700 | | 11.3 | 9.6 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 48.9 | | 1.1 | 0.52 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 19500 | | 22.6 | 9.6 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 374 | | 1.1 | 0.32 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 12.4 | | 5.6 | 0.28 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1200 | | 33.9 | 27.4 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Selenium | 0.96 | J | 4.5 | 0.90 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 262 | | 158 | 69.2 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 13.9 | | 0.56 | 0.15 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 158 | | 2.3 | 1.2 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.23 | | 0.023 | 0.0053 | mg/Kg | 1 | ☼ | 7471B | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE1-01-10282024 (Continued)

## Lab Sample ID: 480-224895-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | 0.55 | J | 1.0 | 0.50 | mg/Kg | 1 | ☼ | 9012B | Total/NA |

## Client Sample ID: PILE1-02-10282024

## Lab Sample ID: 480-224895-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.65 | J B vs | 5.3 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Biphenyl | 61 | J | 180 | 27 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| 2-Methylnaphthalene | 150 | J | 180 | 37 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Acenaphthene | 620 | | 180 | 27 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Anthracene | 920 | | 180 | 45 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene | 1800 | | 180 | 18 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 1600 | | 180 | 27 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 2300 | | 180 | 29 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 1100 | | 180 | 19 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 750 | | 180 | 24 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Bis(2-ethylhexyl) phthalate | 71 | J | 180 | 62 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Butyl benzyl phthalate | 66 | J | 180 | 30 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Carbazole | 620 | | 180 | 22 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Chrysene | 2000 | | 180 | 41 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Di-n-butyl phthalate | 35 | J | 180 | 31 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene | 370 | | 180 | 32 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Dibenzofuran | 330 | | 180 | 22 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Fluoranthene | 4300 | E | 180 | 19 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Fluorene | 490 | | 180 | 22 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 1000 | | 180 | 23 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Naphthalene | 320 | | 180 | 24 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Phenanthrene | 3400 | E | 180 | 27 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Pyrene | 3100 | E | 180 | 22 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Acenaphthene - DL | 520 | J | 910 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Anthracene - DL | 760 | J | 910 | 230 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene - DL | 1600 | | 910 | 91 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene - DL | 1400 | | 910 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene - DL | 1900 | | 910 | 150 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene - DL | 750 | J | 910 | 97 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene - DL | 750 | J | 910 | 120 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Carbazole - DL | 500 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Chrysene - DL | 1700 | | 910 | 200 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene - DL | 200 | J | 910 | 160 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Dibenzofuran - DL | 270 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Fluoranthene - DL | 3700 | | 910 | 97 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Fluorene - DL | 420 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene - DL | 640 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Naphthalene - DL | 260 | J | 910 | 120 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Phenanthrene - DL | 3100 | | 910 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Pyrene - DL | 3000 | | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Pentachlorophenol | 19 | | 18 | 5.8 | ug/Kg | 1 | ☼ | 8151A | Total/NA |
| Aluminum | 5930 | | 10.8 | 9.3 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 12.2 | | 2.2 | 0.95 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 107 | | 0.54 | 0.15 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.26 | | 0.22 | 0.043 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 0.20 | J | 0.22 | 0.075 | mg/Kg | 1 | ☼ | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE1-02-10282024 (Continued) — Lab Sample ID: 480-224895-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 115000 | | 269 | 145 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Chromium | 18.0 | | 0.54 | 0.39 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 6.1 | | 0.54 | 0.11 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 20.9 | | 1.1 | 0.61 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 36500 | | 10.8 | 9.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 86.0 | | 1.1 | 0.50 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 4350 | | 21.5 | 9.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 386 | | 1.1 | 0.30 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 15.1 | | 5.4 | 0.27 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1160 | | 32.3 | 26.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 249 | | 151 | 66.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 12.6 | | 0.54 | 0.14 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 101 | | 2.2 | 1.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.037 | | 0.021 | 0.0049 | mg/Kg | 1 | ☼ | 7471B | Total/NA |
| Cyanide, Total | 0.61 | J | 0.97 | 0.47 | mg/Kg | 1 | ☼ | 9012B | Total/NA |

## Client Sample ID: PILE1-03-10282024 — Lab Sample ID: 480-224895-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 5.5 | J vs | 27 | 4.6 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Chloroform | 0.73 | J B vs | 5.4 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE1-04-10282024 — Lab Sample ID: 480-224895-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.55 | J B vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE1-05-10282024 — Lab Sample ID: 480-224895-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.52 | J B vs | 5.0 | 0.31 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE1-06-10282024 — Lab Sample ID: 480-224895-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 8.5 | J vs | 26 | 4.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Chloroform | 0.72 | J B vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 5.8 | vs | 5.2 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE2-01-10282024 — Lab Sample ID: 480-224895-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.53 | J B vs | 5.1 | 0.31 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Acenaphthene | 2200 | J | 3500 | 510 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Anthracene | 4200 | | 3500 | 860 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene | 7700 | | 3500 | 350 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 7100 | | 3500 | 510 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 8100 | | 3500 | 550 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 5000 | | 3500 | 370 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 4400 | | 3500 | 450 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Bis(2-ethylhexyl) phthalate | 1400 | J | 3500 | 1200 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Butyl benzyl phthalate | 2700 | J | 3500 | 570 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Carbazole | 2600 | J | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE2-01-10282024 (Continued)

## Lab Sample ID: 480-224895-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chrysene | 6900 | | 3500 | 780 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene | 1500 | J | 3500 | 610 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Dibenzofuran | 1600 | J | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Fluoranthene | 17000 | | 3500 | 370 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Fluorene | 2100 | J | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 4500 | | 3500 | 430 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Naphthalene | 1700 | J | 3500 | 450 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Phenanthrene | 14000 | | 3500 | 510 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Pyrene | 13000 | | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| PCB-1248 | 0.091 | J | 0.20 | 0.039 | mg/Kg | 1 | ☼ | 8082A | Total/NA |
| Pentachlorophenol | 5.7 | J | 17 | 5.5 | ug/Kg | 1 | ☼ | 8151A | Total/NA |
| Perfluorohexanoic acid (PFHxA) | 0.092 | J | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanoic acid (PFOA) | 0.25 | | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorononanoic acid (PFNA) | 0.052 | J | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorohexanesulfonic acid (PFHxS) | 0.14 | J | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 0.48 | | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanesulfonamide (PFOSA) | 0.045 | J | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | 0.051 | J | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 0.20 | | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 6470 | | 10.4 | 9.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 3.7 | | 2.1 | 0.92 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 51.2 | | 0.52 | 0.15 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.30 | | 0.21 | 0.042 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 0.15 | J | 0.21 | 0.073 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 154000 | | 260 | 140 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Chromium | 12.4 | | 0.52 | 0.37 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 3.4 | | 0.52 | 0.10 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 15.4 | | 1.0 | 0.59 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 11500 | | 10.4 | 8.8 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 13.2 | | 1.0 | 0.48 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 25500 | | 20.8 | 8.8 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 236 | | 1.0 | 0.29 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 10.8 | | 5.2 | 0.26 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1750 | | 31.2 | 25.2 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 341 | | 146 | 63.8 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 13.4 | | 0.52 | 0.14 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 164 | | 2.1 | 1.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 2.1 | | 2.0 | 0.46 | mg/Kg | 100 | ☼ | 7471B | Total/NA |

## Client Sample ID: PILE2-02-10282024

## Lab Sample ID: 480-224895-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.80 | J B vs | 5.4 | 0.34 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.6 | J vs | 5.4 | 2.5 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE2-03-10282024

## Lab Sample ID: 480-224895-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.56 | J B vs | 5.0 | 0.31 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 4.1 | J vs | 5.0 | 2.3 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE2-04-10282024 — Lab Sample ID: 480-224895-10

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.62 | J B vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 5.6 | vs | 5.2 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE3-01-10282024 — Lab Sample ID: 480-224895-11

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.57 | J B vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.7 | J vs | 5.2 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Biphenyl | 810 | J | 3500 | 510 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| 2-Methylnaphthalene | 3500 | | 3500 | 690 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Acenaphthene | 10000 | | 3500 | 510 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Anthracene | 17000 | | 3500 | 860 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene | 28000 | | 3500 | 350 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 25000 | | 3500 | 510 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 28000 | | 3500 | 550 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 16000 | | 3500 | 370 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 13000 | | 3500 | 450 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Carbazole | 7800 | | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Chrysene | 26000 | | 3500 | 780 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene | 4800 | | 3500 | 610 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Dibenzofuran | 5200 | | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Fluoranthene | 61000 | E | 3500 | 370 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Fluorene | 8800 | | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 14000 | | 3500 | 430 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Naphthalene | 9200 | | 3500 | 450 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Phenanthrene | 54000 | | 3500 | 510 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| Pyrene | 50000 | | 3500 | 410 | ug/Kg | 20 | ☼ | 8270D | Total/NA |
| 2-Methylnaphthalene - DL | 3400 | J | 8700 | 1700 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Acenaphthene - DL | 10000 | | 8700 | 1300 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Anthracene - DL | 17000 | | 8700 | 2100 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene - DL | 29000 | | 8700 | 870 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene - DL | 26000 | | 8700 | 1300 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene - DL | 31000 | | 8700 | 1400 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene - DL | 14000 | | 8700 | 920 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene - DL | 13000 | | 8700 | 1100 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Carbazole - DL | 7400 | J | 8700 | 1000 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Chrysene - DL | 29000 | | 8700 | 1900 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene - DL | 3200 | J | 8700 | 1500 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Dibenzofuran - DL | 5200 | J | 8700 | 1000 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Fluoranthene - DL | 59000 | | 8700 | 920 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Fluorene - DL | 9000 | | 8700 | 1000 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene - DL | 12000 | | 8700 | 1100 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Naphthalene - DL | 9600 | | 8700 | 1100 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Phenanthrene - DL | 59000 | | 8700 | 1300 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| Pyrene - DL | 55000 | | 8700 | 1000 | ug/Kg | 50 | ☼ | 8270D | Total/NA |
| 4,4'-DDE | 11 | J | 34 | 7.2 | ug/Kg | 20 | ☼ | 8081B | Total/NA |
| 4,4'-DDT | 26 | J | 34 | 8.0 | ug/Kg | 20 | ☼ | 8081B | Total/NA |
| alpha-BHC | 7.4 | J B | 34 | 6.1 | ug/Kg | 20 | ☼ | 8081B | Total/NA |
| delta-BHC | 7.3 | J B | 34 | 6.4 | ug/Kg | 20 | ☼ | 8081B | Total/NA |
| Pentachlorophenol | 10 | J | 17 | 5.6 | ug/Kg | 1 | ☼ | 8151A | Total/NA |
| Perfluorooctanoic acid (PFOA) | 0.079 | J | 0.17 | 0.043 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE3-01-10282024 (Continued)

## Lab Sample ID: 480-224895-11

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorooctanesulfonic acid (PFOS) | 0.34 | | 0.17 | 0.043 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 8200 | | 10.4 | 8.9 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 4.5 | | 2.1 | 0.91 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 308 | | 0.52 | 0.15 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.66 | | 0.21 | 0.041 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 1.2 | | 0.21 | 0.073 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 153000 | | 259 | 140 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Chromium | 28.2 | | 0.52 | 0.37 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 8.6 | | 0.52 | 0.10 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 63.4 | | 1.0 | 0.59 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 23100 | | 10.4 | 8.8 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 324 | | 1.0 | 0.48 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 34200 | | 20.7 | 8.8 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 643 | | 1.0 | 0.29 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 20.6 | | 5.2 | 0.26 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1860 | | 31.1 | 25.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Silver | 0.29 | J | 0.62 | 0.21 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 316 | | 145 | 63.6 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 12.9 | | 0.52 | 0.13 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 371 | | 2.1 | 1.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.70 | | 0.022 | 0.0050 | mg/Kg | 1 | ☼ | 7471B | Total/NA |
| Cyanide, Total | 1.1 | | 1.0 | 0.49 | mg/Kg | 1 | ☼ | 9012B | Total/NA |

## Client Sample ID: PILE3-02-10282024

## Lab Sample ID: 480-224895-12

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.61 | J B vs | 5.4 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Benzo[a]anthracene | 85 | J | 180 | 18 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 72 | J | 180 | 27 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 100 | J | 180 | 29 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 48 | J | 180 | 19 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 43 | J | 180 | 24 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Chrysene | 100 | J | 180 | 41 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Fluoranthene | 140 | J | 180 | 19 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 38 | J | 180 | 23 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Naphthalene | 43 | J | 180 | 24 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Phenanthrene | 120 | J | 180 | 27 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Pyrene | 140 | J | 180 | 22 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| 4,4'-DDE | 0.57 | J | 1.8 | 0.38 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| 4,4'-DDT | 0.61 | J | 1.8 | 0.42 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| alpha-BHC | 0.36 | J B | 1.8 | 0.32 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| Endrin ketone | 0.66 | J | 1.8 | 0.44 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| Aluminum | 5010 | | 10.8 | 9.3 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Antimony | 2.2 | J | 16.2 | 0.57 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 15.5 | | 2.2 | 0.95 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 40.2 | | 0.54 | 0.15 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.30 | | 0.22 | 0.043 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 0.16 | J | 0.22 | 0.076 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 71300 | | 53.9 | 29.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Chromium | 25.0 | | 0.54 | 0.39 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 12.6 | | 0.54 | 0.11 | mg/Kg | 1 | ☼ | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE3-02-10282024 (Continued) — Lab Sample ID: 480-224895-12

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Copper | 68.4 | | 1.1 | 0.61 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 88900 | | 53.9 | 45.7 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Lead | 13.0 | | 5.4 | 2.5 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Magnesium | 152000 | | 108 | 45.7 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Manganese | 581 | | 1.1 | 0.30 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 19.4 | | 5.4 | 0.27 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1330 | | 32.4 | 26.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Silver | 0.29 | J | 0.65 | 0.22 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 281 | | 151 | 66.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 19.2 | | 0.54 | 0.14 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 105 | | 2.2 | 1.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.012 | J | 0.023 | 0.0053 | mg/Kg | 1 | ☼ | 7471B | Total/NA |

## Client Sample ID: PILE3-03-10282024 — Lab Sample ID: 480-224895-13

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.71 | J B vs | 5.3 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE3-04-10282024 — Lab Sample ID: 480-224895-14

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.51 | J B vs | 5.1 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.3 | J vs | 5.1 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE3-05-10282024 — Lab Sample ID: 480-224895-15

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.44 | J B vs | 5.3 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.6 | J vs | 5.3 | 2.5 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Toluene | 1.4 | J vs | 5.3 | 0.40 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE3-06-10282024 — Lab Sample ID: 480-224895-16

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.57 | J B vs | 5.3 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.9 | J vs | 5.3 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE3-07-10282024 — Lab Sample ID: 480-224895-17

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.62 | J B vs | 5.3 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 2.8 | J vs | 5.3 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE4-01-10282024 — Lab Sample ID: 480-224895-18

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | 2.8 | J vs | 5.2 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Benzo[a]anthracene | 950 | | 890 | 89 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 960 | | 890 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 1400 | | 890 | 140 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 760 | J | 890 | 94 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 590 | J | 890 | 120 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Carbazole | 130 | J | 890 | 100 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Chrysene | 1200 | | 890 | 200 | ug/Kg | 5 | ☼ | 8270D | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE4-01-10282024 (Continued)

## Lab Sample ID: 480-224895-18

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | 2100 | | 890 | 94 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 620 | J | 890 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Phenanthrene | 920 | | 890 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Pyrene | 1900 | | 890 | 100 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Perfluorooctanoic acid (PFOA) | 0.11 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 0.14 | J | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 7880 | | 10.3 | 8.9 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 5.7 | | 2.1 | 0.91 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 56.0 | | 0.52 | 0.14 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.50 | | 0.21 | 0.041 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 0.60 | | 0.21 | 0.072 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 152000 | | 258 | 139 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Chromium | 30.3 | | 0.52 | 0.37 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 6.9 | | 0.52 | 0.10 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 41.8 | | 1.0 | 0.59 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 27700 | | 10.3 | 8.7 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 63.5 | | 1.0 | 0.47 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 27700 | | 20.6 | 8.7 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 461 | | 1.0 | 0.29 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 28.1 | | 5.2 | 0.26 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 2180 | | 30.9 | 25.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Silver | 0.25 | J | 0.62 | 0.21 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 2540 | | 144 | 63.2 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 14.4 | | 0.52 | 0.13 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 114 | | 2.1 | 1.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.41 | | 0.021 | 0.0048 | mg/Kg | 1 | ☼ | 7471B | Total/NA |
| Cyanide, Total | 1.2 | | 0.97 | 0.47 | mg/Kg | 1 | ☼ | 9012B | Total/NA |

## Client Sample ID: PILE4-02-10282024

## Lab Sample ID: 480-224895-19

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 12 | J vs | 26 | 4.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Chloroform | 0.53 | J B vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.9 | J vs | 5.2 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Benzo[a]anthracene | 580 | J | 1800 | 180 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 650 | J | 1800 | 260 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 770 | J | 1800 | 280 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 420 | J | 1800 | 190 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 360 | J | 1800 | 230 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Bis(2-ethylhexyl) phthalate | 820 | J | 1800 | 610 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Chrysene | 620 | J | 1800 | 400 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Fluoranthene | 1100 | J | 1800 | 190 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 370 | J | 1800 | 220 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Phenanthrene | 710 | J | 1800 | 260 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Pyrene | 1000 | J | 1800 | 210 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| alpha-BHC | 9.7 | J B | 35 | 6.2 | ug/Kg | 20 | ☼ | 8081B | Total/NA |
| PCB-1254 | 0.17 | J | 0.23 | 0.11 | mg/Kg | 1 | ☼ | 8082A | Total/NA |
| Perfluorooctanoic acid (PFOA) | 0.058 | J I | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 0.20 | | 0.18 | 0.044 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 5660 | | 10 | 8.6 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 3.7 | | 2.0 | 0.88 | mg/Kg | 1 | ☼ | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE4-02-10282024 (Continued) — Lab Sample ID: 480-224895-19

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Barium | 40.6 | | 0.50 | 0.14 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.35 | | 0.20 | 0.040 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 0.29 | | 0.20 | 0.070 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 102000 | | 249 | 134 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Chromium | 13.2 | | 0.50 | 0.36 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 4.1 | | 0.50 | 0.10 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 23.7 | | 1.0 | 0.57 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 11900 | | 10 | 8.4 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 44.4 | | 1.0 | 0.46 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 22800 | | 19.9 | 8.4 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 283 | | 1.0 | 0.28 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 13.4 | | 5.0 | 0.25 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1230 | | 29.9 | 24.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 320 | | 139 | 61.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 10.9 | | 0.50 | 0.13 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 81.5 | | 2.0 | 1.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.57 | | 0.021 | 0.0048 | mg/Kg | 1 | ☼ | 7471B | Total/NA |
| Cyanide, Total | 0.77 | J | 0.97 | 0.47 | mg/Kg | 1 | ☼ | 9012B | Total/NA |

## Client Sample ID: PILE4-03-10282024 — Lab Sample ID: 480-224895-20

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.63 | J B F1 vs | 5.1 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 5.2 | vs | 5.1 | 2.3 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE4-04-10282024 — Lab Sample ID: 480-224895-21

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.61 | J B vs | 5.4 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 2.7 | J vs | 5.4 | 2.5 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE4-05-10282024 — Lab Sample ID: 480-224895-22

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.60 | J B vs | 5.3 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 10 | vs | 5.3 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE4-06-10282024 — Lab Sample ID: 480-224895-23

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.60 | J B vs | 5.0 | 0.31 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.9 | J vs | 5.0 | 2.3 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE5-01-10282024 — Lab Sample ID: 480-224895-24

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 5.3 | J vs | 25 | 4.2 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Chloroform | 0.59 | J B vs | 5.0 | 0.31 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Benzo[a]anthracene | 20 | J | 170 | 17 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Fluoranthene | 36 | J | 170 | 18 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Phenanthrene | 36 | J | 170 | 25 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| Pyrene | 40 | J | 170 | 20 | ug/Kg | 1 | ☼ | 8270D | Total/NA |
| 4,4'-DDE | 1.3 | J | 1.7 | 0.36 | ug/Kg | 1 | ☼ | 8081B | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE5-01-10282024 (Continued)

## Lab Sample ID: 480-224895-24

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 9.6 | | 1.7 | 0.40 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| alpha-BHC | 0.34 | J B | 1.7 | 0.31 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| Endosulfan II | 0.89 | J | 1.7 | 0.31 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| Endrin | 0.44 | J | 1.7 | 0.34 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| Endrin aldehyde | 0.46 | J | 1.7 | 0.44 | ug/Kg | 1 | ☼ | 8081B | Total/NA |
| Perfluorobutanoic acid (PFBA) | 0.21 | J | 0.70 | 0.17 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 105 | | 10.3 | 8.9 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 4.7 | | 0.51 | 0.14 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 0.13 | J | 0.21 | 0.072 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 14900 | | 51.4 | 27.7 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Chromium | 0.91 | | 0.51 | 0.37 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 0.22 | J | 0.51 | 0.10 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 4.5 | | 1.0 | 0.59 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 778 | | 10.3 | 8.7 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 3.2 | | 1.0 | 0.47 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 302 | | 20.5 | 8.7 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 19.9 | | 1.0 | 0.29 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 0.52 | J | 5.1 | 0.26 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1010 | | 30.8 | 24.9 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 480 | | 144 | 63.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 0.31 | J | 0.51 | 0.13 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 9.9 | | 2.1 | 1.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |

## Client Sample ID: PILE6-01-10282024

## Lab Sample ID: 480-224895-25

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.56 | J B vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 4.2 | J vs | 5.2 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Acenaphthene | 630 | J | 1800 | 260 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Anthracene | 1300 | J | 1800 | 440 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene | 2900 | | 1800 | 180 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 2700 | | 1800 | 260 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 3500 | | 1800 | 280 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 2100 | | 1800 | 190 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 1800 | | 1800 | 230 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Carbazole | 720 | J | 1800 | 210 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Chrysene | 3200 | | 1800 | 400 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene | 530 | J | 1800 | 320 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Dibenzofuran | 400 | J | 1800 | 210 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Fluoranthene | 6700 | | 1800 | 190 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Fluorene | 570 | J | 1800 | 210 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 1600 | J | 1800 | 220 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Naphthalene | 360 | J | 1800 | 230 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Phenanthrene | 5100 | | 1800 | 260 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| Pyrene | 5700 | | 1800 | 210 | ug/Kg | 10 | ☼ | 8270D | Total/NA |
| 4,4'-DDT | 14 | J | 35 | 8.2 | ug/Kg | 20 | ☼ | 8081B | Total/NA |
| Perfluorooctanoic acid (PFOA) | 0.14 | J | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 0.085 | J | 0.17 | 0.042 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 7190 | | 10.9 | 9.4 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 5.2 | | 2.2 | 0.96 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 60.7 | | 0.54 | 0.15 | mg/Kg | 1 | ☼ | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE6-01-10282024 (Continued)

## Lab Sample ID: 480-224895-25

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Beryllium | 0.49 | | 0.22 | 0.044 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 1.3 | | 0.22 | 0.076 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 133000 | | 272 | 147 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Chromium | 13.6 | | 0.54 | 0.39 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 3.9 | | 0.54 | 0.11 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 44.0 | | 1.1 | 0.62 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Iron | 12100 | | 10.9 | 9.2 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 60.8 | | 1.1 | 0.50 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 13600 | | 21.8 | 9.2 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Manganese | 416 | | 1.1 | 0.31 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 13.0 | | 5.4 | 0.27 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1550 | | 32.7 | 26.4 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 373 | | 153 | 66.8 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 12.5 | | 0.54 | 0.14 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 287 | | 2.2 | 1.1 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.24 | | 0.022 | 0.0050 | mg/Kg | 1 | ☼ | 7471B | Total/NA |
| Cyanide, Total | 1.9 | | 1.0 | 0.50 | mg/Kg | 1 | ☼ | 9012B | Total/NA |

## Client Sample ID: PILE6-02-10282024

## Lab Sample ID: 480-224895-26

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.68 | J B vs | 5.3 | 0.33 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| 2-Methylphenol | 130 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Acenaphthene | 630 | J | 910 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Anthracene | 1300 | | 910 | 220 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[a]anthracene | 2000 | | 910 | 91 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[a]pyrene | 1900 | | 910 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[b]fluoranthene | 2300 | | 910 | 140 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[g,h,i]perylene | 1300 | | 910 | 96 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Benzo[k]fluoranthene | 1000 | | 910 | 120 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Carbazole | 640 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Chrysene | 2000 | | 910 | 200 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Dibenz(a,h)anthracene | 370 | J | 910 | 160 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Dibenzofuran | 410 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Fluoranthene | 4600 | | 910 | 96 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Fluorene | 630 | J | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Indeno[1,2,3-cd]pyrene | 960 | | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Naphthalene | 360 | J | 910 | 120 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Phenanthrene | 4600 | | 910 | 130 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Pyrene | 4100 | | 910 | 110 | ug/Kg | 5 | ☼ | 8270D | Total/NA |
| Perfluorooctanoic acid (PFOA) | 0.12 | J | 0.18 | 0.046 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 0.052 | J | 0.18 | 0.046 | ug/Kg | 1 | ☼ | Draft-3 1633 | Total/NA |
| Aluminum | 7130 | | 11.4 | 9.8 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Arsenic | 3.1 | | 2.3 | 1.0 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Barium | 30.8 | | 0.57 | 0.16 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Beryllium | 0.26 | | 0.23 | 0.046 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cadmium | 0.32 | | 0.23 | 0.080 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Calcium | 153000 | | 284 | 154 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Chromium | 13.9 | | 0.57 | 0.41 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Cobalt | 5.2 | | 0.57 | 0.11 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Copper | 34.8 | | 1.1 | 0.65 | mg/Kg | 1 | ☼ | 6010C | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: PILE6-02-10282024 (Continued) — Lab Sample ID: 480-224895-26

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Iron | 22200 | | 11.4 | 9.6 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Lead | 13.8 | | 1.1 | 0.52 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Magnesium | 50300 | | 114 | 48.2 | mg/Kg | 5 | ☼ | 6010C | Total/NA |
| Manganese | 290 | | 1.1 | 0.32 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Nickel | 17.5 | | 5.7 | 0.28 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Potassium | 1720 | | 34.1 | 27.6 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Sodium | 582 | | 159 | 69.7 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Vanadium | 11.9 | | 0.57 | 0.15 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Zinc | 80.1 | | 2.3 | 1.2 | mg/Kg | 1 | ☼ | 6010C | Total/NA |
| Mercury | 0.012 | J | 0.021 | 0.0049 | mg/Kg | 1 | ☼ | 7471B | Total/NA |

## Client Sample ID: PILE6-03-10282024 — Lab Sample ID: 480-224895-27

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Methyl acetate | 680 | J | 1000 | 100 | ug/Kg | 2 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 160 | J B | 210 | 42 | ug/Kg | 2 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE6-04-10282024 — Lab Sample ID: 480-224895-28

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 13 | J vs | 27 | 4.6 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Chloroform | 0.68 | J B vs | 5.5 | 0.34 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.2 | J vs | 5.5 | 2.5 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Toluene | 1.2 | J vs | 5.5 | 0.42 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE6-05-10282024 — Lab Sample ID: 480-224895-29

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Methyl acetate | 410 | J | 1100 | 100 | ug/Kg | 2 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 160 | J B | 220 | 43 | ug/Kg | 2 | ☼ | 8260C | Total/NA |
| Trichloroethene | 63 | J | 220 | 60 | ug/Kg | 2 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE6-06-10282024 — Lab Sample ID: 480-224895-30

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.53 | J B vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

## Client Sample ID: PILE6-07-10282024 — Lab Sample ID: 480-224895-31

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 4.4 | J F2 vs | 26 | 4.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Chloroform | 0.56 | J B F2 vs | 5.2 | 0.32 | ug/Kg | 1 | ☼ | 8260C | Total/NA |
| Methylene Chloride | 3.7 | J F2 vs | 5.2 | 2.4 | ug/Kg | 1 | ☼ | 8260C | Total/NA |

This Detection Summary does not include radiochemical test results.

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-01-10282024**
**Date Collected: 10/28/24 13:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-1**
**Matrix: Solid**
**Percent Solids: 90.6**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F1 vs | 5.5 | 0.40 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | F1 vs | 5.5 | 0.89 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,1,2-Trichloroethane | ND | F1 vs | 5.5 | 0.71 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.5 | 1.2 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.5 | 0.67 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,1-Dichloroethene | ND | F1 vs | 5.5 | 0.67 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,2,4-Trichlorobenzene | ND | F1 vs | 5.5 | 0.33 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | F1 vs | 5.5 | 2.7 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,2-Dichlorobenzene | ND | F1 vs | 5.5 | 0.43 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,2-Dichloroethane | ND | F1 vs | 5.5 | 0.27 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.5 | 2.7 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,3-Dichlorobenzene | ND | F1 vs | 5.5 | 0.28 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,4-Dichlorobenzene | ND | F1 vs | 5.5 | 0.76 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 2-Butanone (MEK) | ND | F1 vs | 27 | 2.0 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 2-Hexanone | ND | F1 vs | 27 | 2.7 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.8 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Acetone | ND | F1 F2 vs | 27 | 4.6 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Benzene | ND | F1 vs | 5.5 | 0.27 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Bromodichloromethane | ND | F1 vs | 5.5 | 0.73 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Bromoform | ND | F1 vs | 5.5 | 2.7 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Bromomethane | ND | vs | 5.5 | 0.49 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Carbon disulfide | ND | F1 vs | 5.5 | 2.7 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Carbon tetrachloride | ND | F1 vs | 5.5 | 0.53 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Chlorobenzene | ND | F1 vs | 5.5 | 0.72 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Dibromochloromethane | ND | F1 vs | 5.5 | 0.70 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Chloroethane | ND | vs | 5.5 | 1.2 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| **Chloroform** | **0.58** | **J B F1 vs** | 5.5 | 0.34 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Chloromethane | ND | vs | 5.5 | 0.33 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| cis-1,2-Dichloroethene | ND | F1 vs | 5.5 | 0.70 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| cis-1,3-Dichloropropene | ND | F1 vs | 5.5 | 0.79 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Cyclohexane | ND | F1 vs | 5.5 | 0.76 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.5 | 0.45 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Ethylbenzene | ND | F1 vs | 5.5 | 0.38 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| 1,2-Dibromoethane | ND | F1 vs | 5.5 | 0.70 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Isopropylbenzene | ND | F1 vs | 5.5 | 0.82 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Methyl acetate | ND | vs | 27 | 3.3 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.5 | 0.54 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Methylcyclohexane | ND | F1 vs | 5.5 | 0.83 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| **Methylene Chloride** | **3.1** | **J B vs** | 5.5 | 2.5 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Styrene | ND | F1 vs | 5.5 | 0.27 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Tetrachloroethene | ND | F1 vs | 5.5 | 0.73 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Toluene | ND | F1 vs | 5.5 | 0.41 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| trans-1,2-Dichloroethene | ND | F1 vs | 5.5 | 0.56 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| trans-1,3-Dichloropropene | ND | F1 vs | 5.5 | 2.4 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Trichloroethene | ND | F1 vs | 5.5 | 1.2 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Trichlorofluoromethane | ND | vs | 5.5 | 0.52 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Vinyl chloride | ND | vs | 5.5 | 0.67 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |
| Xylenes, Total | ND | F1 vs | 11 | 0.92 | ug/Kg | ☼ | 10/31/24 17:53 | 11/01/24 00:20 | 1 |

**Client Sample ID: PILE1-01-10282024**
**Date Collected: 10/28/24 13:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-1**
**Matrix: Solid**
**Percent Solids: 90.6**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *92* | | *71 - 125* | *10/31/24 17:53* | *11/01/24 00:20* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *64 - 126* | *10/31/24 17:53* | *11/01/24 00:20* | *1* |
| *4-Bromofluorobenzene (Surr)* | *85* | | *72 - 126* | *10/31/24 17:53* | *11/01/24 00:20* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *60 - 140* | *10/31/24 17:53* | *11/01/24 00:20* | *1* |

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 3700 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| bis (2-chloroisopropyl) ether | ND | | 3700 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2,4,5-Trichlorophenol | ND | | 3700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2,4,6-Trichlorophenol | ND | | 3700 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2,4-Dichlorophenol | ND | | 3700 | 390 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2,4-Dimethylphenol | ND | | 3700 | 900 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2,4-Dinitrophenol | ND | | 36000 | 17000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2,4-Dinitrotoluene | ND | | 3700 | 760 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2,6-Dinitrotoluene | ND | | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2-Chloronaphthalene | ND | | 3700 | 610 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2-Chlorophenol | ND | | 7200 | 680 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2-Methylnaphthalene | ND | | 3700 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2-Methylphenol | ND | | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2-Nitroaniline | ND | | 7200 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 2-Nitrophenol | ND | | 3700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 3,3'-Dichlorobenzidine | ND | | 7200 | 4400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 3-Nitroaniline | ND | | 7200 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4,6-Dinitro-2-methylphenol | ND | | 7200 | 3700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4-Bromophenyl phenyl ether | ND | | 3700 | 520 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4-Chloro-3-methylphenol | ND | | 3700 | 920 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4-Chloroaniline | ND | | 3700 | 920 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4-Chlorophenyl phenyl ether | ND | | 3700 | 460 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4-Methylphenol | ND | | 7200 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4-Nitroaniline | ND | | 7200 | 1900 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| 4-Nitrophenol | ND | | 7200 | 2600 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Acenaphthene** | **940** | **J** | 3700 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Acenaphthylene | ND | | 3700 | 480 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Acetophenone | ND | | 3700 | 500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Anthracene** | **1700** | **J** | 3700 | 920 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Atrazine | ND | | 3700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Benzaldehyde | ND | | 3700 | 3000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Benzo[a]anthracene** | **6000** | | 3700 | 370 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Benzo[a]pyrene** | **5900** | | 3700 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Benzo[b]fluoranthene** | **8300** | | 3700 | 590 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Benzo[g,h,i]perylene** | **4700** | | 3700 | 390 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Benzo[k]fluoranthene** | **4100** | | 3700 | 480 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Bis(2-chloroethoxy)methane | ND | | 3700 | 790 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Bis(2-chloroethyl)ether | ND | | 3700 | 480 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Bis(2-ethylhexyl) phthalate | ND | | 3700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Butyl benzyl phthalate | ND | | 3700 | 610 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Caprolactam | ND | | 3700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Carbazole** | **1800** | **J** | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Chrysene** | **7400** | | 3700 | 830 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |

**Client Sample ID: PILE1-01-10282024**
**Date Collected: 10/28/24 13:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-1**
**Matrix: Solid**
**Percent Solids: 90.6**

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-butyl phthalate | ND | | 3700 | 630 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Di-n-octyl phthalate | ND | | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Dibenz(a,h)anthracene** | **1300** | **J** | 3700 | 660 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Dibenzofuran** | **660** | **J** | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Diethyl phthalate | ND | | 3700 | 480 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Dimethyl phthalate | ND | | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Fluoranthene** | **17000** | | 3700 | 390 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Fluorene** | **830** | **J** | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Hexachlorobenzene | ND | | 3700 | 500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Hexachlorobutadiene | ND | | 3700 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Hexachlorocyclopentadiene | ND | | 3700 | 500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Hexachloroethane | ND | | 3700 | 480 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Indeno[1,2,3-cd]pyrene** | **3800** | | 3700 | 460 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Isophorone | ND | | 3700 | 790 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| N-Nitrosodi-n-propylamine | ND | | 3700 | 630 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| N-Nitrosodiphenylamine | ND | | 3700 | 3000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Naphthalene | ND | | 3700 | 480 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Nitrobenzene | ND | | 3700 | 420 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Pentachlorophenol | ND | | 7200 | 3700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Phenanthrene** | **12000** | | 3700 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| Phenol | ND | | 3700 | 570 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |
| **Pyrene** | **12000** | | 3700 | 440 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:17 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *88* | | *26 - 143* | *10/29/24 17:50* | *10/30/24 22:17* | *20* |
| *2-Fluorobiphenyl* | *63* | | *50 - 121* | *10/29/24 17:50* | *10/30/24 22:17* | *20* |
| *2-Fluorophenol* | *49* | | *36 - 120* | *10/29/24 17:50* | *10/30/24 22:17* | *20* |
| *Nitrobenzene-d5* | *76* | | *40 - 121* | *10/29/24 17:50* | *10/30/24 22:17* | *20* |
| *p-Terphenyl-d14* | *68* | | *46 - 143* | *10/29/24 17:50* | *10/30/24 22:17* | *20* |
| *Phenol-d5* | *57* | | *41 - 120* | *10/29/24 17:50* | *10/30/24 22:17* | *20* |

### Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 36 | 7.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| 4,4'-DDE | ND | | 36 | 7.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| 4,4'-DDT | ND | | 36 | 8.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Aldrin | ND | | 36 | 8.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| **alpha-BHC** | **8.5** | **J B** | 36 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| cis-Chlordane | ND | | 36 | 18 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| beta-BHC | ND | | 36 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| delta-BHC | ND | | 36 | 6.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Dieldrin | ND | | 36 | 8.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Endosulfan I | ND | | 36 | 7.0 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Endosulfan II | ND | | 36 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Endosulfan sulfate | ND | | 36 | 6.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Endrin | ND | | 36 | 7.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Endrin aldehyde | ND | | 36 | 9.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Endrin ketone | ND | | 36 | 8.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| gamma-BHC (Lindane) | ND | | 36 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| trans-Chlordane | ND | | 36 | 12 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-01-10282024**
**Date Collected: 10/28/24 13:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-1**
**Matrix: Solid**
**Percent Solids: 90.6**

### Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Heptachlor | ND | | 36 | 7.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Heptachlor epoxide | ND | | 36 | 9.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Methoxychlor | ND | | 36 | 7.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |
| Toxaphene | ND | | 360 | 210 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:39 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 11:39* | *20* |
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 11:39* | *20* |
| *Tetrachloro-m-xylene* | *134* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 11:39* | *20* |
| *Tetrachloro-m-xylene* | *202* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 11:39* | *20* |

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.21 | 0.040 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 16:53 | 1 |
| PCB-1221 | ND | | 0.21 | 0.040 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 16:53 | 1 |
| PCB-1232 | ND | | 0.21 | 0.040 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 16:53 | 1 |
| PCB-1242 | ND | | 0.21 | 0.040 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 16:53 | 1 |
| **PCB-1248** | **0.36** | | 0.21 | 0.040 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 16:53 | 1 |
| PCB-1254 | ND | | 0.21 | 0.096 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 16:53 | 1 |
| **PCB-1260** | **0.15** | **J** | 0.21 | 0.096 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 16:53 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *120* | | *60 - 154* | *10/29/24 18:14* | *10/30/24 16:53* | *1* |
| *Tetrachloro-m-xylene* | *101* | | *60 - 154* | *10/29/24 18:14* | *10/30/24 16:53* | *1* |
| *DCB Decachlorobiphenyl* | *109* | | *65 - 174* | *10/29/24 18:14* | *10/30/24 16:53* | *1* |
| *DCB Decachlorobiphenyl* | *78* | | *65 - 174* | *10/29/24 18:14* | *10/30/24 16:53* | *1* |

### Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 18 | 5.8 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 16:50 | 1 |
| Silvex (2,4,5-TP) | ND | | 18 | 6.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 16:50 | 1 |
| 2,4-D | ND | | 18 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 16:50 | 1 |
| Dichlorprop | ND | | 18 | 9.1 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 16:50 | 1 |
| **Pentachlorophenol** | **7.6** | **J** | 18 | 5.9 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 16:50 | 1 |
| Picloram | ND | | 18 | 7.8 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 16:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *50* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 16:50* | *1* |
| *2,4-Dichlorophenylacetic acid* | *60* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 16:50* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.36 | 0.089 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **0.18** | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| **Perfluorononanoic acid (PFNA)** | **0.098** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| **Perfluorodecanoic acid (PFDA)** | **0.24** | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| **Perfluoroundecanoic acid (PFUnA)** | **0.091** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-01-10282024**
**Date Collected: 10/28/24 13:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-1**
**Matrix: Solid**
**Percent Solids: 90.6**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Perfluorododecanoic acid (PFDoA)** | **0.17** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| **Perfluorotridecanoic acid (PFTrDA)** | **0.055** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| **Perfluorotetradecanoic acid (PFTeDA)** | **0.067** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **1.0** | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.36 | 0.089 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.36 | 0.089 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.36 | 0.089 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.89 | 0.22 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-01-10282024**
**Date Collected: 10/28/24 13:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-1**
**Matrix: Solid**
**Percent Solids: 90.6**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Perfluorodecanesulfonic acid (PFDS)** | **0.060** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.36 | 0.089 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:00 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *90.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C5 PFPeA* | *75.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C5 PFHxA* | *78.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C4 PFHpA* | *84.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C8 PFOA* | *85.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C9 PFNA* | *81.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C6 PFDA* | *77.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C7 PFUnA* | *83.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C2 PFTeDA* | *107* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C3 PFBS* | *79.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C3 PFHxS* | *80.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C8 PFOS* | *81.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C8 PFOSA* | *92.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *d3-NMeFOSAA* | *98.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *d5-NEtFOSAA* | *111* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *M2-4:2 FTS* | *136* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *M2-6:2 FTS* | *137* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *M2-8:2 FTS* | *163* | **5+* | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C3 HFPO-DA* | *78.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *d7-N-MeFOSE-M* | *61.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *d9-N-EtFOSE-M* | *73.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *d5-NEtPFOSA* | *83.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *D3-NMeFOSA* | *73.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |
| *13C2-PFDoDA* | *74.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:00* | *1* |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **12400** | | 11.3 | 9.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| Antimony | ND | | 16.9 | 0.60 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Arsenic** | **3.3** | | 2.3 | 0.99 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Barium** | **125** | | 0.56 | 0.16 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Beryllium** | **0.44** | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Cadmium** | **1.2** | | 0.23 | 0.079 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Calcium** | **75900** | | 56.4 | 30.5 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Chromium** | **17.6** | | 0.56 | 0.41 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Cobalt** | **3.6** | | 0.56 | 0.11 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Copper** | **29.0** | | 1.1 | 0.64 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Iron** | **12700** | | 11.3 | 9.6 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Lead** | **48.9** | | 1.1 | 0.52 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Magnesium** | **19500** | | 22.6 | 9.6 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Manganese** | **374** | | 1.1 | 0.32 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Nickel** | **12.4** | | 5.6 | 0.28 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Potassium** | **1200** | | 33.9 | 27.4 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| **Selenium** | **0.96** | **J** | 4.5 | 0.90 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| Silver | ND | | 0.68 | 0.23 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |

## Client Sample ID: PILE1-01-10282024

**Lab Sample ID: 480-224895-1**

**Date Collected: 10/28/24 13:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 90.6**

### Method: SW846 6010C - Metals (ICP) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sodium | 262 | | 158 | 69.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| Thallium | ND | | 6.8 | 0.86 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| Vanadium | 13.9 | | 0.56 | 0.15 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |
| Zinc | 158 | | 2.3 | 1.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:37 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.23 | | 0.023 | 0.0053 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:17 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total (SW846 9012B) | 0.55 | J | 1.0 | 0.50 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:22 | 1 |

## Client Sample ID: PILE1-02-10282024

**Lab Sample ID: 480-224895-2**

**Date Collected: 10/28/24 13:35**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 92.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.3 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.3 | 0.87 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.3 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.3 | 0.42 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.3 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 2.0 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.8 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Acetone | ND | vs | 27 | 4.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Benzene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Bromodichloromethane | ND | vs | 5.3 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Bromoform | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Bromomethane | ND | vs | 5.3 | 0.48 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Carbon disulfide | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Carbon tetrachloride | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Chlorobenzene | ND | vs | 5.3 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Dibromochloromethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Chloroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Chloroform | 0.65 | J B vs | 5.3 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Chloromethane | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.3 | 0.77 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Cyclohexane | ND | vs | 5.3 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |

**Client Sample ID: PILE1-02-10282024**
**Date Collected: 10/28/24 13:35**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-2**
**Matrix: Solid**
**Percent Solids: 92.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | vs | 5.3 | 0.44 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Ethylbenzene | ND | vs | 5.3 | 0.37 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.3 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Isopropylbenzene | ND | vs | 5.3 | 0.81 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Methyl acetate | ND | vs | 27 | 3.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Methylcyclohexane | ND | vs | 5.3 | 0.81 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Methylene Chloride | ND | vs | 5.3 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Styrene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Tetrachloroethene | ND | vs | 5.3 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Toluene | ND | vs | 5.3 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.3 | 0.55 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.3 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Trichloroethene | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Trichlorofluoromethane | ND | vs | 5.3 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Vinyl chloride | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.90 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/02/24 22:29* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *11/01/24 11:35* | *11/02/24 22:29* | *1* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* | *11/01/24 11:35* | *11/02/24 22:29* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *60 - 140* | *11/01/24 11:35* | *11/02/24 22:29* | *1* |

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Biphenyl** | **61** | **J** | 180 | 27 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| bis (2-chloroisopropyl) ether | ND | | 180 | 37 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2,4,5-Trichlorophenol | ND | | 180 | 50 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2,4,6-Trichlorophenol | ND | | 180 | 37 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2,4-Dichlorophenol | ND | | 180 | 19 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2,4-Dimethylphenol | ND | | 180 | 44 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2,4-Dinitrophenol | ND | | 1800 | 840 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2,4-Dinitrotoluene | ND | | 180 | 38 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2,6-Dinitrotoluene | ND | | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2-Chloronaphthalene | ND | | 180 | 30 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2-Chlorophenol | ND | | 360 | 33 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **2-Methylnaphthalene** | **150** | **J** | 180 | 37 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2-Methylphenol | ND | | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2-Nitroaniline | ND | | 360 | 27 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 2-Nitrophenol | ND | | 180 | 52 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 3,3'-Dichlorobenzidine | ND | | 360 | 220 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 3-Nitroaniline | ND | | 360 | 51 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 4,6-Dinitro-2-methylphenol | ND | | 360 | 180 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 4-Bromophenyl phenyl ether | ND | | 180 | 26 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 4-Chloro-3-methylphenol | ND | | 180 | 45 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 4-Chloroaniline | ND | | 180 | 45 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 4-Chlorophenyl phenyl ether | ND | | 180 | 23 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 4-Methylphenol | ND | | 360 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| 4-Nitroaniline | ND | | 360 | 96 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-02-10282024**
**Date Collected: 10/28/24 13:35**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-2**
**Matrix: Solid**
**Percent Solids: 92.2**

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4-Nitrophenol | ND | | 360 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Acenaphthene** | **620** | | 180 | 27 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Acenaphthylene | ND | | 180 | 24 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Acetophenone | ND | | 180 | 25 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Anthracene** | **920** | | 180 | 45 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Atrazine | ND | | 180 | 64 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Benzaldehyde | ND | | 180 | 150 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Benzo[a]anthracene** | **1800** | | 180 | 18 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Benzo[a]pyrene** | **1600** | | 180 | 27 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Benzo[b]fluoranthene** | **2300** | | 180 | 29 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Benzo[g,h,i]perylene** | **1100** | | 180 | 19 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Benzo[k]fluoranthene** | **750** | | 180 | 24 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Bis(2-chloroethoxy)methane | ND | | 180 | 39 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Bis(2-chloroethyl)ether | ND | | 180 | 24 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Bis(2-ethylhexyl) phthalate** | **71** | **J** | 180 | 62 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Butyl benzyl phthalate** | **66** | **J** | 180 | 30 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Caprolactam | ND | | 180 | 55 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Carbazole** | **620** | | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Chrysene** | **2000** | | 180 | 41 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Di-n-butyl phthalate** | **35** | **J** | 180 | 31 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Di-n-octyl phthalate | ND | | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Dibenz(a,h)anthracene** | **370** | | 180 | 32 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Dibenzofuran** | **330** | | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Diethyl phthalate | ND | | 180 | 24 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Dimethyl phthalate | ND | | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Fluoranthene** | **4300** | **E** | 180 | 19 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Fluorene** | **490** | | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Hexachlorobenzene | ND | | 180 | 25 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Hexachlorobutadiene | ND | | 180 | 27 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Hexachlorocyclopentadiene | ND | | 180 | 25 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Hexachloroethane | ND | | 180 | 24 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Indeno[1,2,3-cd]pyrene** | **1000** | | 180 | 23 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Isophorone | ND | | 180 | 39 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| N-Nitrosodi-n-propylamine | ND | | 180 | 31 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| N-Nitrosodiphenylamine | ND | | 180 | 150 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Naphthalene** | **320** | | 180 | 24 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Nitrobenzene | ND | | 180 | 20 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Pentachlorophenol | ND | | 360 | 180 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Phenanthrene** | **3400** | **E** | 180 | 27 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| Phenol | ND | | 180 | 28 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |
| **Pyrene** | **3100** | **E** | 180 | 22 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 22:42 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *10* | *S1-* | *26 - 143* | *10/29/24 17:50* | *10/30/24 22:42* | *1* |
| *2-Fluorobiphenyl* | *79* | | *50 - 121* | *10/29/24 17:50* | *10/30/24 22:42* | *1* |
| *2-Fluorophenol* | *50* | | *36 - 120* | *10/29/24 17:50* | *10/30/24 22:42* | *1* |
| *Nitrobenzene-d5* | *76* | | *40 - 121* | *10/29/24 17:50* | *10/30/24 22:42* | *1* |
| *p-Terphenyl-d14* | *88* | | *46 - 143* | *10/29/24 17:50* | *10/30/24 22:42* | *1* |
| *Phenol-d5* | *79* | | *41 - 120* | *10/29/24 17:50* | *10/30/24 22:42* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-02-10282024**
**Date Collected: 10/28/24 13:35**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-2**
**Matrix: Solid**
**Percent Solids: 92.2**

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 910 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| bis (2-chloroisopropyl) ether | ND | | 910 | 180 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2,4,5-Trichlorophenol | ND | | 910 | 250 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2,4,6-Trichlorophenol | ND | | 910 | 180 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2,4-Dichlorophenol | ND | | 910 | 97 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2,4-Dimethylphenol | ND | | 910 | 220 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2,4-Dinitrophenol | ND | | 8900 | 4200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2,4-Dinitrotoluene | ND | | 910 | 190 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2,6-Dinitrotoluene | ND | | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2-Chloronaphthalene | ND | | 910 | 150 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2-Chlorophenol | ND | | 1800 | 170 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2-Methylnaphthalene | ND | | 910 | 180 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2-Methylphenol | ND | | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2-Nitroaniline | ND | | 1800 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 2-Nitrophenol | ND | | 910 | 260 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 3,3'-Dichlorobenzidine | ND | | 1800 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 3-Nitroaniline | ND | | 1800 | 250 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4,6-Dinitro-2-methylphenol | ND | | 1800 | 910 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4-Bromophenyl phenyl ether | ND | | 910 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4-Chloro-3-methylphenol | ND | | 910 | 230 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4-Chloroaniline | ND | | 910 | 230 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4-Chlorophenyl phenyl ether | ND | | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4-Methylphenol | ND | | 1800 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4-Nitroaniline | ND | | 1800 | 480 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| 4-Nitrophenol | ND | | 1800 | 640 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Acenaphthene** | **520** | **J** | 910 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Acenaphthylene | ND | | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Acetophenone | ND | | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Anthracene** | **760** | **J** | 910 | 230 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Atrazine | ND | | 910 | 320 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Benzaldehyde | ND | | 910 | 730 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Benzo[a]anthracene** | **1600** | | 910 | 91 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Benzo[a]pyrene** | **1400** | | 910 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Benzo[b]fluoranthene** | **1900** | | 910 | 150 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Benzo[g,h,i]perylene** | **750** | **J** | 910 | 97 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Benzo[k]fluoranthene** | **750** | **J** | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Bis(2-chloroethoxy)methane | ND | | 910 | 190 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Bis(2-chloroethyl)ether | ND | | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Bis(2-ethylhexyl) phthalate | ND | | 910 | 310 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Butyl benzyl phthalate | ND | | 910 | 150 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Caprolactam | ND | | 910 | 270 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Carbazole** | **500** | **J** | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Chrysene** | **1700** | | 910 | 200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Di-n-butyl phthalate | ND | | 910 | 160 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Di-n-octyl phthalate | ND | | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Dibenz(a,h)anthracene** | **200** | **J** | 910 | 160 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Dibenzofuran** | **270** | **J** | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Diethyl phthalate | ND | | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Dimethyl phthalate | ND | | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-02-10282024**
**Date Collected: 10/28/24 13:35**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-2**
**Matrix: Solid**
**Percent Solids: 92.2**

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Fluoranthene** | **3700** | | 910 | 97 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Fluorene** | **420** | **J** | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Hexachlorobenzene | ND | | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Hexachlorobutadiene | ND | | 910 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Hexachlorocyclopentadiene | ND | | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Hexachloroethane | ND | | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Indeno[1,2,3-cd]pyrene** | **640** | **J** | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Isophorone | ND | | 910 | 190 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| N-Nitrosodi-n-propylamine | ND | | 910 | 160 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| N-Nitrosodiphenylamine | ND | | 910 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Naphthalene** | **260** | **J** | 910 | 120 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Nitrobenzene | ND | | 910 | 100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Pentachlorophenol | ND | | 1800 | 910 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Phenanthrene** | **3100** | | 910 | 130 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| Phenol | ND | | 910 | 140 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |
| **Pyrene** | **3000** | | 910 | 110 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:20 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *5* | *S1-* | *26 - 143* | *10/29/24 17:50* | *10/31/24 11:20* | *5* |
| *2-Fluorobiphenyl* | *68* | | *50 - 121* | *10/29/24 17:50* | *10/31/24 11:20* | *5* |
| *2-Fluorophenol* | *39* | | *36 - 120* | *10/29/24 17:50* | *10/31/24 11:20* | *5* |
| *Nitrobenzene-d5* | *63* | | *40 - 121* | *10/29/24 17:50* | *10/31/24 11:20* | *5* |
| *p-Terphenyl-d14* | *75* | | *46 - 143* | *10/29/24 17:50* | *10/31/24 11:20* | *5* |
| *Phenol-d5* | *59* | | *41 - 120* | *10/29/24 17:50* | *10/31/24 11:20* | *5* |

### Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 36 | 6.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| 4,4'-DDE | ND | | 36 | 7.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| 4,4'-DDT | ND | | 36 | 8.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Aldrin | ND | | 36 | 8.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| alpha-BHC | ND | | 36 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| cis-Chlordane | ND | | 36 | 18 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| beta-BHC | ND | | 36 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| delta-BHC | ND | | 36 | 6.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Dieldrin | ND | | 36 | 8.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Endosulfan I | ND | | 36 | 6.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Endosulfan II | ND | | 36 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Endosulfan sulfate | ND | | 36 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Endrin | ND | | 36 | 7.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Endrin aldehyde | ND | | 36 | 9.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Endrin ketone | ND | | 36 | 8.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| gamma-BHC (Lindane) | ND | | 36 | 6.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| trans-Chlordane | ND | | 36 | 11 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Heptachlor | ND | | 36 | 7.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Heptachlor epoxide | ND | | 36 | 9.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Methoxychlor | ND | | 36 | 7.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |
| Toxaphene | ND | | 360 | 210 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 11:59 | 20 |

**Client Sample ID: PILE1-02-10282024**
**Date Collected: 10/28/24 13:35**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-2**
**Matrix: Solid**
**Percent Solids: 92.2**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 11:59* | *20* |
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 11:59* | *20* |
| *Tetrachloro-m-xylene* | *127* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 11:59* | *20* |
| *Tetrachloro-m-xylene* | *167* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 11:59* | *20* |

## Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 17:11 | 1 |
| PCB-1221 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 17:11 | 1 |
| PCB-1232 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 17:11 | 1 |
| PCB-1242 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 17:11 | 1 |
| PCB-1248 | ND | | 0.24 | 0.047 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 17:11 | 1 |
| PCB-1254 | ND | | 0.24 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 17:11 | 1 |
| PCB-1260 | ND | | 0.24 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/30/24 17:11 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *118* | | *60 - 154* | *10/29/24 18:14* | *10/30/24 17:11* | *1* |
| *Tetrachloro-m-xylene* | *92* | | *60 - 154* | *10/29/24 18:14* | *10/30/24 17:11* | *1* |
| *DCB Decachlorobiphenyl* | *111* | | *65 - 174* | *10/29/24 18:14* | *10/30/24 17:11* | *1* |
| *DCB Decachlorobiphenyl* | *83* | | *65 - 174* | *10/29/24 18:14* | *10/30/24 17:11* | *1* |

## Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 18 | 5.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:09 | 1 |
| Silvex (2,4,5-TP) | ND | | 18 | 6.4 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:09 | 1 |
| 2,4-D | ND | | 18 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:09 | 1 |
| Dichlorprop | ND | | 18 | 8.9 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:09 | 1 |
| **Pentachlorophenol** | **19** | | 18 | 5.8 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:09 | 1 |
| Picloram | ND | | 18 | 7.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:09 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *34* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 17:09* | *1* |
| *2,4-Dichlorophenylacetic acid* | *31* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 17:09* | *1* |

## Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorooctanoic acid (PFOA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |

**Client Sample ID: PILE1-02-10282024**
**Date Collected: 10/28/24 13:35**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-2**
**Matrix: Solid**
**Percent Solids: 92.2**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.88 | 0.22 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:17 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *81.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:17* | *1* |
| *13C5 PFPeA* | *71.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:17* | *1* |
| *13C5 PFHxA* | *73.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:17* | *1* |
| *13C4 PFHpA* | *78.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:17* | *1* |
| *13C8 PFOA* | *75.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:17* | *1* |
| *13C9 PFNA* | *80.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:17* | *1* |

**Client Sample ID: PILE1-02-10282024**
**Date Collected: 10/28/24 13:35**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-2**
**Matrix: Solid**
**Percent Solids: 92.2**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Isotope Dilution | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 13C6 PFDA | 80.8 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C7 PFUnA | 81.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C2 PFTeDA | 92.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C3 PFBS | 81.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C3 PFHxS | 78.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C8 PFOS | 78.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C8 PFOSA | 68.1 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| d3-NMeFOSAA | 64.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| d5-NEtFOSAA | 76.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| M2-4:2 FTS | 83.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| M2-6:2 FTS | 79.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| M2-8:2 FTS | 89.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C3 HFPO-DA | 77.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| d7-N-MeFOSE-M | 66.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| d9-N-EtFOSE-M | 64.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| d5-NEtPFOSA | 65.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| D3-NMeFOSA | 70.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |
| 13C2-PFDoDA | 84.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 03:17 | 1 |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 5930 | | 10.8 | 9.3 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Antimony | ND | | 16.2 | 0.57 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Arsenic | 12.2 | | 2.2 | 0.95 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:26 | 1 |
| Barium | 107 | | 0.54 | 0.15 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Beryllium | 0.26 | | 0.22 | 0.043 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Cadmium | 0.20 | J | 0.22 | 0.075 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Calcium | 115000 | | 269 | 145 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:48 | 5 |
| Chromium | 18.0 | | 0.54 | 0.39 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Cobalt | 6.1 | | 0.54 | 0.11 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Copper | 20.9 | | 1.1 | 0.61 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Iron | 36500 | | 10.8 | 9.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Lead | 86.0 | | 1.1 | 0.50 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Magnesium | 4350 | | 21.5 | 9.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Manganese | 386 | | 1.1 | 0.30 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Nickel | 15.1 | | 5.4 | 0.27 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Potassium | 1160 | | 32.3 | 26.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Selenium | ND | | 4.3 | 0.86 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Silver | ND | | 0.65 | 0.22 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Sodium | 249 | | 151 | 66.0 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Thallium | ND | | 6.5 | 0.82 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Vanadium | 12.6 | | 0.54 | 0.14 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |
| Zinc | 101 | | 2.2 | 1.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:45 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.037 | | 0.021 | 0.0049 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:18 | 1 |

## Client Sample ID: PILE1-02-10282024

**Lab Sample ID: 480-224895-2**

**Date Collected: 10/28/24 13:35**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 92.2**

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total (SW846 9012B) | 0.61 | J | 0.97 | 0.47 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:22 | 1 |

## Client Sample ID: PILE1-03-10282024

**Lab Sample ID: 480-224895-3**

**Date Collected: 10/28/24 13:40**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.4 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.4 | 0.88 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.4 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.4 | 0.42 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.4 | 0.28 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.4 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 2.0 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.8 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Acetone | 5.5 | J vs | 27 | 4.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Benzene | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Bromodichloromethane | ND | vs | 5.4 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Bromoform | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Bromomethane | ND | vs | 5.4 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Carbon disulfide | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Carbon tetrachloride | ND | vs | 5.4 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Chlorobenzene | ND | vs | 5.4 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Dibromochloromethane | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Chloroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Chloroform | 0.73 | J B vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Chloromethane | ND | vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.4 | 0.78 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Cyclohexane | ND | vs | 5.4 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.4 | 0.45 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Ethylbenzene | ND | vs | 5.4 | 0.37 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.4 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Isopropylbenzene | ND | vs | 5.4 | 0.82 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Methyl acetate | ND | vs | 27 | 3.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.4 | 0.53 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Methylcyclohexane | ND | vs | 5.4 | 0.82 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Methylene Chloride | ND | vs | 5.4 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Styrene | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Tetrachloroethene | ND | vs | 5.4 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Toluene | ND | vs | 5.4 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE1-03-10282024

**Lab Sample ID: 480-224895-3**

**Date Collected: 10/28/24 13:40**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND | vs | 5.4 | 0.56 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.4 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Trichloroethene | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Trichlorofluoromethane | ND | vs | 5.4 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Vinyl chloride | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.91 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 22:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *91* | | *71 - 125* | *11/01/24 11:35* | *11/02/24 22:52* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *64 - 126* | *11/01/24 11:35* | *11/02/24 22:52* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/02/24 22:52* | *1* |
| *Dibromofluoromethane (Surr)* | *87* | | *60 - 140* | *11/01/24 11:35* | *11/02/24 22:52* | *1* |

## Client Sample ID: PILE1-04-10282024

**Lab Sample ID: 480-224895-4**

**Date Collected: 10/28/24 13:45**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.7**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.84 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Benzene | ND | vs | 5.2 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Bromodichloromethane | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| **Chloroform** | **0.55** | **J B vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |

## Client Sample ID: PILE1-04-10282024

**Lab Sample ID: 480-224895-4**

**Date Collected: 10/28/24 13:45**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.7**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.78 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Methylene Chloride | ND | vs | 5.2 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Toluene | ND | vs | 5.2 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.54 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.87 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:16 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *91* | | *71 - 125* | *11/01/24 11:35* | *11/02/24 23:16* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *64 - 126* | *11/01/24 11:35* | *11/02/24 23:16* | *1* |
| *4-Bromofluorobenzene (Surr)* | *81* | | *72 - 126* | *11/01/24 11:35* | *11/02/24 23:16* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *60 - 140* | *11/01/24 11:35* | *11/02/24 23:16* | *1* |

## Client Sample ID: PILE1-05-10282024

**Lab Sample ID: 480-224895-5**

**Date Collected: 10/28/24 13:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 98.5**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.0 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.0 | 0.81 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.0 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.0 | 0.30 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.0 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.0 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.0 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 2-Butanone (MEK) | ND | vs | 25 | 1.8 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 2-Hexanone | ND | vs | 25 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 25 | 1.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Acetone | ND | vs | 25 | 4.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Benzene | ND | vs | 5.0 | 0.24 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Bromodichloromethane | ND | vs | 5.0 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Bromoform | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |

## Client Sample ID: PILE1-05-10282024

**Lab Sample ID: 480-224895-5**

**Date Collected: 10/28/24 13:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 98.5**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromomethane | ND | vs | 5.0 | 0.45 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Carbon disulfide | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Carbon tetrachloride | ND | vs | 5.0 | 0.48 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Chlorobenzene | ND | vs | 5.0 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Dibromochloromethane | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Chloroethane | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| **Chloroform** | **0.52** | **J B vs** | 5.0 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Chloromethane | ND | vs | 5.0 | 0.30 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.0 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Cyclohexane | ND | vs | 5.0 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.0 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Ethylbenzene | ND | vs | 5.0 | 0.34 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Isopropylbenzene | ND | vs | 5.0 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Methyl acetate | ND | vs | 25 | 3.0 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.0 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Methylcyclohexane | ND | vs | 5.0 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Methylene Chloride | ND | vs | 5.0 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Styrene | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Tetrachloroethene | ND | vs | 5.0 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Toluene | ND | vs | 5.0 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.0 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.0 | 2.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Trichloroethene | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Trichlorofluoromethane | ND | vs | 5.0 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Vinyl chloride | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.84 | ug/Kg | ☼ | 11/01/24 11:35 | 11/02/24 23:40 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/02/24 23:40* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *64 - 126* | *11/01/24 11:35* | *11/02/24 23:40* | *1* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* | *11/01/24 11:35* | *11/02/24 23:40* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *60 - 140* | *11/01/24 11:35* | *11/02/24 23:40* | *1* |

## Client Sample ID: PILE1-06-10282024

**Lab Sample ID: 480-224895-6**

**Date Collected: 10/28/24 13:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.1**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.84 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE1-06-10282024**
**Date Collected: 10/28/24 13:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-6**
**Matrix: Solid**
**Percent Solids: 95.1**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| **Acetone** | **8.5** | **J vs** | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Benzene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Bromodichloromethane | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| **Chloroform** | **0.72** | **J B vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| **Methylene Chloride** | **5.8** | **vs** | 5.2 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Toluene | ND | vs | 5.2 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.54 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.87 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 00:04* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 00:04* | *1* |
| *4-Bromofluorobenzene (Surr)* | *85* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 00:04* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 00:04* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE2-01-10282024**
**Date Collected: 10/28/24 14:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-7**
**Matrix: Solid**
**Percent Solids: 96.2**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.1 | 0.37 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.1 | 0.82 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.1 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.1 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.1 | 0.62 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.1 | 0.62 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.1 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.1 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.1 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.1 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.1 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.1 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.1 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 2-Butanone (MEK) | ND | vs | 25 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 2-Hexanone | ND | vs | 25 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 25 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Acetone | ND | vs | 25 | 4.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Benzene | ND | vs | 5.1 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Bromodichloromethane | ND | vs | 5.1 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Bromoform | ND | vs | 5.1 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Bromomethane | ND | vs | 5.1 | 0.46 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Carbon disulfide | ND | vs | 5.1 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Carbon tetrachloride | ND | vs | 5.1 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Chlorobenzene | ND | vs | 5.1 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Dibromochloromethane | ND | vs | 5.1 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Chloroethane | ND | vs | 5.1 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| **Chloroform** | **0.53** | **J B vs** | 5.1 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Chloromethane | ND | vs | 5.1 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.1 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.1 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Cyclohexane | ND | vs | 5.1 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.1 | 0.42 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Ethylbenzene | ND | vs | 5.1 | 0.35 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.1 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Isopropylbenzene | ND | vs | 5.1 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Methyl acetate | ND | vs | 25 | 3.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.1 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Methylcyclohexane | ND | vs | 5.1 | 0.77 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Methylene Chloride | ND | vs | 5.1 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Styrene | ND | vs | 5.1 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Tetrachloroethene | ND | vs | 5.1 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Toluene | ND | vs | 5.1 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.1 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.1 | 2.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Trichloroethene | ND | vs | 5.1 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Trichlorofluoromethane | ND | vs | 5.1 | 0.48 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Vinyl chloride | ND | vs | 5.1 | 0.62 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.85 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:28 | 1 |

**Client Sample ID: PILE2-01-10282024**
**Date Collected: 10/28/24 14:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-7**
**Matrix: Solid**
**Percent Solids: 96.2**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *89* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 00:28* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 00:28* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 00:28* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 00:28* | *1* |

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| bis (2-chloroisopropyl) ether | ND | | 3500 | 700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2,4,5-Trichlorophenol | ND | | 3500 | 940 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2,4,6-Trichlorophenol | ND | | 3500 | 700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2,4-Dichlorophenol | ND | | 3500 | 370 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2,4-Dimethylphenol | ND | | 3500 | 840 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2,4-Dinitrophenol | ND | | 34000 | 16000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2,4-Dinitrotoluene | ND | | 3500 | 720 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2,6-Dinitrotoluene | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2-Chloronaphthalene | ND | | 3500 | 570 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2-Chlorophenol | ND | | 6800 | 630 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2-Methylnaphthalene | ND | | 3500 | 700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2-Methylphenol | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2-Nitroaniline | ND | | 6800 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 2-Nitrophenol | ND | | 3500 | 980 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 3,3'-Dichlorobenzidine | ND | | 6800 | 4100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 3-Nitroaniline | ND | | 6800 | 960 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4,6-Dinitro-2-methylphenol | ND | | 6800 | 3500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4-Bromophenyl phenyl ether | ND | | 3500 | 490 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4-Chloro-3-methylphenol | ND | | 3500 | 860 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4-Chloroaniline | ND | | 3500 | 860 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4-Chlorophenyl phenyl ether | ND | | 3500 | 430 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4-Methylphenol | ND | | 6800 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4-Nitroaniline | ND | | 6800 | 1800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| 4-Nitrophenol | ND | | 6800 | 2400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Acenaphthene** | **2200** | **J** | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Acenaphthylene | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Acetophenone | ND | | 3500 | 470 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Anthracene** | **4200** | | 3500 | 860 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Atrazine | ND | | 3500 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Benzaldehyde | ND | | 3500 | 2800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Benzo[a]anthracene** | **7700** | | 3500 | 350 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Benzo[a]pyrene** | **7100** | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Benzo[b]fluoranthene** | **8100** | | 3500 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Benzo[g,h,i]perylene** | **5000** | | 3500 | 370 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Benzo[k]fluoranthene** | **4400** | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Bis(2-chloroethoxy)methane | ND | | 3500 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Bis(2-chloroethyl)ether | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Bis(2-ethylhexyl) phthalate** | **1400** | **J** | 3500 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Butyl benzyl phthalate** | **2700** | **J** | 3500 | 570 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Caprolactam | ND | | 3500 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Carbazole** | **2600** | **J** | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Chrysene** | **6900** | | 3500 | 780 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |

**Client Sample ID: PILE2-01-10282024**
**Date Collected: 10/28/24 14:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-7**
**Matrix: Solid**
**Percent Solids: 96.2**

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-butyl phthalate | ND | | 3500 | 590 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Di-n-octyl phthalate | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Dibenz(a,h)anthracene** | **1500** | **J** | 3500 | 610 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Dibenzofuran** | **1600** | **J** | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Diethyl phthalate | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Dimethyl phthalate | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Fluoranthene** | **17000** | | 3500 | 370 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Fluorene** | **2100** | **J** | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Hexachlorobenzene | ND | | 3500 | 470 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Hexachlorobutadiene | ND | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Hexachlorocyclopentadiene | ND | | 3500 | 470 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Hexachloroethane | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Indeno[1,2,3-cd]pyrene** | **4500** | | 3500 | 430 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Isophorone | ND | | 3500 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| N-Nitrosodi-n-propylamine | ND | | 3500 | 590 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| N-Nitrosodiphenylamine | ND | | 3500 | 2800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Naphthalene** | **1700** | **J** | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Nitrobenzene | ND | | 3500 | 390 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Pentachlorophenol | ND | | 6800 | 3500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Phenanthrene** | **14000** | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| Phenol | ND | | 3500 | 530 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |
| **Pyrene** | **13000** | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:06 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *90* | | *26 - 143* | *10/29/24 17:50* | *10/30/24 23:06* | *20* |
| *2-Fluorobiphenyl* | *84* | | *50 - 121* | *10/29/24 17:50* | *10/30/24 23:06* | *20* |
| *2-Fluorophenol* | *71* | | *36 - 120* | *10/29/24 17:50* | *10/30/24 23:06* | *20* |
| *Nitrobenzene-d5* | *94* | | *40 - 121* | *10/29/24 17:50* | *10/30/24 23:06* | *20* |
| *p-Terphenyl-d14* | *89* | | *46 - 143* | *10/29/24 17:50* | *10/30/24 23:06* | *20* |
| *Phenol-d5* | *74* | | *41 - 120* | *10/29/24 17:50* | *10/30/24 23:06* | *20* |

### Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 34 | 6.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| 4,4'-DDE | ND | | 34 | 7.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| 4,4'-DDT | ND | | 34 | 7.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Aldrin | ND | | 34 | 8.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| alpha-BHC | ND | | 34 | 6.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| cis-Chlordane | ND | | 34 | 17 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| beta-BHC | ND | | 34 | 6.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| delta-BHC | ND | | 34 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Dieldrin | ND | | 34 | 8.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Endosulfan I | ND | | 34 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Endosulfan II | ND | | 34 | 6.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Endosulfan sulfate | ND | | 34 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Endrin | ND | | 34 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Endrin aldehyde | ND | | 34 | 8.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Endrin ketone | ND | | 34 | 8.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| gamma-BHC (Lindane) | ND | | 34 | 6.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| trans-Chlordane | ND | | 34 | 11 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |

**Client Sample ID: PILE2-01-10282024**
**Date Collected: 10/28/24 14:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-7**
**Matrix: Solid**
**Percent Solids: 96.2**

### Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Heptachlor | ND | | 34 | 7.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Heptachlor epoxide | ND | | 34 | 8.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Methoxychlor | ND | | 34 | 6.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |
| Toxaphene | ND | | 340 | 200 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:18 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 12:18* | *20* |
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 12:18* | *20* |
| *Tetrachloro-m-xylene* | *142* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 12:18* | *20* |
| *Tetrachloro-m-xylene* | *165* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 12:18* | *20* |

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.20 | 0.039 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:21 | 1 |
| PCB-1221 | ND | | 0.20 | 0.039 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:21 | 1 |
| PCB-1232 | ND | | 0.20 | 0.039 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:21 | 1 |
| PCB-1242 | ND | | 0.20 | 0.039 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:21 | 1 |
| **PCB-1248** | **0.091** | **J** | 0.20 | 0.039 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:21 | 1 |
| PCB-1254 | ND | | 0.20 | 0.094 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:21 | 1 |
| PCB-1260 | ND | | 0.20 | 0.094 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:21 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *116* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 07:21* | *1* |
| *Tetrachloro-m-xylene* | *97* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 07:21* | *1* |
| *DCB Decachlorobiphenyl* | *116* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 07:21* | *1* |
| *DCB Decachlorobiphenyl* | *83* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 07:21* | *1* |

### Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 17 | 5.4 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:27 | 1 |
| Silvex (2,4,5-TP) | ND | | 17 | 6.1 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:27 | 1 |
| 2,4-D | ND | | 17 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:27 | 1 |
| Dichlorprop | ND | | 17 | 8.4 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:27 | 1 |
| **Pentachlorophenol** | **5.7** | **J** | 17 | 5.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:27 | 1 |
| Picloram | ND | | 17 | 7.3 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *34* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 17:27* | *1* |
| *2,4-Dichlorophenylacetic acid* | *39* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 17:27* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.34 | 0.084 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **Perfluorohexanoic acid (PFHxA)** | **0.092** | **J** | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **0.25** | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **Perfluorononanoic acid (PFNA)** | **0.052** | **J** | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE2-01-10282024**
**Date Collected: 10/28/24 14:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-7**
**Matrix: Solid**
**Percent Solids: 96.2**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **Perfluorohexanesulfonic acid (PFHxS)** | **0.14** | **J** | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **0.48** | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **Perfluorooctanesulfonamide (PFOSA)** | **0.045** | **J** | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **N-ethylperfluorooctane sulfonamide (NEtFOSA)** | **0.051** | **J** | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| **N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)** | **0.20** | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.7 | 0.42 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.7 | 0.42 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.34 | 0.084 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.34 | 0.084 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.34 | 0.084 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.84 | 0.21 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.2 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.2 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |

**Client Sample ID: PILE2-01-10282024**
**Date Collected: 10/28/24 14:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-7**
**Matrix: Solid**
**Percent Solids: 96.2**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.34 | 0.084 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:33 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *98.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C5 PFPeA* | *81.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C5 PFHxA* | *86.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C4 PFHpA* | *89.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C8 PFOA* | *89.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C9 PFNA* | *97.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C6 PFDA* | *93.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C7 PFUnA* | *91.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C2 PFTeDA* | *97.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C3 PFBS* | *92.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C3 PFHxS* | *88.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C8 PFOS* | *89.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C8 PFOSA* | *73.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *d3-NMeFOSAA* | *78.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *d5-NEtFOSAA* | *84.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *M2-4:2 FTS* | *103* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *M2-6:2 FTS* | *104* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *M2-8:2 FTS* | *110* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C3 HFPO-DA* | *90.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *d7-N-MeFOSE-M* | *70.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *d9-N-EtFOSE-M* | *68.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *d5-NEtPFOSA* | *74.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *D3-NMeFOSA* | *75.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |
| *13C2-PFDoDA* | *97.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:33* | *1* |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **6470** | | 10.4 | 9.0 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| Antimony | ND | | 15.6 | 0.55 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Arsenic** | **3.7** | | 2.1 | 0.92 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:28 | 1 |
| **Barium** | **51.2** | | 0.52 | 0.15 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Beryllium** | **0.30** | | 0.21 | 0.042 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Cadmium** | **0.15** | J | 0.21 | 0.073 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Calcium** | **154000** | | 260 | 140 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:50 | 5 |
| **Chromium** | **12.4** | | 0.52 | 0.37 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Cobalt** | **3.4** | | 0.52 | 0.10 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Copper** | **15.4** | | 1.0 | 0.59 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Iron** | **11500** | | 10.4 | 8.8 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Lead** | **13.2** | | 1.0 | 0.48 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Magnesium** | **25500** | | 20.8 | 8.8 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Manganese** | **236** | | 1.0 | 0.29 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Nickel** | **10.8** | | 5.2 | 0.26 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Potassium** | **1750** | | 31.2 | 25.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| Selenium | ND | | 4.2 | 0.83 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| Silver | ND | | 0.62 | 0.21 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Sodium** | **341** | | 146 | 63.8 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| Thallium | ND | | 6.2 | 0.79 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |

## Client Sample ID: PILE2-01-10282024
**Lab Sample ID: 480-224895-7**

**Date Collected: 10/28/24 14:00**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 96.2**

### Method: SW846 6010C - Metals (ICP) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Vanadium** | **13.4** | | 0.52 | 0.14 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |
| **Zinc** | **164** | | 2.1 | 1.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:47 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Mercury** | **2.1** | | 2.0 | 0.46 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 15:12 | 100 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total (SW846 9012B) | ND | | 1.0 | 0.49 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:23 | 1 |

## Client Sample ID: PILE2-02-10282024
**Lab Sample ID: 480-224895-8**

**Date Collected: 10/28/24 14:05**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.4 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.4 | 0.88 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.4 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.4 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.4 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.4 | 0.28 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.4 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 2.0 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.8 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Acetone | ND | vs | 27 | 4.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Benzene | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Bromodichloromethane | ND | vs | 5.4 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Bromoform | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Bromomethane | ND | vs | 5.4 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Carbon disulfide | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Carbon tetrachloride | ND | vs | 5.4 | 0.53 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Chlorobenzene | ND | vs | 5.4 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Dibromochloromethane | ND | vs | 5.4 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Chloroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| **Chloroform** | **0.80** | **J B vs** | 5.4 | 0.34 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Chloromethane | ND | vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.4 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.4 | 0.78 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Cyclohexane | ND | vs | 5.4 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.4 | 0.45 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Ethylbenzene | ND | vs | 5.4 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |

## Client Sample ID: PILE2-02-10282024

**Lab Sample ID: 480-224895-8**

**Date Collected: 10/28/24 14:05**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | ND | vs | 5.4 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Isopropylbenzene | ND | vs | 5.4 | 0.82 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Methyl acetate | ND | vs | 27 | 3.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.4 | 0.53 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Methylcyclohexane | ND | vs | 5.4 | 0.83 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| **Methylene Chloride** | **3.6** | **J vs** | 5.4 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Styrene | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Tetrachloroethene | ND | vs | 5.4 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Toluene | ND | vs | 5.4 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.4 | 0.56 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.4 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Trichloroethene | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Trichlorofluoromethane | ND | vs | 5.4 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Vinyl chloride | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.91 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 00:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 00:51* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 00:51* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 00:51* | *1* |
| *Dibromofluoromethane (Surr)* | *93* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 00:51* | *1* |

## Client Sample ID: PILE2-03-10282024

**Lab Sample ID: 480-224895-9**

**Date Collected: 10/28/24 14:10**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 96.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.0 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.0 | 0.81 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.0 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.0 | 0.30 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.0 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.0 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.0 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 2-Butanone (MEK) | ND | vs | 25 | 1.8 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 2-Hexanone | ND | vs | 25 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 25 | 1.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Acetone | ND | vs | 25 | 4.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Benzene | ND | vs | 5.0 | 0.24 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Bromodichloromethane | ND | vs | 5.0 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Bromoform | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Bromomethane | ND | vs | 5.0 | 0.45 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Carbon disulfide | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |

## Client Sample ID: PILE2-03-10282024

**Lab Sample ID: 480-224895-9**

**Date Collected: 10/28/24 14:10**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 96.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Carbon tetrachloride | ND | vs | 5.0 | 0.48 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Chlorobenzene | ND | vs | 5.0 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Dibromochloromethane | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Chloroethane | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| **Chloroform** | **0.56** | **J B vs** | 5.0 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Chloromethane | ND | vs | 5.0 | 0.30 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.0 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Cyclohexane | ND | vs | 5.0 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.0 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Ethylbenzene | ND | vs | 5.0 | 0.34 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Isopropylbenzene | ND | vs | 5.0 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Methyl acetate | ND | vs | 25 | 3.0 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.0 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Methylcyclohexane | ND | vs | 5.0 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| **Methylene Chloride** | **4.1** | **J vs** | 5.0 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Styrene | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Tetrachloroethene | ND | vs | 5.0 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Toluene | ND | vs | 5.0 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.0 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.0 | 2.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Trichloroethene | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Trichlorofluoromethane | ND | vs | 5.0 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Vinyl chloride | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.84 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *89* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 01:15* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 01:15* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 01:15* | *1* |
| *Dibromofluoromethane (Surr)* | *96* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 01:15* | *1* |

## Client Sample ID: PILE2-04-10282024

**Lab Sample ID: 480-224895-10**

**Date Collected: 10/28/24 14:15**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 92.6**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.85 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE2-04-10282024**
**Date Collected: 10/28/24 14:15**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-10**
**Matrix: Solid**
**Percent Solids: 92.6**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Benzene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Bromodichloromethane | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| **Chloroform** | **0.62** | **J B vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| **Methylene Chloride** | **5.6** | **vs** | 5.2 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Toluene | ND | vs | 5.2 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.54 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.88 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:39 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 01:39* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 01:39* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 01:39* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 01:39* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE3-01-10282024**
**Date Collected: 10/28/24 14:20**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-11**
**Matrix: Solid**
**Percent Solids: 96.0**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.84 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Benzene | ND | vs | 5.2 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Bromodichloromethane | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| **Chloroform** | **0.57** | **J B vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.78 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| **Methylene Chloride** | **3.7** | **J vs** | 5.2 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Toluene | ND | vs | 5.2 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.53 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.87 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:02 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE3-01-10282024**
**Date Collected: 10/28/24 14:20**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-11**
**Matrix: Solid**
**Percent Solids: 96.0**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 01:02* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 01:02* | *1* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 01:02* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 01:02* | *1* |

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Biphenyl** | **810** | **J** | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| bis (2-chloroisopropyl) ether | ND | | 3500 | 690 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2,4,5-Trichlorophenol | ND | | 3500 | 940 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2,4,6-Trichlorophenol | ND | | 3500 | 690 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2,4-Dichlorophenol | ND | | 3500 | 370 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2,4-Dimethylphenol | ND | | 3500 | 840 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2,4-Dinitrophenol | ND | | 34000 | 16000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2,4-Dinitrotoluene | ND | | 3500 | 720 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2,6-Dinitrotoluene | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2-Chloronaphthalene | ND | | 3500 | 570 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2-Chlorophenol | ND | | 6700 | 630 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **2-Methylnaphthalene** | **3500** | | 3500 | 690 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2-Methylphenol | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2-Nitroaniline | ND | | 6700 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 2-Nitrophenol | ND | | 3500 | 980 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 3,3'-Dichlorobenzidine | ND | | 6700 | 4100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 3-Nitroaniline | ND | | 6700 | 960 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4,6-Dinitro-2-methylphenol | ND | | 6700 | 3500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4-Bromophenyl phenyl ether | ND | | 3500 | 490 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4-Chloro-3-methylphenol | ND | | 3500 | 860 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4-Chloroaniline | ND | | 3500 | 860 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4-Chlorophenyl phenyl ether | ND | | 3500 | 430 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4-Methylphenol | ND | | 6700 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4-Nitroaniline | ND | | 6700 | 1800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| 4-Nitrophenol | ND | | 6700 | 2400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Acenaphthene** | **10000** | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Acenaphthylene | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Acetophenone | ND | | 3500 | 470 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Anthracene** | **17000** | | 3500 | 860 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Atrazine | ND | | 3500 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Benzaldehyde | ND | | 3500 | 2800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Benzo[a]anthracene** | **28000** | | 3500 | 350 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Benzo[a]pyrene** | **25000** | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Benzo[b]fluoranthene** | **28000** | | 3500 | 550 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Benzo[g,h,i]perylene** | **16000** | | 3500 | 370 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Benzo[k]fluoranthene** | **13000** | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Bis(2-chloroethoxy)methane | ND | | 3500 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Bis(2-chloroethyl)ether | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Bis(2-ethylhexyl) phthalate | ND | | 3500 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Butyl benzyl phthalate | ND | | 3500 | 570 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Caprolactam | ND | | 3500 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Carbazole** | **7800** | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Chrysene** | **26000** | | 3500 | 780 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |

**Client Sample ID: PILE3-01-10282024**
**Date Collected: 10/28/24 14:20**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-11**
**Matrix: Solid**
**Percent Solids: 96.0**

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-butyl phthalate | ND | | 3500 | 590 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Di-n-octyl phthalate | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Dibenz(a,h)anthracene** | **4800** | | 3500 | 610 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Dibenzofuran** | **5200** | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Diethyl phthalate | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Dimethyl phthalate | ND | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Fluoranthene** | **61000** | **E** | 3500 | 370 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Fluorene** | **8800** | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Hexachlorobenzene | ND | | 3500 | 470 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Hexachlorobutadiene | ND | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Hexachlorocyclopentadiene | ND | | 3500 | 470 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Hexachloroethane | ND | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Indeno[1,2,3-cd]pyrene** | **14000** | | 3500 | 430 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Isophorone | ND | | 3500 | 740 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| N-Nitrosodi-n-propylamine | ND | | 3500 | 590 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| N-Nitrosodiphenylamine | ND | | 3500 | 2800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Naphthalene** | **9200** | | 3500 | 450 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Nitrobenzene | ND | | 3500 | 390 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Pentachlorophenol | ND | | 6700 | 3500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Phenanthrene** | **54000** | | 3500 | 510 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| Phenol | ND | | 3500 | 530 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |
| **Pyrene** | **50000** | | 3500 | 410 | ug/Kg | ☼ | 10/29/24 17:50 | 10/30/24 23:31 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *94* | | *26 - 143* | *10/29/24 17:50* | *10/30/24 23:31* | *20* |
| *2-Fluorobiphenyl* | *73* | | *50 - 121* | *10/29/24 17:50* | *10/30/24 23:31* | *20* |
| *2-Fluorophenol* | *59* | | *36 - 120* | *10/29/24 17:50* | *10/30/24 23:31* | *20* |
| *Nitrobenzene-d5* | *73* | | *40 - 121* | *10/29/24 17:50* | *10/30/24 23:31* | *20* |
| *p-Terphenyl-d14* | *91* | | *46 - 143* | *10/29/24 17:50* | *10/30/24 23:31* | *20* |
| *Phenol-d5* | *60* | | *41 - 120* | *10/29/24 17:50* | *10/30/24 23:31* | *20* |

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 8700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| bis (2-chloroisopropyl) ether | ND | | 8700 | 1700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2,4,5-Trichlorophenol | ND | | 8700 | 2400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2,4,6-Trichlorophenol | ND | | 8700 | 1700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2,4-Dichlorophenol | ND | | 8700 | 920 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2,4-Dimethylphenol | ND | | 8700 | 2100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2,4-Dinitrophenol | ND | | 85000 | 40000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2,4-Dinitrotoluene | ND | | 8700 | 1800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2,6-Dinitrotoluene | ND | | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2-Chloronaphthalene | ND | | 8700 | 1400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2-Chlorophenol | ND | | 17000 | 1600 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **2-Methylnaphthalene** | **3400** | **J** | 8700 | 1700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2-Methylphenol | ND | | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2-Nitroaniline | ND | | 17000 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 2-Nitrophenol | ND | | 8700 | 2500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 3,3'-Dichlorobenzidine | ND | | 17000 | 10000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 3-Nitroaniline | ND | | 17000 | 2400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE3-01-10282024**
**Date Collected: 10/28/24 14:20**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-11**
**Matrix: Solid**
**Percent Solids: 96.0**

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,6-Dinitro-2-methylphenol | ND | | 17000 | 8700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 4-Bromophenyl phenyl ether | ND | | 8700 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 4-Chloro-3-methylphenol | ND | | 8700 | 2100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 4-Chloroaniline | ND | | 8700 | 2100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 4-Chlorophenyl phenyl ether | ND | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 4-Methylphenol | ND | | 17000 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 4-Nitroaniline | ND | | 17000 | 4500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| 4-Nitrophenol | ND | | 17000 | 6100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Acenaphthene** | **10000** | | 8700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Acenaphthylene | ND | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Acetophenone | ND | | 8700 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Anthracene** | **17000** | | 8700 | 2100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Atrazine | ND | | 8700 | 3000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Benzaldehyde | ND | | 8700 | 6900 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Benzo[a]anthracene** | **29000** | | 8700 | 870 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Benzo[a]pyrene** | **26000** | | 8700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Benzo[b]fluoranthene** | **31000** | | 8700 | 1400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Benzo[g,h,i]perylene** | **14000** | | 8700 | 920 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Benzo[k]fluoranthene** | **13000** | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Bis(2-chloroethoxy)methane | ND | | 8700 | 1800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Bis(2-chloroethyl)ether | ND | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Bis(2-ethylhexyl) phthalate | ND | | 8700 | 3000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Butyl benzyl phthalate | ND | | 8700 | 1400 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Caprolactam | ND | | 8700 | 2600 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Carbazole** | **7400** | **J** | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Chrysene** | **29000** | | 8700 | 1900 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Di-n-butyl phthalate | ND | | 8700 | 1500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Di-n-octyl phthalate | ND | | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Dibenz(a,h)anthracene** | **3200** | **J** | 8700 | 1500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Dibenzofuran** | **5200** | **J** | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Diethyl phthalate | ND | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Dimethyl phthalate | ND | | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Fluoranthene** | **59000** | | 8700 | 920 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Fluorene** | **9000** | | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Hexachlorobenzene | ND | | 8700 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Hexachlorobutadiene | ND | | 8700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Hexachlorocyclopentadiene | ND | | 8700 | 1200 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Hexachloroethane | ND | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Indeno[1,2,3-cd]pyrene** | **12000** | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Isophorone | ND | | 8700 | 1800 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| N-Nitrosodi-n-propylamine | ND | | 8700 | 1500 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| N-Nitrosodiphenylamine | ND | | 8700 | 7100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Naphthalene** | **9600** | | 8700 | 1100 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Nitrobenzene | ND | | 8700 | 970 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Pentachlorophenol | ND | | 17000 | 8700 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Phenanthrene** | **59000** | | 8700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| Phenol | ND | | 8700 | 1300 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |
| **Pyrene** | **55000** | | 8700 | 1000 | ug/Kg | ☼ | 10/29/24 17:50 | 10/31/24 11:48 | 50 |

**Client Sample ID: PILE3-01-10282024**
**Date Collected: 10/28/24 14:20**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-11**
**Matrix: Solid**
**Percent Solids: 96.0**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *28* | | *26 - 143* | *10/29/24 17:50* | *10/31/24 11:48* | *50* |
| *2-Fluorobiphenyl* | *81* | | *50 - 121* | *10/29/24 17:50* | *10/31/24 11:48* | *50* |
| *2-Fluorophenol* | *0* | *S1-* | *36 - 120* | *10/29/24 17:50* | *10/31/24 11:48* | *50* |
| *Nitrobenzene-d5* | *55* | | *40 - 121* | *10/29/24 17:50* | *10/31/24 11:48* | *50* |
| *p-Terphenyl-d14* | *92* | | *46 - 143* | *10/29/24 17:50* | *10/31/24 11:48* | *50* |
| *Phenol-d5* | *82* | | *41 - 120* | *10/29/24 17:50* | *10/31/24 11:48* | *50* |

## Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 34 | 6.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| **4,4'-DDE** | **11** | **J** | 34 | 7.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| **4,4'-DDT** | **26** | **J** | 34 | 8.0 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Aldrin | ND | | 34 | 8.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| **alpha-BHC** | **7.4** | **J B** | 34 | 6.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| cis-Chlordane | ND | | 34 | 17 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| beta-BHC | ND | | 34 | 6.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| **delta-BHC** | **7.3** | **J B** | 34 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Dieldrin | ND | | 34 | 8.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Endosulfan I | ND | | 34 | 6.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Endosulfan II | ND | | 34 | 6.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Endosulfan sulfate | ND | | 34 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Endrin | ND | | 34 | 6.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Endrin aldehyde | ND | | 34 | 8.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Endrin ketone | ND | | 34 | 8.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| gamma-BHC (Lindane) | ND | | 34 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| trans-Chlordane | ND | | 34 | 11 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Heptachlor | ND | | 34 | 7.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Heptachlor epoxide | ND | | 34 | 8.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Methoxychlor | ND | | 34 | 7.0 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |
| Toxaphene | ND | | 340 | 200 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:38 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *448* | *S1+* | *45 - 120* | *10/30/24 07:05* | *10/31/24 12:38* | *20* |
| *DCB Decachlorobiphenyl* | *888* | *S1+* | *45 - 120* | *10/30/24 07:05* | *10/31/24 12:38* | *20* |
| *Tetrachloro-m-xylene* | *122* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 12:38* | *20* |
| *Tetrachloro-m-xylene* | *114* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 12:38* | *20* |

## Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.18 | 0.035 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:39 | 1 |
| PCB-1221 | ND | | 0.18 | 0.035 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:39 | 1 |
| PCB-1232 | ND | | 0.18 | 0.035 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:39 | 1 |
| PCB-1242 | ND | | 0.18 | 0.035 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:39 | 1 |
| PCB-1248 | ND | | 0.18 | 0.035 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:39 | 1 |
| PCB-1254 | ND | | 0.18 | 0.085 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:39 | 1 |
| PCB-1260 | ND | | 0.18 | 0.085 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:39 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *105* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 07:39* | *1* |
| *Tetrachloro-m-xylene* | *84* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 07:39* | *1* |
| *DCB Decachlorobiphenyl* | *123* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 07:39* | *1* |

**Client Sample ID: PILE3-01-10282024**
**Date Collected: 10/28/24 14:20**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-11**
**Matrix: Solid**
**Percent Solids: 96.0**

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *91* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 07:39* | *1* |

### Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 17 | 5.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:46 | 1 |
| Silvex (2,4,5-TP) | ND | | 17 | 6.2 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:46 | 1 |
| 2,4-D | ND | | 17 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:46 | 1 |
| Dichlorprop | ND | | 17 | 8.6 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:46 | 1 |
| **Pentachlorophenol** | **10** | **J** | 17 | 5.6 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:46 | 1 |
| Picloram | ND | | 17 | 7.4 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 17:46 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *50* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 17:46* | *1* |
| *2,4-Dichlorophenylacetic acid* | *55* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 17:46* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.34 | 0.086 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **0.079** | **J** | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **0.34** | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE3-01-10282024**
**Date Collected: 10/28/24 14:20**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-11**
**Matrix: Solid**
**Percent Solids: 96.0**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.7 | 0.43 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.7 | 0.43 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.34 | 0.086 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.34 | 0.086 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.69 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.34 | 0.086 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.86 | 0.21 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.3 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.3 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.17 | 0.043 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.34 | 0.086 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 03:50 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *83.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C5 PFPeA* | *71.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C5 PFHxA* | *76.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C4 PFHpA* | *75.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C8 PFOA* | *78.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C9 PFNA* | *77.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C6 PFDA* | *76.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C7 PFUnA* | *75.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C2 PFTeDA* | *82.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C3 PFBS* | *75.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C3 PFHxS* | *77.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C8 PFOS* | *75.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C8 PFOSA* | *71.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *d3-NMeFOSAA* | *69.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *d5-NEtFOSAA* | *83.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *M2-4:2 FTS* | *90.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *M2-6:2 FTS* | *93.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *M2-8:2 FTS* | *102* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *13C3 HFPO-DA* | *75.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *d7-N-MeFOSE-M* | *59.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *d9-N-EtFOSE-M* | *64.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *d5-NEtPFOSA* | *80.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |
| *D3-NMeFOSA* | *65.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |

## Client Sample ID: PILE3-01-10282024

**Lab Sample ID: 480-224895-11**

**Date Collected: 10/28/24 14:20**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 96.0**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C2-PFDoDA* | *85.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 03:50* | *1* |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **8200** | | 10.4 | 8.9 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| Antimony | ND | | 15.6 | 0.55 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Arsenic** | **4.5** | | 2.1 | 0.91 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:30 | 1 |
| **Barium** | **308** | | 0.52 | 0.15 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Beryllium** | **0.66** | | 0.21 | 0.041 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Cadmium** | **1.2** | | 0.21 | 0.073 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Calcium** | **153000** | | 259 | 140 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:52 | 5 |
| **Chromium** | **28.2** | | 0.52 | 0.37 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Cobalt** | **8.6** | | 0.52 | 0.10 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Copper** | **63.4** | | 1.0 | 0.59 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Iron** | **23100** | | 10.4 | 8.8 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Lead** | **324** | | 1.0 | 0.48 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Magnesium** | **34200** | | 20.7 | 8.8 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Manganese** | **643** | | 1.0 | 0.29 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Nickel** | **20.6** | | 5.2 | 0.26 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Potassium** | **1860** | | 31.1 | 25.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| Selenium | ND | | 4.1 | 0.83 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Silver** | **0.29** | **J** | 0.62 | 0.21 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Sodium** | **316** | | 145 | 63.6 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| Thallium | ND | | 6.2 | 0.79 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Vanadium** | **12.9** | | 0.52 | 0.13 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |
| **Zinc** | **371** | | 2.1 | 1.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:49 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Mercury** | **0.70** | | 0.022 | 0.0050 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:24 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Cyanide, Total (SW846 9012B)** | **1.1** | | 1.0 | 0.49 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:23 | 1 |

## Client Sample ID: PILE3-02-10282024

**Lab Sample ID: 480-224895-12**

**Date Collected: 10/28/24 14:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.4 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.4 | 0.87 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.4 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.4 | 0.42 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |

**Client Sample ID: PILE3-02-10282024**
**Date Collected: 10/28/24 14:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-12**
**Matrix: Solid**
**Percent Solids: 91.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.4 | 0.28 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.4 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 2.0 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.8 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Acetone | ND | vs | 27 | 4.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Benzene | ND | vs | 5.4 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Bromodichloromethane | ND | vs | 5.4 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Bromoform | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Bromomethane | ND | vs | 5.4 | 0.48 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Carbon disulfide | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Carbon tetrachloride | ND | vs | 5.4 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Chlorobenzene | ND | vs | 5.4 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Dibromochloromethane | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Chloroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| **Chloroform** | **0.61** | **J B vs** | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Chloromethane | ND | vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.4 | 0.78 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Cyclohexane | ND | vs | 5.4 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.4 | 0.45 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Ethylbenzene | ND | vs | 5.4 | 0.37 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Isopropylbenzene | ND | vs | 5.4 | 0.81 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Methyl acetate | ND | vs | 27 | 3.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.4 | 0.53 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Methylcyclohexane | ND | vs | 5.4 | 0.82 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Methylene Chloride | ND | vs | 5.4 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Styrene | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Tetrachloroethene | ND | vs | 5.4 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Toluene | ND | vs | 5.4 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.4 | 0.56 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.4 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Trichloroethene | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Trichlorofluoromethane | ND | vs | 5.4 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Vinyl chloride | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.91 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *91* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 01:26* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 01:26* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 01:26* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 01:26* | *1* |

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 180 | 27 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| bis (2-chloroisopropyl) ether | ND | | 180 | 37 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2,4,5-Trichlorophenol | ND | | 180 | 49 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE3-02-10282024**
**Date Collected: 10/28/24 14:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-12**
**Matrix: Solid**
**Percent Solids: 91.2**

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,6-Trichlorophenol | ND | | 180 | 37 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2,4-Dichlorophenol | ND | | 180 | 19 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2,4-Dimethylphenol | ND | | 180 | 44 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2,4-Dinitrophenol | ND | | 1800 | 840 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2,4-Dinitrotoluene | ND | | 180 | 38 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2,6-Dinitrotoluene | ND | | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2-Chloronaphthalene | ND | | 180 | 30 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2-Chlorophenol | ND | | 350 | 33 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2-Methylnaphthalene | ND | | 180 | 37 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2-Methylphenol | ND | | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2-Nitroaniline | ND | | 350 | 27 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 2-Nitrophenol | ND | | 180 | 52 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 3,3'-Dichlorobenzidine | ND | | 350 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 3-Nitroaniline | ND | | 350 | 51 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4,6-Dinitro-2-methylphenol | ND | | 350 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4-Bromophenyl phenyl ether | ND | | 180 | 26 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4-Chloro-3-methylphenol | ND | | 180 | 45 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4-Chloroaniline | ND | | 180 | 45 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4-Chlorophenyl phenyl ether | ND | | 180 | 23 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4-Methylphenol | ND | | 350 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4-Nitroaniline | ND | | 350 | 96 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| 4-Nitrophenol | ND | | 350 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Acenaphthene | ND | | 180 | 27 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Acenaphthylene | ND | | 180 | 24 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Acetophenone | ND | | 180 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Anthracene | ND | | 180 | 45 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Atrazine | ND | | 180 | 63 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Benzaldehyde | ND | | 180 | 150 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Benzo[a]anthracene** | **85** | **J** | 180 | 18 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Benzo[a]pyrene** | **72** | **J** | 180 | 27 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Benzo[b]fluoranthene** | **100** | **J** | 180 | 29 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Benzo[g,h,i]perylene** | **48** | **J** | 180 | 19 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Benzo[k]fluoranthene** | **43** | **J** | 180 | 24 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Bis(2-chloroethoxy)methane | ND | | 180 | 39 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Bis(2-chloroethyl)ether | ND | | 180 | 24 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Bis(2-ethylhexyl) phthalate | ND | | 180 | 62 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Butyl benzyl phthalate | ND | | 180 | 30 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Caprolactam | ND | | 180 | 55 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Carbazole | ND | | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Chrysene** | **100** | **J** | 180 | 41 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Di-n-butyl phthalate | ND | | 180 | 31 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Di-n-octyl phthalate | ND | *+ | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Dibenz(a,h)anthracene | ND | | 180 | 32 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Dibenzofuran | ND | | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Diethyl phthalate | ND | | 180 | 24 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Dimethyl phthalate | ND | | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Fluoranthene** | **140** | **J** | 180 | 19 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Fluorene | ND | | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Hexachlorobenzene | ND | | 180 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |

**Client Sample ID: PILE3-02-10282024**
**Lab Sample ID: 480-224895-12**
**Date Collected: 10/28/24 14:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.2**

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | ND | | 180 | 27 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Hexachlorocyclopentadiene | ND | | 180 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Hexachloroethane | ND | | 180 | 24 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Indeno[1,2,3-cd]pyrene** | **38** | **J** | 180 | 23 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Isophorone | ND | | 180 | 39 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| N-Nitrosodi-n-propylamine | ND | | 180 | 31 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| N-Nitrosodiphenylamine | ND | | 180 | 150 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Naphthalene** | **43** | **J** | 180 | 24 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Nitrobenzene | ND | | 180 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Pentachlorophenol | ND | | 350 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Phenanthrene** | **120** | **J** | 180 | 27 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| Phenol | ND | | 180 | 28 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |
| **Pyrene** | **140** | **J** | 180 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:25 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *43* | | *26 - 143* | *10/30/24 07:13* | *10/31/24 16:25* | *1* |
| *2-Fluorobiphenyl* | *79* | | *50 - 121* | *10/30/24 07:13* | *10/31/24 16:25* | *1* |
| *2-Fluorophenol* | *65* | | *36 - 120* | *10/30/24 07:13* | *10/31/24 16:25* | *1* |
| *Nitrobenzene-d5* | *74* | | *40 - 121* | *10/30/24 07:13* | *10/31/24 16:25* | *1* |
| *p-Terphenyl-d14* | *89* | | *46 - 143* | *10/30/24 07:13* | *10/31/24 16:25* | *1* |
| *Phenol-d5* | *67* | | *41 - 120* | *10/30/24 07:13* | *10/31/24 16:25* | *1* |

## Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 1.8 | 0.35 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| **4,4'-DDE** | **0.57** | **J** | 1.8 | 0.38 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| **4,4'-DDT** | **0.61** | **J** | 1.8 | 0.42 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Aldrin | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| **alpha-BHC** | **0.36** | **J B** | 1.8 | 0.32 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| cis-Chlordane | ND | | 1.8 | 0.89 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| beta-BHC | ND | | 1.8 | 0.32 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| delta-BHC | ND | | 1.8 | 0.33 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Dieldrin | ND | | 1.8 | 0.43 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Endosulfan I | ND | | 1.8 | 0.34 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Endosulfan II | ND | | 1.8 | 0.32 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Endosulfan sulfate | ND | | 1.8 | 0.33 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Endrin | ND | | 1.8 | 0.36 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Endrin aldehyde | ND | | 1.8 | 0.46 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| **Endrin ketone** | **0.66** | **J** | 1.8 | 0.44 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| gamma-BHC (Lindane) | ND | | 1.8 | 0.33 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| trans-Chlordane | ND | | 1.8 | 0.57 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Heptachlor | ND | | 1.8 | 0.39 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Heptachlor epoxide | ND | | 1.8 | 0.46 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Methoxychlor | ND | | 1.8 | 0.37 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |
| Toxaphene | ND | | 18 | 10 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 12:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *484* | *S1+* | *45 - 120* | *10/30/24 07:05* | *10/31/24 12:57* | *1* |
| *DCB Decachlorobiphenyl* | *95* | | *45 - 120* | *10/30/24 07:05* | *10/31/24 12:57* | *1* |
| *Tetrachloro-m-xylene* | *63* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 12:57* | *1* |

**Client Sample ID: PILE3-02-10282024**
**Date Collected: 10/28/24 14:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-12**
**Matrix: Solid**
**Percent Solids: 91.2**

### Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *57* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 12:57* | *1* |

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:57 | 1 |
| PCB-1221 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:57 | 1 |
| PCB-1232 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:57 | 1 |
| PCB-1242 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:57 | 1 |
| PCB-1248 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:57 | 1 |
| PCB-1254 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:57 | 1 |
| PCB-1260 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 07:57 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *117* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 07:57* | *1* |
| *Tetrachloro-m-xylene* | *90* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 07:57* | *1* |
| *DCB Decachlorobiphenyl* | *107* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 07:57* | *1* |
| *DCB Decachlorobiphenyl* | *84* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 07:57* | *1* |

### Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 18 | 5.8 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:04 | 1 |
| Silvex (2,4,5-TP) | ND | | 18 | 6.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:04 | 1 |
| 2,4-D | ND | | 18 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:04 | 1 |
| Dichlorprop | ND | | 18 | 9.0 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:04 | 1 |
| Pentachlorophenol | ND | | 18 | 5.9 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:04 | 1 |
| Picloram | ND | | 18 | 7.8 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:04 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *60* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 18:04* | *1* |
| *2,4-Dichlorophenylacetic acid* | *60* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 18:04* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.36 | 0.090 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorooctanoic acid (PFOA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |

**Client Sample ID: PILE3-02-10282024**
**Date Collected: 10/28/24 14:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-12**
**Matrix: Solid**
**Percent Solids: 91.2**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.8 | 0.45 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.8 | 0.45 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.36 | 0.090 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.36 | 0.090 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.72 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.36 | 0.090 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.90 | 0.23 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.5 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.5 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.18 | 0.045 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.36 | 0.090 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:07 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *86.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |
| *13C5 PFPeA* | *72.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |
| *13C5 PFHxA* | *75.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |
| *13C4 PFHpA* | *80.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |
| *13C8 PFOA* | *79.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |
| *13C9 PFNA* | *78.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |
| *13C6 PFDA* | *85.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |
| *13C7 PFUnA* | *79.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:07* | *1* |

**Client Sample ID: PILE3-02-10282024**
**Date Collected: 10/28/24 14:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-12**
**Matrix: Solid**
**Percent Solids: 91.2**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Isotope Dilution | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 13C2 PFTeDA | 78.4 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 13C3 PFBS | 79.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 13C3 PFHxS | 78.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 13C8 PFOS | 75.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 13C8 PFOSA | 62.4 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| d3-NMeFOSAA | 61.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| d5-NEtFOSAA | 67.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| M2-4:2 FTS | 87.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| M2-6:2 FTS | 83.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| M2-8:2 FTS | 83.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 13C3 HFPO-DA | 79.1 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| d7-N-MeFOSE-M | 68.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| d9-N-EtFOSE-M | 63.8 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| d5-NEtPFOSA | 58.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| D3-NMeFOSA | 58.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |
| 13C2-PFDoDA | 81.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 04:07 | 1 |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 5010 | | 10.8 | 9.3 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Antimony | 2.2 | J | 16.2 | 0.57 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Arsenic | 15.5 | | 2.2 | 0.95 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:32 | 1 |
| Barium | 40.2 | | 0.54 | 0.15 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Beryllium | 0.30 | | 0.22 | 0.043 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Cadmium | 0.16 | J | 0.22 | 0.076 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Calcium | 71300 | | 53.9 | 29.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Chromium | 25.0 | | 0.54 | 0.39 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Cobalt | 12.6 | | 0.54 | 0.11 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Copper | 68.4 | | 1.1 | 0.61 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Iron | 88900 | | 53.9 | 45.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:54 | 5 |
| Lead | 13.0 | | 5.4 | 2.5 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:54 | 5 |
| Magnesium | 152000 | | 108 | 45.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:54 | 5 |
| Manganese | 581 | | 1.1 | 0.30 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Nickel | 19.4 | | 5.4 | 0.27 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Potassium | 1330 | | 32.4 | 26.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Selenium | ND | | 4.3 | 0.86 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Silver | 0.29 | J | 0.65 | 0.22 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Sodium | 281 | | 151 | 66.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Thallium | ND | | 6.5 | 0.82 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Vanadium | 19.2 | | 0.54 | 0.14 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |
| Zinc | 105 | | 2.2 | 1.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:51 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.012 | J | 0.023 | 0.0053 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:26 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total (SW846 9012B) | ND | | 0.93 | 0.45 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:23 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE3-03-10282024**
**Date Collected: 10/28/24 14:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-13**
**Matrix: Solid**
**Percent Solids: 94.4**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.3 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.3 | 0.85 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.3 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Benzene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Bromodichloromethane | ND | vs | 5.3 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Bromoform | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Bromomethane | ND | vs | 5.3 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Carbon disulfide | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Carbon tetrachloride | ND | vs | 5.3 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Chlorobenzene | ND | vs | 5.3 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Dibromochloromethane | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Chloroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| **Chloroform** | **0.71** | **J B vs** | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Chloromethane | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.3 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Cyclohexane | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.3 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Ethylbenzene | ND | vs | 5.3 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Isopropylbenzene | ND | vs | 5.3 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Methyl acetate | ND | vs | 26 | 3.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Methylcyclohexane | ND | vs | 5.3 | 0.80 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Methylene Chloride | ND | vs | 5.3 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Styrene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Tetrachloroethene | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Toluene | ND | vs | 5.3 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.3 | 0.54 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.3 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Trichloroethene | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Trichlorofluoromethane | ND | vs | 5.3 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Vinyl chloride | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.88 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 01:50 | 1 |

## Client Sample ID: PILE3-03-10282024

**Lab Sample ID: 480-224895-13**

**Date Collected: 10/28/24 14:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.4**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 01:50* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 01:50* | *1* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 01:50* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 01:50* | *1* |

## Client Sample ID: PILE3-04-10282024

**Lab Sample ID: 480-224895-14**

**Date Collected: 10/28/24 14:35**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.1 | 0.37 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.1 | 0.83 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.1 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.1 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.1 | 0.62 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.1 | 0.63 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.1 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.1 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.1 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.1 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.1 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Acetone | ND | vs | 26 | 4.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Benzene | ND | vs | 5.1 | 0.25 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Bromodichloromethane | ND | vs | 5.1 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Bromoform | ND | vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Bromomethane | ND | vs | 5.1 | 0.46 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Carbon disulfide | ND | vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Carbon tetrachloride | ND | vs | 5.1 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Chlorobenzene | ND | vs | 5.1 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Dibromochloromethane | ND | vs | 5.1 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Chloroethane | ND | vs | 5.1 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| **Chloroform** | **0.51** | **J B vs** | 5.1 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Chloromethane | ND | vs | 5.1 | 0.31 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.1 | 0.65 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.1 | 0.74 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Cyclohexane | ND | vs | 5.1 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.1 | 0.42 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Ethylbenzene | ND | vs | 5.1 | 0.35 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.1 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Isopropylbenzene | ND | vs | 5.1 | 0.77 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.1 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Methylcyclohexane | ND | vs | 5.1 | 0.78 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| **Methylene Chloride** | **3.3** | **J vs** | 5.1 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |

## Client Sample ID: PILE3-04-10282024

**Lab Sample ID: 480-224895-14**

**Date Collected: 10/28/24 14:35**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Styrene | ND | vs | 5.1 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Tetrachloroethene | ND | vs | 5.1 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Toluene | ND | vs | 5.1 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.1 | 0.53 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.1 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Trichloroethene | ND | vs | 5.1 | 1.1 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Trichlorofluoromethane | ND | vs | 5.1 | 0.48 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Vinyl chloride | ND | vs | 5.1 | 0.62 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.86 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 02:14 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *91* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 02:14* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 02:14* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 02:14* | *1* |
| *Dibromofluoromethane (Surr)* | *93* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 02:14* | *1* |

## Client Sample ID: PILE3-05-10282024

**Lab Sample ID: 480-224895-15**

**Date Collected: 10/28/24 14:40**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 93.9**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.3 | 0.39 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.3 | 0.86 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.3 | 0.69 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.3 | 0.42 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.3 | 0.75 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 1.9 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Acetone | ND | vs | 27 | 4.5 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Benzene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Bromodichloromethane | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Bromoform | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Bromomethane | ND | vs | 5.3 | 0.48 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Carbon disulfide | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Carbon tetrachloride | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Chlorobenzene | ND | vs | 5.3 | 0.70 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Dibromochloromethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Chloroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| **Chloroform** | **0.44** | **J B vs** | 5.3 | 0.33 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Chloromethane | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |

**Client Sample ID: PILE3-05-10282024** — **Lab Sample ID: 480-224895-15**
**Date Collected: 10/28/24 14:40** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 93.9**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.3 | 0.77 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Cyclohexane | ND | vs | 5.3 | 0.75 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.3 | 0.44 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Ethylbenzene | ND | vs | 5.3 | 0.37 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Isopropylbenzene | ND | vs | 5.3 | 0.80 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Methyl acetate | ND | vs | 27 | 3.2 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Methylcyclohexane | ND | vs | 5.3 | 0.81 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| **Methylene Chloride** | **3.6** | **J vs** | 5.3 | 2.5 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Styrene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Tetrachloroethene | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| **Toluene** | **1.4** | **J vs** | 5.3 | 0.40 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.3 | 0.55 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.3 | 2.3 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Trichloroethene | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Trichlorofluoromethane | ND | vs | 5.3 | 0.50 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Vinyl chloride | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.89 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *95* | | *71 - 125* | *11/03/24 16:37* | *11/03/24 20:28* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *64 - 126* | *11/03/24 16:37* | *11/03/24 20:28* | *1* |
| *4-Bromofluorobenzene (Surr)* | *86* | | *72 - 126* | *11/03/24 16:37* | *11/03/24 20:28* | *1* |
| *Dibromofluoromethane (Surr)* | *91* | | *60 - 140* | *11/03/24 16:37* | *11/03/24 20:28* | *1* |

**Client Sample ID: PILE3-06-10282024** — **Lab Sample ID: 480-224895-16**
**Date Collected: 10/28/24 14:45** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 94.0**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.3 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.3 | 0.85 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.3 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |

**Client Sample ID: PILE3-06-10282024**
**Date Collected: 10/28/24 14:45**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-16**
**Matrix: Solid**
**Percent Solids: 94.0**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Bromodichloromethane | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Bromoform | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Bromomethane | ND | vs | 5.3 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Carbon disulfide | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Carbon tetrachloride | ND | vs | 5.3 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Chlorobenzene | ND | vs | 5.3 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Dibromochloromethane | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Chloroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| **Chloroform** | **0.57** | **J B vs** | 5.3 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Chloromethane | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.3 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Cyclohexane | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.3 | 0.44 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Ethylbenzene | ND | vs | 5.3 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Isopropylbenzene | ND | vs | 5.3 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Methyl acetate | ND | vs | 26 | 3.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Methylcyclohexane | ND | vs | 5.3 | 0.80 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| **Methylene Chloride** | **3.9** | **J vs** | 5.3 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Styrene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Tetrachloroethene | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Toluene | ND | vs | 5.3 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.3 | 0.54 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.3 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Trichloroethene | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Trichlorofluoromethane | ND | vs | 5.3 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Vinyl chloride | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.89 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:01 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *91* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 03:01* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 03:01* | *1* |
| *4-Bromofluorobenzene (Surr)* | *81* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 03:01* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 03:01* | *1* |

**Client Sample ID: PILE3-07-10282024**
**Date Collected: 10/28/24 14:50**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-17**
**Matrix: Solid**
**Percent Solids: 93.7**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.3 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.3 | 0.85 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE3-07-10282024**
**Date Collected: 10/28/24 14:50**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-17**
**Matrix: Solid**
**Percent Solids: 93.7**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.3 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Benzene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Bromodichloromethane | ND | vs | 5.3 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Bromoform | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Bromomethane | ND | vs | 5.3 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Carbon disulfide | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Carbon tetrachloride | ND | vs | 5.3 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Chlorobenzene | ND | vs | 5.3 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Dibromochloromethane | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Chloroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| **Chloroform** | **0.62** | **J B vs** | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Chloromethane | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.3 | 0.76 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Cyclohexane | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.3 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Ethylbenzene | ND | vs | 5.3 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.3 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Isopropylbenzene | ND | vs | 5.3 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Methyl acetate | ND | vs | 26 | 3.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Methylcyclohexane | ND | vs | 5.3 | 0.80 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| **Methylene Chloride** | **2.8** | **J vs** | 5.3 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Styrene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Tetrachloroethene | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Toluene | ND | vs | 5.3 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.3 | 0.54 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.3 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Trichloroethene | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Trichlorofluoromethane | ND | vs | 5.3 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Vinyl chloride | ND | vs | 5.3 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.88 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:25 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 03:25* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 03:25* | *1* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 03:25* | *1* |
| *Dibromofluoromethane (Surr)* | *96* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 03:25* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE4-01-10282024**
**Date Collected: 10/28/24 14:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-18**
**Matrix: Solid**
**Percent Solids: 94.2**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.85 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Benzene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Bromodichloromethane | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Chloroform | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Methyl acetate | ND | vs | 26 | 3.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.80 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| **Methylene Chloride** | **2.8** | **J vs** | 5.2 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Toluene | ND | vs | 5.2 | 0.40 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.54 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.88 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 03:49 | 1 |

**Client Sample ID: PILE4-01-10282024**
**Date Collected: 10/28/24 14:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-18**
**Matrix: Solid**
**Percent Solids: 94.2**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 03:49* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 03:49* | *1* |
| *4-Bromofluorobenzene (Surr)* | *85* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 03:49* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 03:49* | *1* |

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 890 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| bis (2-chloroisopropyl) ether | ND | | 890 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2,4,5-Trichlorophenol | ND | | 890 | 240 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2,4,6-Trichlorophenol | ND | | 890 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2,4-Dichlorophenol | ND | | 890 | 94 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2,4-Dimethylphenol | ND | | 890 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2,4-Dinitrophenol | ND | | 8700 | 4100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2,4-Dinitrotoluene | ND | | 890 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2,6-Dinitrotoluene | ND | | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2-Chloronaphthalene | ND | | 890 | 150 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2-Chlorophenol | ND | | 1700 | 160 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2-Methylnaphthalene | ND | | 890 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2-Methylphenol | ND | | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2-Nitroaniline | ND | | 1700 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 2-Nitrophenol | ND | | 890 | 250 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 3,3'-Dichlorobenzidine | ND | | 1700 | 1000 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 3-Nitroaniline | ND | | 1700 | 250 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4,6-Dinitro-2-methylphenol | ND | | 1700 | 890 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4-Bromophenyl phenyl ether | ND | | 890 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4-Chloro-3-methylphenol | ND | | 890 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4-Chloroaniline | ND | | 890 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4-Chlorophenyl phenyl ether | ND | | 890 | 110 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4-Methylphenol | ND | | 1700 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4-Nitroaniline | ND | | 1700 | 470 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| 4-Nitrophenol | ND | | 1700 | 620 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Acenaphthene | ND | | 890 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Acenaphthylene | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Acetophenone | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Anthracene | ND | | 890 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Atrazine | ND | | 890 | 310 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Benzaldehyde | ND | | 890 | 710 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Benzo[a]anthracene** | **950** | | 890 | 89 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Benzo[a]pyrene** | **960** | | 890 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Benzo[b]fluoranthene** | **1400** | | 890 | 140 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Benzo[g,h,i]perylene** | **760** | **J** | 890 | 94 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Benzo[k]fluoranthene** | **590** | **J** | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Bis(2-chloroethoxy)methane | ND | | 890 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Bis(2-chloroethyl)ether | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Bis(2-ethylhexyl) phthalate | ND | | 890 | 300 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Butyl benzyl phthalate | ND | | 890 | 150 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Caprolactam | ND | | 890 | 270 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Carbazole** | **130** | **J** | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Chrysene** | **1200** | | 890 | 200 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |

**Client Sample ID: PILE4-01-10282024**
**Date Collected: 10/28/24 14:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-18**
**Matrix: Solid**
**Percent Solids: 94.2**

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-butyl phthalate | ND | | 890 | 150 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Di-n-octyl phthalate | ND | *+ | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Dibenz(a,h)anthracene | ND | | 890 | 160 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Dibenzofuran | ND | | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Diethyl phthalate | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Dimethyl phthalate | ND | | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Fluoranthene** | **2100** | | 890 | 94 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Fluorene | ND | | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Hexachlorobenzene | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Hexachlorobutadiene | ND | | 890 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Hexachlorocyclopentadiene | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Hexachloroethane | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Indeno[1,2,3-cd]pyrene** | **620** | **J** | 890 | 110 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Isophorone | ND | | 890 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| N-Nitrosodi-n-propylamine | ND | | 890 | 150 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| N-Nitrosodiphenylamine | ND | | 890 | 720 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Naphthalene | ND | | 890 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Nitrobenzene | ND | | 890 | 99 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Pentachlorophenol | ND | | 1700 | 890 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Phenanthrene** | **920** | | 890 | 130 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| Phenol | ND | | 890 | 140 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |
| **Pyrene** | **1900** | | 890 | 100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 16:53 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *25* | *S1-* | *26 - 143* | *10/30/24 07:13* | *10/31/24 16:53* | *5* |
| *2-Fluorobiphenyl* | *75* | | *50 - 121* | *10/30/24 07:13* | *10/31/24 16:53* | *5* |
| *2-Fluorophenol* | *60* | | *36 - 120* | *10/30/24 07:13* | *10/31/24 16:53* | *5* |
| *Nitrobenzene-d5* | *63* | | *40 - 121* | *10/30/24 07:13* | *10/31/24 16:53* | *5* |
| *p-Terphenyl-d14* | *78* | | *46 - 143* | *10/30/24 07:13* | *10/31/24 16:53* | *5* |
| *Phenol-d5* | *63* | | *41 - 120* | *10/30/24 07:13* | *10/31/24 16:53* | *5* |

### Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 35 | 6.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| 4,4'-DDE | ND | | 35 | 7.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| 4,4'-DDT | ND | | 35 | 8.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Aldrin | ND | | 35 | 8.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| alpha-BHC | ND | | 35 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| cis-Chlordane | ND | | 35 | 18 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| beta-BHC | ND | | 35 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| delta-BHC | ND | | 35 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Dieldrin | ND | | 35 | 8.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Endosulfan I | ND | | 35 | 6.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Endosulfan II | ND | | 35 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Endosulfan sulfate | ND | | 35 | 6.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Endrin | ND | | 35 | 7.0 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Endrin aldehyde | ND | | 35 | 9.0 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Endrin ketone | ND | | 35 | 8.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| gamma-BHC (Lindane) | ND | | 35 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| trans-Chlordane | ND | | 35 | 11 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE4-01-10282024**
**Date Collected: 10/28/24 14:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-18**
**Matrix: Solid**
**Percent Solids: 94.2**

### Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Heptachlor | ND | | 35 | 7.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Heptachlor epoxide | ND | | 35 | 9.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Methoxychlor | ND | | 35 | 7.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |
| Toxaphene | ND | | 350 | 200 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:17 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 13:17* | *20* |
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 13:17* | *20* |
| *Tetrachloro-m-xylene* | *130* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 13:17* | *20* |
| *Tetrachloro-m-xylene* | *222* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 13:17* | *20* |

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.23 | 0.046 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:15 | 1 |
| PCB-1221 | ND | | 0.23 | 0.046 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:15 | 1 |
| PCB-1232 | ND | | 0.23 | 0.046 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:15 | 1 |
| PCB-1242 | ND | | 0.23 | 0.046 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:15 | 1 |
| PCB-1248 | ND | | 0.23 | 0.046 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:15 | 1 |
| PCB-1254 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:15 | 1 |
| PCB-1260 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *113* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 08:15* | *1* |
| *Tetrachloro-m-xylene* | *88* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 08:15* | *1* |
| *DCB Decachlorobiphenyl* | *106* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 08:15* | *1* |
| *DCB Decachlorobiphenyl* | *73* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 08:15* | *1* |

### Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 17 | 5.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:23 | 1 |
| Silvex (2,4,5-TP) | ND | | 17 | 6.2 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:23 | 1 |
| 2,4-D | ND | | 17 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:23 | 1 |
| Dichlorprop | ND | | 17 | 8.6 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:23 | 1 |
| Pentachlorophenol | ND | | 17 | 5.6 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:23 | 1 |
| Picloram | ND | | 17 | 7.4 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *34* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 18:23* | *1* |
| *2,4-Dichlorophenylacetic acid* | *41* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 18:23* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **0.11** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE4-01-10282024**
**Date Collected: 10/28/24 14:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-18**
**Matrix: Solid**
**Percent Solids: 94.2**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **0.14** | **J** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.71 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.88 | 0.22 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:23 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE4-01-10282024**
**Date Collected: 10/28/24 14:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-18**
**Matrix: Solid**
**Percent Solids: 94.2**

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *87.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C5 PFPeA* | *79.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C5 PFHxA* | *80.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C4 PFHpA* | *81.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C8 PFOA* | *79.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C9 PFNA* | *81.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C6 PFDA* | *76.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C7 PFUnA* | *79.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C2 PFTeDA* | *89.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C3 PFBS* | *79.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C3 PFHxS* | *78.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C8 PFOS* | *81.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C8 PFOSA* | *67.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *d3-NMeFOSAA* | *74.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *d5-NEtFOSAA* | *80.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *M2-4:2 FTS* | *90.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *M2-6:2 FTS* | *101* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *M2-8:2 FTS* | *100* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C3 HFPO-DA* | *79.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *d7-N-MeFOSE-M* | *57.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *d9-N-EtFOSE-M* | *56.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *d5-NEtPFOSA* | *61.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *D3-NMeFOSA* | *66.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |
| *13C2-PFDoDA* | *85.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:23* | *1* |

**Method: SW846 6010C - Metals (ICP)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **7880** | | 10.3 | 8.9 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| Antimony | ND | | 15.5 | 0.55 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Arsenic** | **5.7** | | 2.1 | 0.91 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:34 | 1 |
| **Barium** | **56.0** | | 0.52 | 0.14 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Beryllium** | **0.50** | | 0.21 | 0.041 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Cadmium** | **0.60** | | 0.21 | 0.072 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Calcium** | **152000** | | 258 | 139 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:56 | 5 |
| **Chromium** | **30.3** | | 0.52 | 0.37 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Cobalt** | **6.9** | | 0.52 | 0.10 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Copper** | **41.8** | | 1.0 | 0.59 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Iron** | **27700** | | 10.3 | 8.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Lead** | **63.5** | | 1.0 | 0.47 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Magnesium** | **27700** | | 20.6 | 8.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Manganese** | **461** | | 1.0 | 0.29 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Nickel** | **28.1** | | 5.2 | 0.26 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Potassium** | **2180** | | 30.9 | 25.0 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| Selenium | ND | | 4.1 | 0.82 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Silver** | **0.25** | **J** | 0.62 | 0.21 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Sodium** | **2540** | | 144 | 63.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| Thallium | ND | | 6.2 | 0.78 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Vanadium** | **14.4** | | 0.52 | 0.13 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |
| **Zinc** | **114** | | 2.1 | 1.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:52 | 1 |

## Client Sample ID: PILE4-01-10282024

**Lab Sample ID: 480-224895-18**

**Date Collected: 10/28/24 14:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.2**

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Mercury** | **0.41** | | 0.021 | 0.0048 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:30 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Cyanide, Total (SW846 9012B)** | **1.2** | | 0.97 | 0.47 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:26 | 1 |

## Client Sample ID: PILE4-02-10282024

**Lab Sample ID: 480-224895-19**

**Date Collected: 10/28/24 15:00**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.84 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.40 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.72 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| **Acetone** | **12** | **J vs** | 26 | 4.4 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Benzene | ND | vs | 5.2 | 0.25 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Bromodichloromethane | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| **Chloroform** | **0.53** | **J B vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.74 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.72 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.66 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.78 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |

**Client Sample ID: PILE4-02-10282024**
**Date Collected: 10/28/24 15:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-19**
**Matrix: Solid**
**Percent Solids: 95.4**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Methylene Chloride** | **3.9** | **J vs** | 5.2 | 2.4 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Toluene | ND | vs | 5.2 | 0.39 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.53 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.1 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.63 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.87 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:36* | *11/03/24 04:13* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *64 - 126* | *11/01/24 11:36* | *11/03/24 04:13* | *1* |
| *4-Bromofluorobenzene (Surr)* | *85* | | *72 - 126* | *11/01/24 11:36* | *11/03/24 04:13* | *1* |
| *Dibromofluoromethane (Surr)* | *93* | | *60 - 140* | *11/01/24 11:36* | *11/03/24 04:13* | *1* |

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| bis (2-chloroisopropyl) ether | ND | | 1800 | 350 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2,4,5-Trichlorophenol | ND | | 1800 | 480 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2,4,6-Trichlorophenol | ND | | 1800 | 350 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2,4-Dichlorophenol | ND | | 1800 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2,4-Dimethylphenol | ND | | 1800 | 430 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2,4-Dinitrophenol | ND | | 17000 | 8200 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2,4-Dinitrotoluene | ND | | 1800 | 370 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2,6-Dinitrotoluene | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2-Chloronaphthalene | ND | | 1800 | 290 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2-Chlorophenol | ND | | 3400 | 320 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2-Methylnaphthalene | ND | | 1800 | 350 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2-Methylphenol | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2-Nitroaniline | ND | | 3400 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 2-Nitrophenol | ND | | 1800 | 500 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 3,3'-Dichlorobenzidine | ND | | 3400 | 2100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 3-Nitroaniline | ND | | 3400 | 490 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4,6-Dinitro-2-methylphenol | ND | | 3400 | 1800 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4-Bromophenyl phenyl ether | ND | | 1800 | 250 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4-Chloro-3-methylphenol | ND | | 1800 | 440 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4-Chloroaniline | ND | | 1800 | 440 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4-Chlorophenyl phenyl ether | ND | | 1800 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4-Methylphenol | ND | | 3400 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4-Nitroaniline | ND | | 3400 | 930 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| 4-Nitrophenol | ND | | 3400 | 1200 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Acenaphthene | ND | | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Acenaphthylene | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Acetophenone | ND | | 1800 | 240 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Anthracene | ND | | 1800 | 440 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Atrazine | ND | | 1800 | 620 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Benzaldehyde | ND | | 1800 | 1400 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |

**Client Sample ID: PILE4-02-10282024**
**Date Collected: 10/28/24 15:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-19**
**Matrix: Solid**
**Percent Solids: 95.4**

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Benzo[a]anthracene** | **580** | **J** | 1800 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Benzo[a]pyrene** | **650** | **J** | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Benzo[b]fluoranthene** | **770** | **J** | 1800 | 280 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Benzo[g,h,i]perylene** | **420** | **J** | 1800 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Benzo[k]fluoranthene** | **360** | **J** | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Bis(2-chloroethoxy)methane | ND | | 1800 | 380 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Bis(2-chloroethyl)ether | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Bis(2-ethylhexyl) phthalate** | **820** | **J** | 1800 | 610 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Butyl benzyl phthalate | ND | | 1800 | 290 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Caprolactam | ND | | 1800 | 530 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Carbazole | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Chrysene** | **620** | **J** | 1800 | 400 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Di-n-butyl phthalate | ND | | 1800 | 300 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Di-n-octyl phthalate | ND | *+ | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Dibenz(a,h)anthracene | ND | | 1800 | 310 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Dibenzofuran | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Diethyl phthalate | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Dimethyl phthalate | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Fluoranthene** | **1100** | **J** | 1800 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Fluorene | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Hexachlorobenzene | ND | | 1800 | 240 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Hexachlorobutadiene | ND | | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Hexachlorocyclopentadiene | ND | | 1800 | 240 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Hexachloroethane | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Indeno[1,2,3-cd]pyrene** | **370** | **J** | 1800 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Isophorone | ND | | 1800 | 380 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| N-Nitrosodi-n-propylamine | ND | | 1800 | 300 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| N-Nitrosodiphenylamine | ND | | 1800 | 1400 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Naphthalene | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Nitrobenzene | ND | | 1800 | 200 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Pentachlorophenol | ND | | 3400 | 1800 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Phenanthrene** | **710** | **J** | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| Phenol | ND | | 1800 | 270 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |
| **Pyrene** | **1000** | **J** | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:21 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *26* | | *26 - 143* | *10/30/24 07:13* | *10/31/24 17:21* | *10* |
| *2-Fluorobiphenyl* | *74* | | *50 - 121* | *10/30/24 07:13* | *10/31/24 17:21* | *10* |
| *2-Fluorophenol* | *59* | | *36 - 120* | *10/30/24 07:13* | *10/31/24 17:21* | *10* |
| *Nitrobenzene-d5* | *63* | | *40 - 121* | *10/30/24 07:13* | *10/31/24 17:21* | *10* |
| *p-Terphenyl-d14* | *73* | | *46 - 143* | *10/30/24 07:13* | *10/31/24 17:21* | *10* |
| *Phenol-d5* | *66* | | *41 - 120* | *10/30/24 07:13* | *10/31/24 17:21* | *10* |

### Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 35 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| 4,4'-DDE | ND | | 35 | 7.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| 4,4'-DDT | ND | | 35 | 8.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Aldrin | ND | | 35 | 8.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| **alpha-BHC** | **9.7** | **J B** | 35 | 6.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |

**Client Sample ID: PILE4-02-10282024**
**Date Collected: 10/28/24 15:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-19**
**Matrix: Solid**
**Percent Solids: 95.4**

## Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| cis-Chlordane | ND | | 35 | 17 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| beta-BHC | ND | | 35 | 6.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| delta-BHC | ND | | 35 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Dieldrin | ND | | 35 | 8.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Endosulfan I | ND | | 35 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Endosulfan II | ND | | 35 | 6.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Endosulfan sulfate | ND | | 35 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Endrin | ND | | 35 | 6.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Endrin aldehyde | ND | | 35 | 8.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Endrin ketone | ND | | 35 | 8.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| gamma-BHC (Lindane) | ND | | 35 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| trans-Chlordane | ND | | 35 | 11 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Heptachlor | ND | | 35 | 7.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Heptachlor epoxide | ND | | 35 | 8.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Methoxychlor | ND | | 35 | 7.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |
| Toxaphene | ND | | 350 | 200 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:36 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *183* | *S1+* | *45 - 120* | *10/30/24 07:05* | *10/31/24 13:36* | *20* |
| *DCB Decachlorobiphenyl* | *208* | *S1+* | *45 - 120* | *10/30/24 07:05* | *10/31/24 13:36* | *20* |
| *Tetrachloro-m-xylene* | *150* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 13:36* | *20* |
| *Tetrachloro-m-xylene* | *216* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 13:36* | *20* |

## Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:34 | 1 |
| PCB-1221 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:34 | 1 |
| PCB-1232 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:34 | 1 |
| PCB-1242 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:34 | 1 |
| PCB-1248 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:34 | 1 |
| **PCB-1254** | **0.17** | **J** | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:34 | 1 |
| PCB-1260 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *114* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 08:34* | *1* |
| *Tetrachloro-m-xylene* | *94* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 08:34* | *1* |
| *DCB Decachlorobiphenyl* | *102* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 08:34* | *1* |
| *DCB Decachlorobiphenyl* | *74* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 08:34* | *1* |

## Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 17 | 5.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:41 | 1 |
| Silvex (2,4,5-TP) | ND | | 17 | 6.2 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:41 | 1 |
| 2,4-D | ND | | 17 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:41 | 1 |
| Dichlorprop | ND | | 17 | 8.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:41 | 1 |
| Pentachlorophenol | ND | | 17 | 5.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:41 | 1 |
| Picloram | ND | | 17 | 7.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 18:41 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *55* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 18:41* | *1* |
| *2,4-Dichlorophenylacetic acid* | *55* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 18:41* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE4-02-10282024**
**Date Collected: 10/28/24 15:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-19**
**Matrix: Solid**
**Percent Solids: 95.4**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **0.058** | **J I** | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **0.20** | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.8 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.70 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |

**Client Sample ID: PILE4-02-10282024**
**Date Collected: 10/28/24 15:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-19**
**Matrix: Solid**
**Percent Solids: 95.4**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.88 | 0.22 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.18 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.35 | 0.088 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 04:40 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *102* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C5 PFPeA* | *87.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C5 PFHxA* | *90.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C4 PFHpA* | *94.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C8 PFOA* | *94.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C9 PFNA* | *88.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C6 PFDA* | *86.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C7 PFUnA* | *92.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C2 PFTeDA* | *113* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C3 PFBS* | *90.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C3 PFHxS* | *87.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C8 PFOS* | *88.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C8 PFOSA* | *84.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *d3-NMeFOSAA* | *90.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *d5-NEtFOSAA* | *97.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *M2-4:2 FTS* | *115* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *M2-6:2 FTS* | *123* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *M2-8:2 FTS* | *130* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C3 HFPO-DA* | *88.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *d7-N-MeFOSE-M* | *69.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *d9-N-EtFOSE-M* | *83.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *d5-NEtPFOSA* | *73.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *D3-NMeFOSA* | *75.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |
| *13C2-PFDoDA* | *101* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 04:40* | *1* |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **5660** | | 10 | 8.6 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| Antimony | ND | | 14.9 | 0.53 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Arsenic** | **3.7** | | 2.0 | 0.88 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:36 | 1 |
| **Barium** | **40.6** | | 0.50 | 0.14 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Beryllium** | **0.35** | | 0.20 | 0.040 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Cadmium** | **0.29** | | 0.20 | 0.070 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Calcium** | **102000** | | 249 | 134 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:57 | 5 |
| **Chromium** | **13.2** | | 0.50 | 0.36 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Cobalt** | **4.1** | | 0.50 | 0.10 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Copper** | **23.7** | | 1.0 | 0.57 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Iron** | **11900** | | 10 | 8.4 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Lead** | **44.4** | | 1.0 | 0.46 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |

## Client Sample ID: PILE4-02-10282024
**Lab Sample ID: 480-224895-19**

**Date Collected: 10/28/24 15:00**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.4**

### Method: SW846 6010C - Metals (ICP) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Magnesium** | **22800** | | 19.9 | 8.4 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Manganese** | **283** | | 1.0 | 0.28 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Nickel** | **13.4** | | 5.0 | 0.25 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Potassium** | **1230** | | 29.9 | 24.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| Selenium | ND | | 4.0 | 0.80 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| Silver | ND | | 0.60 | 0.20 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Sodium** | **320** | | 139 | 61.0 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| Thallium | ND | | 6.0 | 0.76 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Vanadium** | **10.9** | | 0.50 | 0.13 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |
| **Zinc** | **81.5** | | 2.0 | 1.0 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:54 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Mercury** | **0.57** | | 0.021 | 0.0048 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:31 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Cyanide, Total (SW846 9012B)** | **0.77** | **J** | 0.97 | 0.47 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:26 | 1 |

## Client Sample ID: PILE4-03-10282024
**Lab Sample ID: 480-224895-20**

**Date Collected: 10/28/24 15:05**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F1 vs | 5.1 | 0.37 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | F1 vs | 5.1 | 0.83 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,1,2-Trichloroethane | ND | F1 vs | 5.1 | 0.66 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.1 | 1.2 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.1 | 0.62 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.1 | 0.63 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,2,4-Trichlorobenzene | ND | F1 vs | 5.1 | 0.31 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | F1 vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,2-Dichlorobenzene | ND | F1 vs | 5.1 | 0.40 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,2-Dichloroethane | ND | F1 vs | 5.1 | 0.26 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,3-Dichlorobenzene | ND | F1 vs | 5.1 | 0.26 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,4-Dichlorobenzene | ND | F1 vs | 5.1 | 0.71 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 2-Butanone (MEK) | ND | F1 vs | 26 | 1.9 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 2-Hexanone | ND | F1 vs | 26 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Acetone | ND | F1 vs | 26 | 4.3 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Benzene | ND | F1 vs | 5.1 | 0.25 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Bromodichloromethane | ND | F1 vs | 5.1 | 0.68 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Bromoform | ND | F1 vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Bromomethane | ND | vs | 5.1 | 0.46 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Carbon disulfide | ND | F1 vs | 5.1 | 2.6 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Carbon tetrachloride | ND | F1 vs | 5.1 | 0.49 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Chlorobenzene | ND | F1 vs | 5.1 | 0.67 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Dibromochloromethane | ND | F1 vs | 5.1 | 0.65 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |

## Client Sample ID: PILE4-03-10282024

**Lab Sample ID: 480-224895-20**

**Date Collected: 10/28/24 15:05**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.2**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | vs | 5.1 | 1.2 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| **Chloroform** | **0.63** | **J B F1 vs** | 5.1 | 0.32 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Chloromethane | ND | vs | 5.1 | 0.31 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| cis-1,2-Dichloroethene | ND | F1 vs | 5.1 | 0.65 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| cis-1,3-Dichloropropene | ND | F1 vs | 5.1 | 0.74 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Cyclohexane | ND | F1 vs | 5.1 | 0.71 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.1 | 0.42 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Ethylbenzene | ND | F1 vs | 5.1 | 0.35 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| 1,2-Dibromoethane | ND | F1 vs | 5.1 | 0.66 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Isopropylbenzene | ND | F1 vs | 5.1 | 0.77 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.1 | 0.50 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Methylcyclohexane | ND | F1 vs | 5.1 | 0.78 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| **Methylene Chloride** | **5.2** | **vs** | 5.1 | 2.3 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Styrene | ND | F1 vs | 5.1 | 0.26 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Tetrachloroethene | ND | F1 vs | 5.1 | 0.69 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Toluene | ND | F1 vs | 5.1 | 0.39 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| trans-1,2-Dichloroethene | ND | F1 vs | 5.1 | 0.53 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| trans-1,3-Dichloropropene | ND | F1 vs | 5.1 | 2.2 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Trichloroethene | ND | F1 vs | 5.1 | 1.1 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Trichlorofluoromethane | ND | vs | 5.1 | 0.48 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Vinyl chloride | ND | vs | 5.1 | 0.62 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |
| Xylenes, Total | ND | F1 vs | 10 | 0.86 | ug/Kg | ☼ | 11/01/24 11:36 | 11/03/24 04:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *89* | | *71 - 125* | *11/01/24 11:36* | *11/03/24 04:36* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *11/01/24 11:36* | *11/03/24 04:36* | *1* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* | *11/01/24 11:36* | *11/03/24 04:36* | *1* |
| *Dibromofluoromethane (Surr)* | *91* | | *60 - 140* | *11/01/24 11:36* | *11/03/24 04:36* | *1* |

## Client Sample ID: PILE4-04-10282024

**Lab Sample ID: 480-224895-21**

**Date Collected: 10/28/24 15:10**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 92.1**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.4 | 0.39 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.4 | 0.87 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.4 | 0.70 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.4 | 0.42 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.4 | 0.28 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.4 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 2.0 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |

## Client Sample ID: PILE4-04-10282024

**Lab Sample ID: 480-224895-21**

**Date Collected: 10/28/24 15:10**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 92.1**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.8 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Acetone | ND | vs | 27 | 4.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Benzene | ND | vs | 5.4 | 0.26 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Bromodichloromethane | ND | vs | 5.4 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Bromoform | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Bromomethane | ND | vs | 5.4 | 0.48 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Carbon disulfide | ND | vs | 5.4 | 2.7 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Carbon tetrachloride | ND | vs | 5.4 | 0.52 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Chlorobenzene | ND | vs | 5.4 | 0.71 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Dibromochloromethane | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Chloroethane | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| **Chloroform** | **0.61** | **J B vs** | 5.4 | 0.33 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Chloromethane | ND | vs | 5.4 | 0.32 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.4 | 0.77 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Cyclohexane | ND | vs | 5.4 | 0.75 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.4 | 0.44 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Ethylbenzene | ND | vs | 5.4 | 0.37 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.4 | 0.69 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Isopropylbenzene | ND | vs | 5.4 | 0.81 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Methyl acetate | ND | vs | 27 | 3.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.4 | 0.53 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Methylcyclohexane | ND | vs | 5.4 | 0.82 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| **Methylene Chloride** | **2.7** | **J vs** | 5.4 | 2.5 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Styrene | ND | vs | 5.4 | 0.27 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Tetrachloroethene | ND | vs | 5.4 | 0.72 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Toluene | ND | vs | 5.4 | 0.41 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.4 | 0.55 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.4 | 2.4 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Trichloroethene | ND | vs | 5.4 | 1.2 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Trichlorofluoromethane | ND | vs | 5.4 | 0.51 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Vinyl chloride | ND | vs | 5.4 | 0.66 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.90 | ug/Kg | ☼ | 11/01/24 11:35 | 11/03/24 05:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/01/24 11:35* | *11/03/24 05:00* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *64 - 126* | *11/01/24 11:35* | *11/03/24 05:00* | *1* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* | *11/01/24 11:35* | *11/03/24 05:00* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *60 - 140* | *11/01/24 11:35* | *11/03/24 05:00* | *1* |

## Client Sample ID: PILE4-05-10282024

**Lab Sample ID: 480-224895-22**

**Date Collected: 10/28/24 15:15**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 93.8**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.3 | 0.38 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.3 | 0.86 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.3 | 0.69 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |

**Client Sample ID: PILE4-05-10282024**
**Date Collected: 10/28/24 15:15**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-22**
**Matrix: Solid**
**Percent Solids: 93.8**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.3 | 0.41 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Acetone | ND | vs | 26 | 4.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Benzene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Bromodichloromethane | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Bromoform | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Bromomethane | ND | vs | 5.3 | 0.48 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Carbon disulfide | ND | vs | 5.3 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Carbon tetrachloride | ND | vs | 5.3 | 0.51 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Chlorobenzene | ND | vs | 5.3 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Dibromochloromethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Chloroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| **Chloroform** | **0.60** | **J B vs** | 5.3 | 0.33 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Chloromethane | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.3 | 0.76 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Cyclohexane | ND | vs | 5.3 | 0.74 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.3 | 0.44 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Ethylbenzene | ND | vs | 5.3 | 0.36 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Isopropylbenzene | ND | vs | 5.3 | 0.80 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Methyl acetate | ND | vs | 26 | 3.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Methylcyclohexane | ND | vs | 5.3 | 0.80 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| **Methylene Chloride** | **10** | **vs** | 5.3 | 2.4 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Styrene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Tetrachloroethene | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Toluene | ND | vs | 5.3 | 0.40 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.3 | 0.55 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.3 | 2.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Trichloroethene | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Trichlorofluoromethane | ND | vs | 5.3 | 0.50 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Vinyl chloride | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.89 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 01:58 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *104* | | *71 - 125* | *11/02/24 18:19* | *11/03/24 01:58* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *11/02/24 18:19* | *11/03/24 01:58* | *1* |
| *4-Bromofluorobenzene (Surr)* | *82* | | *72 - 126* | *11/02/24 18:19* | *11/03/24 01:58* | *1* |

## Client Sample ID: PILE4-05-10282024

**Lab Sample ID: 480-224895-22**

**Date Collected: 10/28/24 15:15**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 93.8**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Dibromofluoromethane (Surr)* | *99* | | *60 - 140* | *11/02/24 18:19* | *11/03/24 01:58* | *1* |

## Client Sample ID: PILE4-06-10282024

**Lab Sample ID: 480-224895-23**

**Date Collected: 10/28/24 15:20**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.3**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.0 | 0.37 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.0 | 0.82 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.0 | 0.66 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.0 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.0 | 0.62 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.0 | 0.62 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.0 | 0.31 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.0 | 0.39 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.0 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.0 | 0.71 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 2-Butanone (MEK) | ND | vs | 25 | 1.8 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 2-Hexanone | ND | vs | 25 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 25 | 1.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Acetone | ND | vs | 25 | 4.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Benzene | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Bromodichloromethane | ND | vs | 5.0 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Bromoform | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Bromomethane | ND | vs | 5.0 | 0.45 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Carbon disulfide | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Carbon tetrachloride | ND | vs | 5.0 | 0.49 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Chlorobenzene | ND | vs | 5.0 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Dibromochloromethane | ND | vs | 5.0 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Chloroethane | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| **Chloroform** | **0.60** | **J B vs** | 5.0 | 0.31 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Chloromethane | ND | vs | 5.0 | 0.30 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.0 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.0 | 0.73 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Cyclohexane | ND | vs | 5.0 | 0.71 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.0 | 0.42 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Ethylbenzene | ND | vs | 5.0 | 0.35 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.0 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Isopropylbenzene | ND | vs | 5.0 | 0.76 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Methyl acetate | ND | vs | 25 | 3.0 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.0 | 0.50 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Methylcyclohexane | ND | vs | 5.0 | 0.77 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| **Methylene Chloride** | **3.9** | **J vs** | 5.0 | 2.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Styrene | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Tetrachloroethene | ND | vs | 5.0 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |

## Client Sample ID: PILE4-06-10282024

**Lab Sample ID: 480-224895-23**

**Date Collected: 10/28/24 15:20**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.3**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | ND | vs | 5.0 | 0.38 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.0 | 0.52 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.0 | 2.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Trichloroethene | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Trichlorofluoromethane | ND | vs | 5.0 | 0.48 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Vinyl chloride | ND | vs | 5.0 | 0.62 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.85 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:25 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *97* | | *71 - 125* | *11/02/24 18:19* | *11/03/24 02:25* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *64 - 126* | *11/02/24 18:19* | *11/03/24 02:25* | *1* |
| *4-Bromofluorobenzene (Surr)* | *95* | | *72 - 126* | *11/02/24 18:19* | *11/03/24 02:25* | *1* |
| *Dibromofluoromethane (Surr)* | *96* | | *60 - 140* | *11/02/24 18:19* | *11/03/24 02:25* | *1* |

## Client Sample ID: PILE5-01-10282024

**Lab Sample ID: 480-224895-24**

**Date Collected: 10/28/24 15:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.3**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.0 | 0.36 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.0 | 0.81 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.0 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.0 | 0.30 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.0 | 0.39 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.0 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.0 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 2-Butanone (MEK) | ND | vs | 25 | 1.8 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 2-Hexanone | ND | vs | 25 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 25 | 1.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| **Acetone** | **5.3** | **J vs** | 25 | 4.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Benzene | ND | vs | 5.0 | 0.24 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Bromodichloromethane | ND | vs | 5.0 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Bromoform | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Bromomethane | ND | vs | 5.0 | 0.45 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Carbon disulfide | ND | vs | 5.0 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Carbon tetrachloride | ND | vs | 5.0 | 0.48 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Chlorobenzene | ND | vs | 5.0 | 0.66 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Dibromochloromethane | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Chloroethane | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| **Chloroform** | **0.59** | **J B vs** | 5.0 | 0.31 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Chloromethane | ND | vs | 5.0 | 0.30 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.0 | 0.72 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE5-01-10282024**
**Date Collected: 10/28/24 15:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-24**
**Matrix: Solid**
**Percent Solids: 97.3**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyclohexane | ND | vs | 5.0 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.0 | 0.41 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Ethylbenzene | ND | vs | 5.0 | 0.34 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.0 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Isopropylbenzene | ND | vs | 5.0 | 0.75 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Methyl acetate | ND | vs | 25 | 3.0 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.0 | 0.49 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Methylcyclohexane | ND | vs | 5.0 | 0.76 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Methylene Chloride | ND | vs | 5.0 | 2.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Styrene | ND | vs | 5.0 | 0.25 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Tetrachloroethene | ND | vs | 5.0 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Toluene | ND | vs | 5.0 | 0.38 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.0 | 0.52 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.0 | 2.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Trichloroethene | ND | vs | 5.0 | 1.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Trichlorofluoromethane | ND | vs | 5.0 | 0.47 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Vinyl chloride | ND | vs | 5.0 | 0.61 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.84 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 02:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *92* | | *71 - 125* | *11/02/24 18:19* | *11/03/24 02:52* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *64 - 126* | *11/02/24 18:19* | *11/03/24 02:52* | *1* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *72 - 126* | *11/02/24 18:19* | *11/03/24 02:52* | *1* |
| *Dibromofluoromethane (Surr)* | *103* | | *60 - 140* | *11/02/24 18:19* | *11/03/24 02:52* | *1* |

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 170 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| bis (2-chloroisopropyl) ether | ND | | 170 | 35 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2,4,5-Trichlorophenol | ND | | 170 | 47 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2,4,6-Trichlorophenol | ND | | 170 | 35 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2,4-Dichlorophenol | ND | | 170 | 18 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2,4-Dimethylphenol | ND | | 170 | 42 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2,4-Dinitrophenol | ND | | 1700 | 800 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2,4-Dinitrotoluene | ND | | 170 | 36 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2,6-Dinitrotoluene | ND | | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2-Chloronaphthalene | ND | | 170 | 28 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2-Chlorophenol | ND | | 340 | 31 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2-Methylnaphthalene | ND | | 170 | 35 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2-Methylphenol | ND | | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2-Nitroaniline | ND | | 340 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 2-Nitrophenol | ND | | 170 | 49 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 3,3'-Dichlorobenzidine | ND | | 340 | 200 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 3-Nitroaniline | ND | | 340 | 48 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 4,6-Dinitro-2-methylphenol | ND | | 340 | 170 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 4-Bromophenyl phenyl ether | ND | | 170 | 24 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 4-Chloro-3-methylphenol | ND | | 170 | 43 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 4-Chloroaniline | ND | | 170 | 43 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 4-Chlorophenyl phenyl ether | ND | | 170 | 21 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 4-Methylphenol | ND | | 340 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |

**Client Sample ID: PILE5-01-10282024**
**Date Collected: 10/28/24 15:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-24**
**Matrix: Solid**
**Percent Solids: 97.3**

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4-Nitroaniline | ND | | 340 | 90 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| 4-Nitrophenol | ND | | 340 | 120 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Acenaphthene | ND | | 170 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Acenaphthylene | ND | | 170 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Acetophenone | ND | | 170 | 23 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Anthracene | ND | | 170 | 43 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Atrazine | ND | | 170 | 60 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Benzaldehyde | ND | | 170 | 140 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| **Benzo[a]anthracene** | **20** | **J** | 170 | 17 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Benzo[a]pyrene | ND | | 170 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Benzo[b]fluoranthene | ND | | 170 | 27 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Benzo[g,h,i]perylene | ND | | 170 | 18 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Benzo[k]fluoranthene | ND | | 170 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Bis(2-chloroethoxy)methane | ND | | 170 | 37 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Bis(2-chloroethyl)ether | ND | | 170 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Bis(2-ethylhexyl) phthalate | ND | | 170 | 59 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Butyl benzyl phthalate | ND | | 170 | 28 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Caprolactam | ND | | 170 | 52 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Carbazole | ND | | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Chrysene | ND | | 170 | 39 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Di-n-butyl phthalate | ND | | 170 | 29 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Di-n-octyl phthalate | ND | *+ | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Dibenz(a,h)anthracene | ND | | 170 | 30 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Dibenzofuran | ND | | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Diethyl phthalate | ND | | 170 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Dimethyl phthalate | ND | | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| **Fluoranthene** | **36** | **J** | 170 | 18 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Fluorene | ND | | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Hexachlorobenzene | ND | | 170 | 23 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Hexachlorobutadiene | ND | | 170 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Hexachlorocyclopentadiene | ND | | 170 | 23 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Hexachloroethane | ND | | 170 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 170 | 21 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Isophorone | ND | | 170 | 37 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| N-Nitrosodi-n-propylamine | ND | | 170 | 29 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| N-Nitrosodiphenylamine | ND | | 170 | 140 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Naphthalene | ND | | 170 | 22 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Nitrobenzene | ND | | 170 | 19 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Pentachlorophenol | ND | | 340 | 170 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| **Phenanthrene** | **36** | **J** | 170 | 25 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| Phenol | ND | | 170 | 26 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |
| **Pyrene** | **40** | **J** | 170 | 20 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 17:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *26* | | *26 - 143* | *10/30/24 07:13* | *10/31/24 17:49* | *1* |
| *2-Fluorobiphenyl* | *79* | | *50 - 121* | *10/30/24 07:13* | *10/31/24 17:49* | *1* |
| *2-Fluorophenol* | *66* | | *36 - 120* | *10/30/24 07:13* | *10/31/24 17:49* | *1* |
| *Nitrobenzene-d5* | *75* | | *40 - 121* | *10/30/24 07:13* | *10/31/24 17:49* | *1* |
| *p-Terphenyl-d14* | *88* | | *46 - 143* | *10/30/24 07:13* | *10/31/24 17:49* | *1* |
| *Phenol-d5* | *66* | | *41 - 120* | *10/30/24 07:13* | *10/31/24 17:49* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE5-01-10282024**
**Date Collected: 10/28/24 15:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-24**
**Matrix: Solid**
**Percent Solids: 97.3**

## Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 1.7 | 0.33 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| **4,4'-DDE** | **1.3** | **J** | 1.7 | 0.36 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| **4,4'-DDT** | **9.6** | | 1.7 | 0.40 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Aldrin | ND | | 1.7 | 0.42 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| **alpha-BHC** | **0.34** | **J B** | 1.7 | 0.31 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| cis-Chlordane | ND | | 1.7 | 0.85 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| beta-BHC | ND | | 1.7 | 0.31 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| delta-BHC | ND | | 1.7 | 0.32 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Dieldrin | ND | | 1.7 | 0.41 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Endosulfan I | ND | | 1.7 | 0.33 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| **Endosulfan II** | **0.89** | **J** | 1.7 | 0.31 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Endosulfan sulfate | ND | | 1.7 | 0.32 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| **Endrin** | **0.44** | **J** | 1.7 | 0.34 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| **Endrin aldehyde** | **0.46** | **J** | 1.7 | 0.44 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Endrin ketone | ND | | 1.7 | 0.42 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| gamma-BHC (Lindane) | ND | | 1.7 | 0.31 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| trans-Chlordane | ND | | 1.7 | 0.54 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Heptachlor | ND | | 1.7 | 0.37 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Heptachlor epoxide | ND | | 1.7 | 0.44 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Methoxychlor | ND | | 1.7 | 0.35 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |
| Toxaphene | ND | | 17 | 9.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 13:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *90* | | *45 - 120* | *10/30/24 07:05* | *10/31/24 13:56* | *1* |
| *DCB Decachlorobiphenyl* | *110* | | *45 - 120* | *10/30/24 07:05* | *10/31/24 13:56* | *1* |
| *Tetrachloro-m-xylene* | *79* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 13:56* | *1* |
| *Tetrachloro-m-xylene* | *75* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 13:56* | *1* |

## Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:52 | 1 |
| PCB-1221 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:52 | 1 |
| PCB-1232 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:52 | 1 |
| PCB-1242 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:52 | 1 |
| PCB-1248 | ND | | 0.23 | 0.045 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:52 | 1 |
| PCB-1254 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:52 | 1 |
| PCB-1260 | ND | | 0.23 | 0.11 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 08:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *119* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 08:52* | *1* |
| *Tetrachloro-m-xylene* | *86* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 08:52* | *1* |
| *DCB Decachlorobiphenyl* | *109* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 08:52* | *1* |
| *DCB Decachlorobiphenyl* | *84* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 08:52* | *1* |

## Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 17 | 5.4 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:00 | 1 |
| Silvex (2,4,5-TP) | ND | | 17 | 6.1 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:00 | 1 |
| 2,4-D | ND | | 17 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:00 | 1 |
| Dichlorprop | ND | | 17 | 8.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:00 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE5-01-10282024**
**Date Collected: 10/28/24 15:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-24**
**Matrix: Solid**
**Percent Solids: 97.3**

### Method: SW846 8151A - Herbicides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Pentachlorophenol | ND | | 17 | 5.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:00 | 1 |
| Picloram | ND | | 17 | 7.3 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *63* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 19:00* | *1* |
| *2,4-Dichlorophenylacetic acid* | *66* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 19:00* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Perfluorobutanoic acid (PFBA)** | **0.21** | **J** | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.35 | 0.087 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorooctanoic acid (PFOA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.7 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.7 | 0.44 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |

**Client Sample ID: PILE5-01-10282024**
**Date Collected: 10/28/24 15:25**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-24**
**Matrix: Solid**
**Percent Solids: 97.3**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.35 | 0.087 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.35 | 0.087 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.70 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.35 | 0.087 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.87 | 0.22 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.4 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.17 | 0.044 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.35 | 0.087 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:30 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *94.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C5 PFPeA* | *85.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C5 PFHxA* | *85.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C4 PFHpA* | *92.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C8 PFOA* | *88.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C9 PFNA* | *86.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C6 PFDA* | *89.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C7 PFUnA* | *86.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C2 PFTeDA* | *78.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C3 PFBS* | *89.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C3 PFHxS* | *87.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C8 PFOS* | *84.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C8 PFOSA* | *67.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *d3-NMeFOSAA* | *74.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *d5-NEtFOSAA* | *79.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *M2-4:2 FTS* | *100* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *M2-6:2 FTS* | *90.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *M2-8:2 FTS* | *91.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C3 HFPO-DA* | *87.3* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *d7-N-MeFOSE-M* | *65.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *d9-N-EtFOSE-M* | *62.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *d5-NEtPFOSA* | *56.8* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *D3-NMeFOSA* | *58.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |
| *13C2-PFDoDA* | *85.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:30* | *1* |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **105** | | 10.3 | 8.9 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Antimony | ND | | 15.4 | 0.54 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Arsenic | ND | | 2.1 | 0.90 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:37 | 1 |
| **Barium** | **4.7** | | 0.51 | 0.14 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Beryllium | ND | | 0.21 | 0.041 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |

## Client Sample ID: PILE5-01-10282024

**Lab Sample ID: 480-224895-24**

**Date Collected: 10/28/24 15:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.3**

### Method: SW846 6010C - Metals (ICP) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cadmium | 0.13 | J | 0.21 | 0.072 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Calcium | 14900 | | 51.4 | 27.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Chromium | 0.91 | | 0.51 | 0.37 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Cobalt | 0.22 | J | 0.51 | 0.10 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Copper | 4.5 | | 1.0 | 0.59 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Iron | 778 | | 10.3 | 8.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Lead | 3.2 | | 1.0 | 0.47 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Magnesium | 302 | | 20.5 | 8.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Manganese | 19.9 | | 1.0 | 0.29 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Nickel | 0.52 | J | 5.1 | 0.26 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Potassium | 1010 | | 30.8 | 24.9 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Selenium | ND | | 4.1 | 0.82 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Silver | ND | | 0.62 | 0.21 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Sodium | 480 | | 144 | 63.0 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Thallium | ND | | 6.2 | 0.78 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Vanadium | 0.31 | J | 0.51 | 0.13 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |
| Zinc | 9.9 | | 2.1 | 1.0 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:56 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | ND | | 0.020 | 0.0046 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:32 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total (SW846 9012B) | ND | | 0.97 | 0.47 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:27 | 1 |

## Client Sample ID: PILE6-01-10282024

**Lab Sample ID: 480-224895-25**

**Date Collected: 10/28/24 15:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.7**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.84 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.41 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Benzene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |

**Client Sample ID: PILE6-01-10282024**
**Date Collected: 10/28/24 15:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-25**
**Matrix: Solid**
**Percent Solids: 94.7**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| **Chloroform** | **0.56** | **J B vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Methyl acetate | ND | vs | 26 | 3.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| **Methylene Chloride** | **4.2** | **J vs** | 5.2 | 2.4 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Toluene | ND | vs | 5.2 | 0.39 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.54 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.88 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:19 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *95* | | *71 - 125* | *11/02/24 18:19* | *11/03/24 03:19* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *11/02/24 18:19* | *11/03/24 03:19* | *1* |
| *4-Bromofluorobenzene (Surr)* | *90* | | *72 - 126* | *11/02/24 18:19* | *11/03/24 03:19* | *1* |
| *Dibromofluoromethane (Surr)* | *98* | | *60 - 140* | *11/02/24 18:19* | *11/03/24 03:19* | *1* |

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| bis (2-chloroisopropyl) ether | ND | | 1800 | 360 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2,4,5-Trichlorophenol | ND | | 1800 | 490 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2,4,6-Trichlorophenol | ND | | 1800 | 360 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2,4-Dichlorophenol | ND | | 1800 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2,4-Dimethylphenol | ND | | 1800 | 430 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2,4-Dinitrophenol | ND | | 18000 | 8300 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2,4-Dinitrotoluene | ND | | 1800 | 370 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2,6-Dinitrotoluene | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2-Chloronaphthalene | ND | | 1800 | 300 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2-Chlorophenol | ND | | 3500 | 330 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-01-10282024**
**Date Collected: 10/28/24 15:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-25**
**Matrix: Solid**
**Percent Solids: 94.7**

**Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND | | 1800 | 360 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2-Methylphenol | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2-Nitroaniline | ND | | 3500 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 2-Nitrophenol | ND | | 1800 | 510 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 3,3'-Dichlorobenzidine | ND | | 3500 | 2100 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 3-Nitroaniline | ND | | 3500 | 500 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4,6-Dinitro-2-methylphenol | ND | | 3500 | 1800 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4-Bromophenyl phenyl ether | ND | | 1800 | 250 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4-Chloro-3-methylphenol | ND | | 1800 | 440 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4-Chloroaniline | ND | | 1800 | 440 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4-Chlorophenyl phenyl ether | ND | | 1800 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4-Methylphenol | ND | | 3500 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4-Nitroaniline | ND | | 3500 | 940 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| 4-Nitrophenol | ND | | 3500 | 1300 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Acenaphthene** | **630** | **J** | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Acenaphthylene | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Acetophenone | ND | | 1800 | 240 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Anthracene** | **1300** | **J** | 1800 | 440 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Atrazine | ND | | 1800 | 620 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Benzaldehyde | ND | | 1800 | 1400 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Benzo[a]anthracene** | **2900** | | 1800 | 180 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Benzo[a]pyrene** | **2700** | | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Benzo[b]fluoranthene** | **3500** | | 1800 | 280 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Benzo[g,h,i]perylene** | **2100** | | 1800 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Benzo[k]fluoranthene** | **1800** | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Bis(2-chloroethoxy)methane | ND | | 1800 | 380 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Bis(2-chloroethyl)ether | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Bis(2-ethylhexyl) phthalate | ND | | 1800 | 610 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Butyl benzyl phthalate | ND | | 1800 | 300 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Caprolactam | ND | | 1800 | 540 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Carbazole** | **720** | **J** | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Chrysene** | **3200** | | 1800 | 400 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Di-n-butyl phthalate | ND | | 1800 | 310 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Di-n-octyl phthalate | ND | *+ | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Dibenz(a,h)anthracene** | **530** | **J** | 1800 | 320 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Dibenzofuran** | **400** | **J** | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Diethyl phthalate | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Dimethyl phthalate | ND | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Fluoranthene** | **6700** | | 1800 | 190 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Fluorene** | **570** | **J** | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Hexachlorobenzene | ND | | 1800 | 240 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Hexachlorobutadiene | ND | | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Hexachlorocyclopentadiene | ND | | 1800 | 240 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Hexachloroethane | ND | | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Indeno[1,2,3-cd]pyrene** | **1600** | **J** | 1800 | 220 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Isophorone | ND | | 1800 | 380 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| N-Nitrosodi-n-propylamine | ND | | 1800 | 310 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| N-Nitrosodiphenylamine | ND | | 1800 | 1500 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Naphthalene** | **360** | **J** | 1800 | 230 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |

**Client Sample ID: PILE6-01-10282024**
**Date Collected: 10/28/24 15:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-25**
**Matrix: Solid**
**Percent Solids: 94.7**

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrobenzene | ND | | 1800 | 200 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Pentachlorophenol | ND | | 3500 | 1800 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Phenanthrene** | **5100** | | 1800 | 260 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| Phenol | ND | | 1800 | 270 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |
| **Pyrene** | **5700** | | 1800 | 210 | ug/Kg | ☼ | 10/30/24 07:13 | 10/31/24 18:17 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *58* | | *26 - 143* | *10/30/24 07:13* | *10/31/24 18:17* | *10* |
| *2-Fluorobiphenyl* | *84* | | *50 - 121* | *10/30/24 07:13* | *10/31/24 18:17* | *10* |
| *2-Fluorophenol* | *72* | | *36 - 120* | *10/30/24 07:13* | *10/31/24 18:17* | *10* |
| *Nitrobenzene-d5* | *81* | | *40 - 121* | *10/30/24 07:13* | *10/31/24 18:17* | *10* |
| *p-Terphenyl-d14* | *85* | | *46 - 143* | *10/30/24 07:13* | *10/31/24 18:17* | *10* |
| *Phenol-d5* | *67* | | *41 - 120* | *10/30/24 07:13* | *10/31/24 18:17* | *10* |

### Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 35 | 6.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| 4,4'-DDE | ND | | 35 | 7.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| **4,4'-DDT** | **14** | **J** | 35 | 8.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Aldrin | ND | | 35 | 8.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| alpha-BHC | ND | | 35 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| cis-Chlordane | ND | | 35 | 17 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| beta-BHC | ND | | 35 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| delta-BHC | ND | | 35 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Dieldrin | ND | | 35 | 8.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Endosulfan I | ND | | 35 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Endosulfan II | ND | | 35 | 6.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Endosulfan sulfate | ND | | 35 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Endrin | ND | | 35 | 6.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Endrin aldehyde | ND | | 35 | 8.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Endrin ketone | ND | | 35 | 8.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| gamma-BHC (Lindane) | ND | | 35 | 6.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| trans-Chlordane | ND | | 35 | 11 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Heptachlor | ND | | 35 | 7.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Heptachlor epoxide | ND | | 35 | 9.0 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Methoxychlor | ND | | 35 | 7.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |
| Toxaphene | ND | | 350 | 200 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:16 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 14:16* | *20* |
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 14:16* | *20* |
| *Tetrachloro-m-xylene* | *131* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 14:16* | *20* |
| *Tetrachloro-m-xylene* | *136* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 14:16* | *20* |

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:10 | 1 |
| PCB-1221 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:10 | 1 |
| PCB-1232 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:10 | 1 |
| PCB-1242 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:10 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-01-10282024**
**Date Collected: 10/28/24 15:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-25**
**Matrix: Solid**
**Percent Solids: 94.7**

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1248 | ND | | 0.25 | 0.049 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:10 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:10 | 1 |
| PCB-1260 | ND | | 0.25 | 0.12 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *107* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 09:10* | *1* |
| *Tetrachloro-m-xylene* | *85* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 09:10* | *1* |
| *DCB Decachlorobiphenyl* | *101* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 09:10* | *1* |
| *DCB Decachlorobiphenyl* | *74* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 09:10* | *1* |

### Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 17 | 5.6 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:18 | 1 |
| Silvex (2,4,5-TP) | ND | | 17 | 6.3 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:18 | 1 |
| 2,4-D | ND | | 17 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:18 | 1 |
| Dichlorprop | ND | | 17 | 8.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:18 | 1 |
| Pentachlorophenol | ND | | 17 | 5.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:18 | 1 |
| Picloram | ND | | 17 | 7.5 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 19:18 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *54* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 19:18* | *1* |
| *2,4-Dichlorophenylacetic acid* | *59* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 19:18* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.34 | 0.085 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **0.14** | **J** | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **0.085** | **J** | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |

**Client Sample ID: PILE6-01-10282024**
**Date Collected: 10/28/24 15:30**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-25**
**Matrix: Solid**
**Percent Solids: 94.7**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.7 | 0.42 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.7 | 0.42 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.34 | 0.085 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.34 | 0.085 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.68 | 0.17 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.34 | 0.085 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.85 | 0.21 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.2 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.2 | 1.1 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.17 | 0.042 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.34 | 0.085 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 05:46 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *88.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C5 PFPeA* | *72.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C5 PFHxA* | *77.9* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C4 PFHpA* | *77.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C8 PFOA* | *82.2* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C9 PFNA* | *77.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C6 PFDA* | *80.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C7 PFUnA* | *79.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C2 PFTeDA* | *81.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C3 PFBS* | *85.1* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C3 PFHxS* | *84.5* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C8 PFOS* | *82.7* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *13C8 PFOSA* | *57.0* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *d3-NMeFOSAA* | *70.6* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |
| *d5-NEtFOSAA* | *77.4* | | *20 - 150* | *11/01/24 08:56* | *11/03/24 05:46* | *1* |

## Client Sample ID: PILE6-01-10282024

**Lab Sample ID: 480-224895-25**

**Date Collected: 10/28/24 15:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.7**

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Isotope Dilution | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| M2-4:2 FTS | 95.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| M2-6:2 FTS | 91.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| M2-8:2 FTS | 97.1 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 13C3 HFPO-DA | 76.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| d7-N-MeFOSE-M | 52.4 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| d9-N-EtFOSE-M | 50.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| d5-NEtPFOSA | 57.5 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| D3-NMeFOSA | 56.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |
| 13C2-PFDoDA | 84.2 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 05:46 | 1 |

### Method: SW846 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **7190** | | 10.9 | 9.4 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| Antimony | ND | | 16.3 | 0.58 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Arsenic** | **5.2** | | 2.2 | 0.96 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:39 | 1 |
| **Barium** | **60.7** | | 0.54 | 0.15 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Beryllium** | **0.49** | | 0.22 | 0.044 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Cadmium** | **1.3** | | 0.22 | 0.076 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Calcium** | **133000** | | 272 | 147 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 17:59 | 5 |
| **Chromium** | **13.6** | | 0.54 | 0.39 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Cobalt** | **3.9** | | 0.54 | 0.11 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Copper** | **44.0** | | 1.1 | 0.62 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Iron** | **12100** | | 10.9 | 9.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Lead** | **60.8** | | 1.1 | 0.50 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Magnesium** | **13600** | | 21.8 | 9.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Manganese** | **416** | | 1.1 | 0.31 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Nickel** | **13.0** | | 5.4 | 0.27 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Potassium** | **1550** | | 32.7 | 26.4 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| Selenium | ND | | 4.4 | 0.87 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| Silver | ND | | 0.65 | 0.22 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Sodium** | **373** | | 153 | 66.8 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| Thallium | ND | | 6.5 | 0.83 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Vanadium** | **12.5** | | 0.54 | 0.14 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |
| **Zinc** | **287** | | 2.2 | 1.1 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 17:58 | 1 |

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Mercury** | **0.24** | | 0.022 | 0.0050 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:34 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Cyanide, Total (SW846 9012B)** | **1.9** | | 1.0 | 0.50 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:27 | 1 |

## Client Sample ID: PILE6-02-10282024

**Lab Sample ID: 480-224895-26**

**Date Collected: 10/28/24 15:34**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.8**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.3 | 0.39 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.3 | 0.86 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-02-10282024**
**Date Collected: 10/28/24 15:34**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-26**
**Matrix: Solid**
**Percent Solids: 91.8**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | ND | vs | 5.3 | 0.69 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.3 | 0.42 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.3 | 0.75 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 2.0 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Acetone | ND | vs | 27 | 4.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Benzene | ND | vs | 5.3 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Bromodichloromethane | ND | vs | 5.3 | 0.71 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Bromoform | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Bromomethane | ND | vs | 5.3 | 0.48 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Carbon disulfide | ND | vs | 5.3 | 2.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Carbon tetrachloride | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Chlorobenzene | ND | vs | 5.3 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Dibromochloromethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Chloroethane | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| **Chloroform** | **0.68** | **J B vs** | 5.3 | 0.33 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Chloromethane | ND | vs | 5.3 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.3 | 0.77 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Cyclohexane | ND | vs | 5.3 | 0.75 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.3 | 0.44 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Ethylbenzene | ND | vs | 5.3 | 0.37 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.3 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Isopropylbenzene | ND | vs | 5.3 | 0.80 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Methyl acetate | ND | vs | 27 | 3.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.3 | 0.52 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Methylcyclohexane | ND | vs | 5.3 | 0.81 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Methylene Chloride | ND | vs | 5.3 | 2.5 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Styrene | ND | vs | 5.3 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Tetrachloroethene | ND | vs | 5.3 | 0.72 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Toluene | ND | vs | 5.3 | 0.40 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.3 | 0.55 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.3 | 2.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Trichloroethene | ND | vs | 5.3 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Trichlorofluoromethane | ND | vs | 5.3 | 0.50 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Vinyl chloride | ND | vs | 5.3 | 0.65 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.90 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 03:46 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *93* | | *71 - 125* | *11/02/24 18:19* | *11/03/24 03:46* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *64 - 126* | *11/02/24 18:19* | *11/03/24 03:46* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-02-10282024**
**Date Collected: 10/28/24 15:34**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-26**
**Matrix: Solid**
**Percent Solids: 91.8**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *72 - 126* | *11/02/24 18:19* | *11/03/24 03:46* | *1* |
| *Dibromofluoromethane (Surr)* | *87* | | *60 - 140* | *11/02/24 18:19* | *11/03/24 03:46* | *1* |

### Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 910 | 130 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| bis (2-chloroisopropyl) ether | ND | | 910 | 180 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2,4,5-Trichlorophenol | ND | | 910 | 250 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2,4,6-Trichlorophenol | ND | | 910 | 180 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2,4-Dichlorophenol | ND | | 910 | 96 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2,4-Dimethylphenol | ND | | 910 | 220 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2,4-Dinitrophenol | ND | | 8800 | 4200 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2,4-Dinitrotoluene | ND | | 910 | 190 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2,6-Dinitrotoluene | ND | | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2-Chloronaphthalene | ND | | 910 | 150 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2-Chlorophenol | ND | | 1800 | 170 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2-Methylnaphthalene | ND | | 910 | 180 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **2-Methylphenol** | **130** | **J** | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2-Nitroaniline | ND | | 1800 | 130 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 2-Nitrophenol | ND | | 910 | 260 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 3,3'-Dichlorobenzidine | ND | | 1800 | 1100 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 3-Nitroaniline | ND | | 1800 | 250 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4,6-Dinitro-2-methylphenol | ND | | 1800 | 910 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4-Bromophenyl phenyl ether | ND | | 910 | 130 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4-Chloro-3-methylphenol | ND | | 910 | 220 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4-Chloroaniline | ND | | 910 | 220 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4-Chlorophenyl phenyl ether | ND | | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4-Methylphenol | ND | | 1800 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4-Nitroaniline | ND | | 1800 | 470 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| 4-Nitrophenol | ND | | 1800 | 630 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Acenaphthene** | **630** | **J** | 910 | 130 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Acenaphthylene | ND | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Acetophenone | ND | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Anthracene** | **1300** | | 910 | 220 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Atrazine | ND | | 910 | 310 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Benzaldehyde | ND | | 910 | 720 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Benzo[a]anthracene** | **2000** | | 910 | 91 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Benzo[a]pyrene** | **1900** | | 910 | 130 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Benzo[b]fluoranthene** | **2300** | | 910 | 140 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Benzo[g,h,i]perylene** | **1300** | | 910 | 96 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Benzo[k]fluoranthene** | **1000** | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Bis(2-chloroethoxy)methane | ND | | 910 | 190 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Bis(2-chloroethyl)ether | ND | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Bis(2-ethylhexyl) phthalate | ND | | 910 | 310 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Butyl benzyl phthalate | ND | | 910 | 150 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Caprolactam | ND | | 910 | 270 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Carbazole** | **640** | **J** | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| **Chrysene** | **2000** | | 910 | 200 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Di-n-butyl phthalate | ND | | 910 | 150 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |

**Client Sample ID: PILE6-02-10282024**
**Date Collected: 10/28/24 15:34**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-26**
**Matrix: Solid**
**Percent Solids: 91.8**

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | ND | *+ | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Dibenz(a,h)anthracene | 370 | J | 910 | 160 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Dibenzofuran | 410 | J | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Diethyl phthalate | ND | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Dimethyl phthalate | ND | | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Fluoranthene | 4600 | | 910 | 96 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Fluorene | 630 | J | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Hexachlorobenzene | ND | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Hexachlorobutadiene | ND | | 910 | 130 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Hexachlorocyclopentadiene | ND | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Hexachloroethane | ND | | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Indeno[1,2,3-cd]pyrene | 960 | | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Isophorone | ND | | 910 | 190 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| N-Nitrosodi-n-propylamine | ND | | 910 | 150 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| N-Nitrosodiphenylamine | ND | | 910 | 740 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Naphthalene | 360 | J | 910 | 120 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Nitrobenzene | ND | | 910 | 100 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Pentachlorophenol | ND | | 1800 | 910 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Phenanthrene | 4600 | | 910 | 130 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Phenol | ND | | 910 | 140 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |
| Pyrene | 4100 | | 910 | 110 | ug/Kg | ☼ | 10/30/24 09:12 | 10/31/24 18:44 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *11* | *S1-* | *26 - 143* | *10/30/24 09:12* | *10/31/24 18:44* | *5* |
| *2-Fluorobiphenyl* | *79* | | *50 - 121* | *10/30/24 09:12* | *10/31/24 18:44* | *5* |
| *2-Fluorophenol* | *60* | | *36 - 120* | *10/30/24 09:12* | *10/31/24 18:44* | *5* |
| *Nitrobenzene-d5* | *71* | | *40 - 121* | *10/30/24 09:12* | *10/31/24 18:44* | *5* |
| *p-Terphenyl-d14* | *81* | | *46 - 143* | *10/30/24 09:12* | *10/31/24 18:44* | *5* |
| *Phenol-d5* | *70* | | *41 - 120* | *10/30/24 09:12* | *10/31/24 18:44* | *5* |

## Method: SW846 8081B - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 36 | 7.0 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| 4,4'-DDE | ND | | 36 | 7.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| 4,4'-DDT | ND | | 36 | 8.4 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Aldrin | ND | | 36 | 8.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| alpha-BHC | ND | | 36 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| cis-Chlordane | ND | | 36 | 18 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| beta-BHC | ND | | 36 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| delta-BHC | ND | | 36 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Dieldrin | ND | | 36 | 8.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Endosulfan I | ND | | 36 | 6.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Endosulfan II | ND | | 36 | 6.5 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Endosulfan sulfate | ND | | 36 | 6.7 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Endrin | ND | | 36 | 7.1 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Endrin aldehyde | ND | | 36 | 9.2 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Endrin ketone | ND | | 36 | 8.9 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| gamma-BHC (Lindane) | ND | | 36 | 6.6 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| trans-Chlordane | ND | | 36 | 11 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Heptachlor | ND | | 36 | 7.8 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |

**Client Sample ID: PILE6-02-10282024**
**Date Collected: 10/28/24 15:34**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-26**
**Matrix: Solid**
**Percent Solids: 91.8**

### Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Heptachlor epoxide | ND | | 36 | 9.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Methoxychlor | ND | | 36 | 7.3 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |
| Toxaphene | ND | | 360 | 210 | ug/Kg | ☼ | 10/30/24 07:05 | 10/31/24 14:35 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 14:35* | *20* |
| *DCB Decachlorobiphenyl* | *0* | *S1-* | *45 - 120* | *10/30/24 07:05* | *10/31/24 14:35* | *20* |
| *Tetrachloro-m-xylene* | *133* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 14:35* | *20* |
| *Tetrachloro-m-xylene* | *126* | *S1+* | *30 - 124* | *10/30/24 07:05* | *10/31/24 14:35* | *20* |

### Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.19 | 0.037 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:28 | 1 |
| PCB-1221 | ND | | 0.19 | 0.037 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:28 | 1 |
| PCB-1232 | ND | | 0.19 | 0.037 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:28 | 1 |
| PCB-1242 | ND | | 0.19 | 0.037 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:28 | 1 |
| PCB-1248 | ND | | 0.19 | 0.037 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:28 | 1 |
| PCB-1254 | ND | | 0.19 | 0.089 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:28 | 1 |
| PCB-1260 | ND | | 0.19 | 0.089 | mg/Kg | ☼ | 10/29/24 18:14 | 10/31/24 09:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *107* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 09:28* | *1* |
| *Tetrachloro-m-xylene* | *87* | | *60 - 154* | *10/29/24 18:14* | *10/31/24 09:28* | *1* |
| *DCB Decachlorobiphenyl* | *101* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 09:28* | *1* |
| *DCB Decachlorobiphenyl* | *76* | | *65 - 174* | *10/29/24 18:14* | *10/31/24 09:28* | *1* |

### Method: SW846 8151A - Herbicides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 18 | 5.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 14:23 | 1 |
| Silvex (2,4,5-TP) | ND | | 18 | 6.4 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 14:23 | 1 |
| 2,4-D | ND | | 18 | 11 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 14:23 | 1 |
| Dichlorprop | ND | | 18 | 8.9 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 14:23 | 1 |
| Pentachlorophenol | ND | | 18 | 5.8 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 14:23 | 1 |
| Picloram | ND | | 18 | 7.7 | ug/Kg | ☼ | 10/30/24 17:37 | 11/01/24 14:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *42* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 14:23* | *1* |
| *2,4-Dichlorophenylacetic acid* | *43* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 14:23* | *1* |

### Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.37 | 0.092 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **0.12** | **J** | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-02-10282024**
**Date Collected: 10/28/24 15:34**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-26**
**Matrix: Solid**
**Percent Solids: 91.8**

**Method: EPA Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **0.052** | **J** | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 1.8 | 0.46 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 1.8 | 0.46 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.37 | 0.092 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.37 | 0.092 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.74 | 0.18 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.37 | 0.092 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 0.92 | 0.23 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 4.6 | 1.2 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 4.6 | 1.2 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.18 | 0.046 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.37 | 0.092 | ug/Kg | ☼ | 11/01/24 08:56 | 11/03/24 06:03 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-02-10282024**
**Date Collected: 10/28/24 15:34**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-26**
**Matrix: Solid**
**Percent Solids: 91.8**

| Isotope Dilution | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 13C4 PFBA | 86.4 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C5 PFPeA | 69.5 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C5 PFHxA | 74.2 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C4 PFHpA | 77.1 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C8 PFOA | 77.5 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C9 PFNA | 82.7 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C6 PFDA | 80.4 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C7 PFUnA | 76.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C2 PFTeDA | 72.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C3 PFBS | 86.1 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C3 PFHxS | 83.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C8 PFOS | 79.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C8 PFOSA | 61.6 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| d3-NMeFOSAA | 46.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| d5-NEtFOSAA | 55.5 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| M2-4:2 FTS | 76.8 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| M2-6:2 FTS | 77.1 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| M2-8:2 FTS | 79.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C3 HFPO-DA | 79.3 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| d7-N-MeFOSE-M | 69.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| d9-N-EtFOSE-M | 67.9 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| d5-NEtPFOSA | 63.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| D3-NMeFOSA | 63.0 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |
| 13C2-PFDoDA | 75.4 | | 20 - 150 | 11/01/24 08:56 | 11/03/24 06:03 | 1 |

**Method: SW846 6010C - Metals (ICP)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **7130** | | 11.4 | 9.8 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| Antimony | ND | | 17.1 | 0.60 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Arsenic** | **3.1** | | 2.3 | 1.0 | mg/Kg | ☼ | 10/29/24 14:46 | 11/04/24 11:47 | 1 |
| **Barium** | **30.8** | | 0.57 | 0.16 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Beryllium** | **0.26** | | 0.23 | 0.046 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Cadmium** | **0.32** | | 0.23 | 0.080 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Calcium** | **153000** | | 284 | 154 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 18:01 | 5 |
| **Chromium** | **13.9** | | 0.57 | 0.41 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Cobalt** | **5.2** | | 0.57 | 0.11 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Copper** | **34.8** | | 1.1 | 0.65 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Iron** | **22200** | | 11.4 | 9.6 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Lead** | **13.8** | | 1.1 | 0.52 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Magnesium** | **50300** | | 114 | 48.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/31/24 18:01 | 5 |
| **Manganese** | **290** | | 1.1 | 0.32 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Nickel** | **17.5** | | 5.7 | 0.28 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Potassium** | **1720** | | 34.1 | 27.6 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| Selenium | ND | | 4.6 | 0.91 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| Silver | ND | | 0.68 | 0.23 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Sodium** | **582** | | 159 | 69.7 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| Thallium | ND | | 6.8 | 0.86 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Vanadium** | **11.9** | | 0.57 | 0.15 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |
| **Zinc** | **80.1** | | 2.3 | 1.2 | mg/Kg | ☼ | 10/29/24 14:46 | 10/30/24 18:00 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE6-02-10282024

**Lab Sample ID: 480-224895-26**

**Date Collected: 10/28/24 15:34**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.8**

### Method: SW846 7471B - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Mercury** | **0.012** | **J** | 0.021 | 0.0049 | mg/Kg | ☼ | 10/31/24 09:44 | 10/31/24 13:35 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total (SW846 9012B) | ND | F1 | 1.0 | 0.50 | mg/Kg | ☼ | 10/31/24 14:10 | 10/31/24 18:30 | 1 |

## Client Sample ID: PILE6-03-10282024

**Lab Sample ID: 480-224895-27**

**Date Collected: 10/28/24 15:40**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.0**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | | 210 | 58 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,1,2,2-Tetrachloroethane | ND | | 210 | 34 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,1,2-Trichloroethane | ND | | 210 | 44 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 210 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,1-Dichloroethane | ND | | 210 | 65 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,1-Dichloroethene | ND | | 210 | 73 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,2,4-Trichlorobenzene | ND | | 210 | 80 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,2-Dibromo-3-Chloropropane | ND | | 210 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,2-Dichlorobenzene | ND | | 210 | 54 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,2-Dichloroethane | ND | | 210 | 86 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,2-Dichloropropane | ND | | 210 | 34 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,3-Dichlorobenzene | ND | | 210 | 56 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,4-Dichlorobenzene | ND | | 210 | 29 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 2-Butanone (MEK) | ND | | 1000 | 620 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 2-Hexanone | ND | | 1000 | 430 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1000 | 67 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Acetone | ND | | 1000 | 860 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Benzene | ND | | 210 | 40 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Bromodichloromethane | ND | | 210 | 42 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Bromoform | ND | | 210 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Bromomethane | ND | | 210 | 46 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Carbon disulfide | ND | | 210 | 95 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Carbon tetrachloride | ND | | 210 | 54 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Chlorobenzene | ND | | 210 | 28 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Dibromochloromethane | ND | | 210 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Chloroethane | ND | | 210 | 44 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Chloroform | ND | | 210 | 140 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Chloromethane | ND | | 210 | 50 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| cis-1,2-Dichloroethene | ND | | 210 | 58 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| cis-1,3-Dichloropropene | ND | | 210 | 50 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Cyclohexane | ND | | 210 | 47 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Dichlorodifluoromethane | ND | | 210 | 91 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Ethylbenzene | ND | | 210 | 61 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| 1,2-Dibromoethane | ND | | 210 | 37 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Isopropylbenzene | ND | | 210 | 31 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| **Methyl acetate** | **680** | **J** | 1000 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Methyl tert-butyl ether | ND | | 210 | 79 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Methylcyclohexane | ND | | 210 | 98 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |

## Client Sample ID: PILE6-03-10282024

**Lab Sample ID: 480-224895-27**

**Date Collected: 10/28/24 15:40**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.0**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Methylene Chloride** | **160** | **J B** | 210 | 42 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Styrene | ND | | 210 | 51 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Tetrachloroethene | ND | | 210 | 28 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Toluene | ND | | 210 | 56 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| trans-1,2-Dichloroethene | ND | | 210 | 50 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| trans-1,3-Dichloropropene | ND | | 210 | 21 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Trichloroethene | ND | | 210 | 58 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Trichlorofluoromethane | ND | | 210 | 98 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Vinyl chloride | ND | | 210 | 70 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |
| Xylenes, Total | ND | | 420 | 120 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:00 | 2 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *99* | | *50 - 149* | *11/01/24 09:05* | *11/01/24 13:00* | *2* |
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *53 - 146* | *11/01/24 09:05* | *11/01/24 13:00* | *2* |
| *4-Bromofluorobenzene (Surr)* | *93* | | *49 - 148* | *11/01/24 09:05* | *11/01/24 13:00* | *2* |
| *Dibromofluoromethane (Surr)* | *95* | | *60 - 140* | *11/01/24 09:05* | *11/01/24 13:00* | *2* |

## Client Sample ID: PILE6-04-10282024

**Lab Sample ID: 480-224895-28**

**Date Collected: 10/28/24 15:45**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 90.3**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.5 | 0.40 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.5 | 0.89 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.5 | 0.71 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.5 | 1.3 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.5 | 0.67 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,1-Dichloroethene | ND | vs | 5.5 | 0.67 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.5 | 0.33 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.5 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.5 | 0.43 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.5 | 0.28 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.5 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.5 | 0.28 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.5 | 0.77 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 2-Butanone (MEK) | ND | vs | 27 | 2.0 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 2-Hexanone | ND | vs | 27 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 27 | 1.8 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| **Acetone** | **13** | **J vs** | 27 | 4.6 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Benzene | ND | vs | 5.5 | 0.27 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Bromodichloromethane | ND | vs | 5.5 | 0.74 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Bromoform | ND | vs | 5.5 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Bromomethane | ND | vs | 5.5 | 0.49 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Carbon disulfide | ND | vs | 5.5 | 2.7 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Carbon tetrachloride | ND | vs | 5.5 | 0.53 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Chlorobenzene | ND | vs | 5.5 | 0.73 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Dibromochloromethane | ND | vs | 5.5 | 0.70 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Chloroethane | ND | vs | 5.5 | 1.2 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| **Chloroform** | **0.68** | **J B vs** | 5.5 | 0.34 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |

## Client Sample ID: PILE6-04-10282024

**Lab Sample ID: 480-224895-28**

**Date Collected: 10/28/24 15:45**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 90.3**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | ND | vs | 5.5 | 0.33 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.5 | 0.70 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.5 | 0.79 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Cyclohexane | ND | vs | 5.5 | 0.77 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.5 | 0.45 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Ethylbenzene | ND | vs | 5.5 | 0.38 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.5 | 0.71 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Isopropylbenzene | ND | vs | 5.5 | 0.83 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Methyl acetate | ND | vs | 27 | 3.3 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.5 | 0.54 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Methylcyclohexane | ND | vs | 5.5 | 0.83 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| **Methylene Chloride** | **3.2** | **J vs** | 5.5 | 2.5 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Styrene | ND | vs | 5.5 | 0.27 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Tetrachloroethene | ND | vs | 5.5 | 0.74 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| **Toluene** | **1.2** | **J vs** | 5.5 | 0.42 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.5 | 0.57 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.5 | 2.4 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Trichloroethene | ND | vs | 5.5 | 1.2 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Trichlorofluoromethane | ND | vs | 5.5 | 0.52 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Vinyl chloride | ND | vs | 5.5 | 0.67 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |
| Xylenes, Total | ND | vs | 11 | 0.92 | ug/Kg | ☼ | 11/03/24 16:37 | 11/03/24 20:55 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *95* | | *71 - 125* | *11/03/24 16:37* | *11/03/24 20:55* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *64 - 126* | *11/03/24 16:37* | *11/03/24 20:55* | *1* |
| *4-Bromofluorobenzene (Surr)* | *95* | | *72 - 126* | *11/03/24 16:37* | *11/03/24 20:55* | *1* |
| *Dibromofluoromethane (Surr)* | *69* | | *60 - 140* | *11/03/24 16:37* | *11/03/24 20:55* | *1* |

## Client Sample ID: PILE6-05-10282024

**Lab Sample ID: 480-224895-29**

**Date Collected: 10/28/24 15:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.1**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | | 220 | 60 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,1,2,2-Tetrachloroethane | ND | | 220 | 35 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,1,2-Trichloroethane | ND | | 220 | 45 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 220 | 110 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,1-Dichloroethane | ND | | 220 | 67 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,1-Dichloroethene | ND | | 220 | 75 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,2,4-Trichlorobenzene | ND | | 220 | 82 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,2-Dibromo-3-Chloropropane | ND | | 220 | 110 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,2-Dichlorobenzene | ND | | 220 | 55 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,2-Dichloroethane | ND | | 220 | 88 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,2-Dichloropropane | ND | | 220 | 35 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,3-Dichlorobenzene | ND | | 220 | 58 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,4-Dichlorobenzene | ND | | 220 | 30 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 2-Butanone (MEK) | ND | | 1100 | 640 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 2-Hexanone | ND | | 1100 | 440 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1100 | 69 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |

## Client Sample ID: PILE6-05-10282024

**Lab Sample ID: 480-224895-29**

**Date Collected: 10/28/24 15:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.1**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 1100 | 890 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Benzene | ND | | 220 | 41 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Bromodichloromethane | ND | | 220 | 43 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Bromoform | ND | | 220 | 110 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Bromomethane | ND | | 220 | 47 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Carbon disulfide | ND | | 220 | 98 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Carbon tetrachloride | ND | | 220 | 55 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Chlorobenzene | ND | | 220 | 28 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Dibromochloromethane | ND | | 220 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Chloroethane | ND | | 220 | 45 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Chloroform | ND | | 220 | 150 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Chloromethane | ND | | 220 | 51 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| cis-1,2-Dichloroethene | ND | | 220 | 59 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| cis-1,3-Dichloropropene | ND | | 220 | 51 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Cyclohexane | ND | | 220 | 48 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Dichlorodifluoromethane | ND | | 220 | 94 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Ethylbenzene | ND | | 220 | 63 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| 1,2-Dibromoethane | ND | | 220 | 38 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Isopropylbenzene | ND | | 220 | 32 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| **Methyl acetate** | **410** | **J** | 1100 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Methyl tert-butyl ether | ND | | 220 | 81 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Methylcyclohexane | ND | | 220 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| **Methylene Chloride** | **160** | **J B** | 220 | 43 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Styrene | ND | | 220 | 52 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Tetrachloroethene | ND | | 220 | 29 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Toluene | ND | | 220 | 58 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| trans-1,2-Dichloroethene | ND | | 220 | 51 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| trans-1,3-Dichloropropene | ND | | 220 | 21 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| **Trichloroethene** | **63** | **J** | 220 | 60 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Trichlorofluoromethane | ND | | 220 | 100 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Vinyl chloride | ND | | 220 | 72 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |
| Xylenes, Total | ND | | 430 | 120 | ug/Kg | ☼ | 11/01/24 09:05 | 11/01/24 13:23 | 2 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *98* | | *50 - 149* | *11/01/24 09:05* | *11/01/24 13:23* | *2* |
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *53 - 146* | *11/01/24 09:05* | *11/01/24 13:23* | *2* |
| *4-Bromofluorobenzene (Surr)* | *92* | | *49 - 148* | *11/01/24 09:05* | *11/01/24 13:23* | *2* |
| *Dibromofluoromethane (Surr)* | *90* | | *60 - 140* | *11/01/24 09:05* | *11/01/24 13:23* | *2* |

## Client Sample ID: PILE6-06-10282024

**Lab Sample ID: 480-224895-30**

**Date Collected: 10/28/24 15:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 93.9**

### Method: SW846 8260C - Volatile Organic Compounds by GC/MS

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | vs | 5.2 | 0.85 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,1,2-Trichloroethane | ND | vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,1-Dichloroethane | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-06-10282024**
**Date Collected: 10/28/24 15:55**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-30**
**Matrix: Solid**
**Percent Solids: 93.9**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,2,4-Trichlorobenzene | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,2-Dichlorobenzene | ND | vs | 5.2 | 0.41 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,2-Dichloroethane | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,2-Dichloropropane | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,3-Dichlorobenzene | ND | vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,4-Dichlorobenzene | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 2-Butanone (MEK) | ND | vs | 26 | 1.9 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 2-Hexanone | ND | vs | 26 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 26 | 1.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Acetone | ND | vs | 26 | 4.4 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Benzene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Bromodichloromethane | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Bromoform | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Bromomethane | ND | vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Carbon disulfide | ND | vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Carbon tetrachloride | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Chlorobenzene | ND | vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Dibromochloromethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Chloroethane | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| **Chloroform** | **0.53** | **J B vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Chloromethane | ND | vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| cis-1,2-Dichloroethene | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| cis-1,3-Dichloropropene | ND | vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Cyclohexane | ND | vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Dichlorodifluoromethane | ND | vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Ethylbenzene | ND | vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| 1,2-Dibromoethane | ND | vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Isopropylbenzene | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Methyl acetate | ND | vs | 26 | 3.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Methyl tert-butyl ether | ND | vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Methylcyclohexane | ND | vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Methylene Chloride | ND | vs | 5.2 | 2.4 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Styrene | ND | vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Tetrachloroethene | ND | vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Toluene | ND | vs | 5.2 | 0.40 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| trans-1,2-Dichloroethene | ND | vs | 5.2 | 0.54 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| trans-1,3-Dichloropropene | ND | vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Trichloroethene | ND | vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Trichlorofluoromethane | ND | vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Vinyl chloride | ND | vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |
| Xylenes, Total | ND | vs | 10 | 0.88 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 04:40 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* | *11/02/24 18:19* | *11/03/24 04:40* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *89* | | *64 - 126* | *11/02/24 18:19* | *11/03/24 04:40* | *1* |
| *4-Bromofluorobenzene (Surr)* | *92* | | *72 - 126* | *11/02/24 18:19* | *11/03/24 04:40* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *60 - 140* | *11/02/24 18:19* | *11/03/24 04:40* | *1* |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-07-10282024**
**Date Collected: 10/28/24 16:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-31**
**Matrix: Solid**
**Percent Solids: 94.6**

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F2 vs | 5.2 | 0.38 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | F1 F2 vs | 5.2 | 0.85 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,1,2-Trichloroethane | ND | F2 vs | 5.2 | 0.68 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | F2 vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,1-Dichloroethane | ND | F2 vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,1-Dichloroethene | ND | F2 vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,2,4-Trichlorobenzene | ND | F1 F2 vs | 5.2 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | F2 vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,2-Dichlorobenzene | ND | F2 vs | 5.2 | 0.41 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,2-Dichloroethane | ND | F2 vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,2-Dichloropropane | ND | F2 vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,3-Dichlorobenzene | ND | F2 vs | 5.2 | 0.27 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,4-Dichlorobenzene | ND | F2 vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 2-Butanone (MEK) | ND | F1 F2 vs | 26 | 1.9 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 2-Hexanone | ND | F2 vs | 26 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | F2 vs | 26 | 1.7 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| **Acetone** | **4.4** | **J F2 vs** | 26 | 4.4 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Benzene | ND | F2 vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Bromodichloromethane | ND | F2 vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Bromoform | ND | F2 vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Bromomethane | ND | F2 vs | 5.2 | 0.47 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Carbon disulfide | ND | F2 vs | 5.2 | 2.6 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Carbon tetrachloride | ND | F2 vs | 5.2 | 0.50 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Chlorobenzene | ND | F2 vs | 5.2 | 0.69 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Dibromochloromethane | ND | F2 vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Chloroethane | ND | F2 vs | 5.2 | 1.2 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| **Chloroform** | **0.56** | **J B F2 vs** | 5.2 | 0.32 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Chloromethane | ND | F2 vs | 5.2 | 0.31 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| cis-1,2-Dichloroethene | ND | F2 vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| cis-1,3-Dichloropropene | ND | F1 F2 vs | 5.2 | 0.75 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Cyclohexane | ND | F2 vs | 5.2 | 0.73 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Dichlorodifluoromethane | ND | F2 vs | 5.2 | 0.43 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Ethylbenzene | ND | F2 vs | 5.2 | 0.36 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,2-Dibromoethane | ND | F2 vs | 5.2 | 0.67 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Isopropylbenzene | ND | F2 vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Methyl acetate | ND | F2 vs | 26 | 3.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Methyl tert-butyl ether | ND | F2 vs | 5.2 | 0.51 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Methylcyclohexane | ND | F2 vs | 5.2 | 0.79 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| **Methylene Chloride** | **3.7** | **J F2 vs** | 5.2 | 2.4 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Styrene | ND | F1 F2 vs | 5.2 | 0.26 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Tetrachloroethene | ND | F2 vs | 5.2 | 0.70 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Toluene | ND | F2 vs | 5.2 | 0.39 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| trans-1,2-Dichloroethene | ND | F1 F2 vs | 5.2 | 0.54 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| trans-1,3-Dichloropropene | ND | F2 vs | 5.2 | 2.3 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Trichloroethene | ND | F2 vs | 5.2 | 1.1 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Trichlorofluoromethane | ND | F2 vs | 5.2 | 0.49 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Vinyl chloride | ND | F2 vs | 5.2 | 0.64 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Xylenes, Total | ND | F2 vs | 10 | 0.88 | ug/Kg | ☼ | 11/02/24 18:19 | 11/03/24 05:07 | 1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-07-10282024**
**Date Collected: 10/28/24 16:00**
**Date Received: 10/29/24 16:51**

**Lab Sample ID: 480-224895-31**
**Matrix: Solid**
**Percent Solids: 94.6**

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Toluene-d8 (Surr) | 92 | | 71 - 125 | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 1,2-Dichloroethane-d4 (Surr) | 87 | | 64 - 126 | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| 4-Bromofluorobenzene (Surr) | 90 | | 72 - 126 | 11/02/24 18:19 | 11/03/24 05:07 | 1 |
| Dibromofluoromethane (Surr) | 92 | | 60 - 140 | 11/02/24 18:19 | 11/03/24 05:07 | 1 |

# Surrogate Summary

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Matrix: Solid**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| | | TOL | DCA | BFB | DBFM |
| Lab Sample ID | Client Sample ID | (71-125) | (64-126) | (72-126) | (60-140) |
| 480-224895-1 | PILE1-01-10282024 | 92 | 99 | 85 | 94 |
| 480-224895-1 MS | PILE1-01-10282024 | 93 | 81 | 82 | 89 |
| 480-224895-1 MSD | PILE1-01-10282024 | 93 | 82 | 84 | 87 |
| 480-224895-2 | PILE1-02-10282024 | 90 | 95 | 83 | 92 |
| 480-224895-3 | PILE1-03-10282024 | 91 | 93 | 84 | 87 |
| 480-224895-4 | PILE1-04-10282024 | 91 | 100 | 81 | 94 |
| 480-224895-5 | PILE1-05-10282024 | 90 | 98 | 83 | 95 |
| 480-224895-6 | PILE1-06-10282024 | 90 | 95 | 85 | 92 |
| 480-224895-7 | PILE2-01-10282024 | 89 | 98 | 84 | 94 |
| 480-224895-8 | PILE2-02-10282024 | 90 | 95 | 84 | 93 |
| 480-224895-9 | PILE2-03-10282024 | 89 | 98 | 84 | 96 |
| 480-224895-10 | PILE2-04-10282024 | 90 | 98 | 84 | 95 |
| 480-224895-11 | PILE3-01-10282024 | 90 | 100 | 83 | 94 |
| 480-224895-12 | PILE3-02-10282024 | 91 | 98 | 84 | 95 |
| 480-224895-13 | PILE3-03-10282024 | 90 | 96 | 83 | 92 |
| 480-224895-14 | PILE3-04-10282024 | 91 | 100 | 84 | 93 |
| 480-224895-15 | PILE3-05-10282024 | 95 | 93 | 86 | 91 |
| 480-224895-16 | PILE3-06-10282024 | 91 | 96 | 81 | 92 |
| 480-224895-17 | PILE3-07-10282024 | 90 | 98 | 83 | 96 |
| 480-224895-18 | PILE4-01-10282024 | 90 | 97 | 85 | 94 |
| 480-224895-19 | PILE4-02-10282024 | 90 | 99 | 85 | 93 |
| 480-224895-20 | PILE4-03-10282024 | 89 | 95 | 83 | 91 |
| 480-224895-20 MS | PILE4-03-10282024 | 94 | 81 | 83 | 90 |
| 480-224895-20 MSD | PILE4-03-10282024 | 93 | 82 | 83 | 89 |
| 480-224895-21 | PILE4-04-10282024 | 90 | 98 | 84 | 95 |
| 480-224895-22 | PILE4-05-10282024 | 104 | 95 | 82 | 99 |
| 480-224895-23 | PILE4-06-10282024 | 97 | 90 | 95 | 96 |
| 480-224895-24 | PILE5-01-10282024 | 92 | 97 | 100 | 103 |
| 480-224895-25 | PILE6-01-10282024 | 95 | 95 | 90 | 98 |
| 480-224895-26 | PILE6-02-10282024 | 93 | 90 | 97 | 87 |
| 480-224895-28 | PILE6-04-10282024 | 95 | 94 | 95 | 69 |
| 480-224895-30 | PILE6-06-10282024 | 90 | 89 | 92 | 92 |
| 480-224895-31 | PILE6-07-10282024 | 92 | 87 | 90 | 92 |
| 480-224895-31 MS | PILE6-07-10282024 | 95 | 79 | 86 | 87 |
| 480-224895-31 MSD | PILE6-07-10282024 | 94 | 81 | 88 | 89 |
| LCS 480-730740/1-A | Lab Control Sample | 91 | 91 | 88 | 93 |
| LCS 480-730832/1-A | Lab Control Sample | 90 | 93 | 86 | 92 |
| LCS 480-730959/1-A | Lab Control Sample | 99 | 92 | 97 | 96 |
| LCS 480-730999/1-A | Lab Control Sample | 93 | 90 | 92 | 97 |
| MB 480-730740/2-A | Method Blank | 92 | 95 | 87 | 94 |
| MB 480-730832/2-A | Method Blank | 92 | 92 | 85 | 92 |
| MB 480-730959/2-A | Method Blank | 95 | 95 | 99 | 93 |
| MB 480-730999/2-A | Method Blank | 91 | 90 | 96 | 96 |

**Surrogate Legend**

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

# Surrogate Summary

Client: Inventum Engineering LLC
Job ID: 480-224895-1
Project/Site: Bulk Soil/Concrete Analysis

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| | | TOL | DCA | BFB | DBFM |
| Lab Sample ID | Client Sample ID | (50-149) | (53-146) | (49-148) | (60-140) |
| 480-224895-27 | PILE6-03-10282024 | 99 | 104 | 93 | 95 |
| 480-224895-29 | PILE6-05-10282024 | 98 | 103 | 92 | 90 |
| LCS 480-730798/1-A | Lab Control Sample | 98 | 102 | 86 | 97 |
| MB 480-730798/3-A | Method Blank | 97 | 102 | 95 | 91 |

**Surrogate Legend**

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | | |
|---|---|---|---|---|---|---|---|
| | | TBP | FBP | 2FP | NBZ | TPHd14 | PHL |
| Lab Sample ID | Client Sample ID | (26-143) | (50-121) | (36-120) | (40-121) | (46-143) | (41-120) |
| 480-224895-1 | PILE1-01-10282024 | 88 | 63 | 49 | 76 | 68 | 57 |
| 480-224895-2 | PILE1-02-10282024 | 10 S1- | 79 | 50 | 76 | 88 | 79 |
| 480-224895-2 - DL | PILE1-02-10282024 | 5 S1- | 68 | 39 | 63 | 75 | 59 |
| 480-224895-7 | PILE2-01-10282024 | 90 | 84 | 71 | 94 | 89 | 74 |
| 480-224895-11 | PILE3-01-10282024 | 94 | 73 | 59 | 73 | 91 | 60 |
| 480-224895-11 - DL | PILE3-01-10282024 | 28 | 81 | 0 S1- | 55 | 92 | 82 |
| 480-224895-12 | PILE3-02-10282024 | 43 | 79 | 65 | 74 | 89 | 67 |
| 480-224895-18 | PILE4-01-10282024 | 25 S1- | 75 | 60 | 63 | 78 | 63 |
| 480-224895-19 | PILE4-02-10282024 | 26 | 74 | 59 | 63 | 73 | 66 |
| 480-224895-24 | PILE5-01-10282024 | 26 | 79 | 66 | 75 | 88 | 66 |
| 480-224895-25 | PILE6-01-10282024 | 58 | 84 | 72 | 81 | 85 | 67 |
| 480-224895-26 | PILE6-02-10282024 | 11 S1- | 79 | 60 | 71 | 81 | 70 |
| LCS 480-730353/2-A | Lab Control Sample | 104 | 94 | 95 | 91 | 100 | 100 |
| LCS 480-730376/2-A | Lab Control Sample | 84 | 92 | 76 | 85 | 102 | 81 |
| MB 480-730353/1-A | Method Blank | 90 | 84 | 87 | 81 | 97 | 88 |
| MB 480-730376/1-A | Method Blank | 77 | 89 | 76 | 84 | 101 | 81 |

**Surrogate Legend**

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14
PHL = Phenol-d5

## Method: 8081B - Organochlorine Pesticides (GC)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| | | DCBP1 | DCBP2 | TCX1 | TCX2 |
| Lab Sample ID | Client Sample ID | (45-120) | (45-120) | (30-124) | (30-124) |
| 480-224895-1 | PILE1-01-10282024 | 0 S1- | 0 S1- | 134 S1+ | 202 S1+ |
| 480-224895-2 | PILE1-02-10282024 | 0 S1- | 0 S1- | 127 S1+ | 167 S1+ |
| 480-224895-7 | PILE2-01-10282024 | 0 S1- | 0 S1- | 142 S1+ | 165 S1+ |
| 480-224895-11 | PILE3-01-10282024 | 448 S1+ | 888 S1+ | 122 | 114 |

## Method: 8081B - Organochlorine Pesticides (GC) (Continued)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| | | DCBP1 | DCBP2 | TCX1 | TCX2 |
| Lab Sample ID | Client Sample ID | (45-120) | (45-120) | (30-124) | (30-124) |
| 480-224895-12 | PILE3-02-10282024 | 484 S1+ | 95 | 63 | 57 |
| 480-224895-18 | PILE4-01-10282024 | 0 S1- | 0 S1- | 130 S1+ | 222 S1+ |
| 480-224895-19 | PILE4-02-10282024 | 183 S1+ | 208 S1+ | 150 S1+ | 216 S1+ |
| 480-224895-24 | PILE5-01-10282024 | 90 | 110 | 79 | 75 |
| 480-224895-25 | PILE6-01-10282024 | 0 S1- | 0 S1- | 131 S1+ | 136 S1+ |
| 480-224895-26 | PILE6-02-10282024 | 0 S1- | 0 S1- | 133 S1+ | 126 S1+ |
| LCS 480-730372/2-A | Lab Control Sample | 84 | 78 | 66 | 59 |
| MB 480-730372/1-A | Method Blank | 87 | 73 | 63 | 58 |

**Surrogate Legend**

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| | | TCX1 | TCX2 | DCBP1 | DCBP2 |
| Lab Sample ID | Client Sample ID | (60-154) | (60-154) | (65-174) | (65-174) |
| 480-224895-1 | PILE1-01-10282024 | 101 | 120 | 78 | 109 |
| 480-224895-2 | PILE1-02-10282024 | 92 | 118 | 83 | 111 |
| 480-224895-7 | PILE2-01-10282024 | 97 | 116 | 83 | 116 |
| 480-224895-11 | PILE3-01-10282024 | 84 | 105 | 91 | 123 |
| 480-224895-12 | PILE3-02-10282024 | 90 | 117 | 84 | 107 |
| 480-224895-18 | PILE4-01-10282024 | 88 | 113 | 73 | 106 |
| 480-224895-19 | PILE4-02-10282024 | 94 | 114 | 74 | 102 |
| 480-224895-24 | PILE5-01-10282024 | 86 | 119 | 84 | 109 |
| 480-224895-25 | PILE6-01-10282024 | 85 | 107 | 74 | 101 |
| 480-224895-26 | PILE6-02-10282024 | 87 | 107 | 76 | 101 |
| LCS 480-730360/2-A | Lab Control Sample | 114 | 151 | 122 | 148 |
| MB 480-730360/1-A | Method Blank | 108 | 137 | 108 | 130 |

**Surrogate Legend**

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

## Method: 8151A - Herbicides (GC)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | DCPAA1 | DCPAA2 |
| Lab Sample ID | Client Sample ID | (28-129) | (28-129) |
| 480-224895-1 | PILE1-01-10282024 | 50 | 60 |
| 480-224895-2 | PILE1-02-10282024 | 34 | 31 |
| 480-224895-7 | PILE2-01-10282024 | 34 | 39 |
| 480-224895-11 | PILE3-01-10282024 | 50 | 55 |
| 480-224895-12 | PILE3-02-10282024 | 60 | 60 |
| 480-224895-18 | PILE4-01-10282024 | 34 | 41 |
| 480-224895-19 | PILE4-02-10282024 | 55 | 55 |
| 480-224895-24 | PILE5-01-10282024 | 63 | 66 |
| 480-224895-25 | PILE6-01-10282024 | 54 | 59 |
| 480-224895-26 | PILE6-02-10282024 | 42 | 43 |

# Surrogate Summary

Client: Inventum Engineering LLC
Job ID: 480-224895-1
Project/Site: Bulk Soil/Concrete Analysis

## Method: 8151A - Herbicides (GC) (Continued)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | DCPAA1 (28-129) | DCPAA2 (28-129) | | | | | | | | |
| 480-224895-26 MS | PILE6-02-10282024 | 44 | 47 | | | | | | | | |
| 480-224895-26 MSD | PILE6-02-10282024 | 53 | 55 | | | | | | | | |
| LCS 480-730561/2-A | Lab Control Sample | 75 | 77 | | | | | | | | |
| MB 480-730561/1-A | Method Blank | 79 | 81 | | | | | | | | |

**Surrogate Legend**

DCPAA = 2,4-Dichlorophenylacetic acid

# Isotope Dilution Summary

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | PFBA | PFPeA | 13C5PHA | C4PFHA | C8PFOA | C9PFNA | C6PFDA | 13C7PUA |
| Lab Sample ID | Client Sample ID | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) |
| 480-224895-1 | PILE1-01-10282024 | 90.4 | 75.5 | 78.0 | 84.1 | 85.2 | 81.6 | 77.4 | 83.2 |
| 480-224895-2 | PILE1-02-10282024 | 81.5 | 71.5 | 73.2 | 78.9 | 75.9 | 80.5 | 80.8 | 81.7 |
| 480-224895-7 | PILE2-01-10282024 | 98.2 | 81.5 | 86.3 | 89.9 | 89.8 | 97.1 | 93.8 | 91.9 |
| 480-224895-11 | PILE3-01-10282024 | 83.4 | 71.6 | 76.9 | 75.7 | 78.3 | 77.4 | 76.2 | 75.2 |
| 480-224895-12 | PILE3-02-10282024 | 86.2 | 72.9 | 75.8 | 80.1 | 79.2 | 78.6 | 85.3 | 79.6 |
| 480-224895-18 | PILE4-01-10282024 | 87.1 | 79.4 | 80.9 | 81.2 | 79.8 | 81.4 | 76.9 | 79.1 |
| 480-224895-19 | PILE4-02-10282024 | 102 | 87.4 | 90.3 | 94.4 | 94.4 | 88.4 | 86.9 | 92.5 |
| 480-224895-24 | PILE5-01-10282024 | 94.1 | 85.2 | 85.9 | 92.0 | 88.0 | 86.9 | 89.5 | 86.9 |
| 480-224895-25 | PILE6-01-10282024 | 88.9 | 72.7 | 77.9 | 77.7 | 82.2 | 77.5 | 80.1 | 79.5 |
| 480-224895-26 | PILE6-02-10282024 | 86.4 | 69.5 | 74.2 | 77.1 | 77.5 | 82.7 | 80.4 | 76.6 |
| 480-224895-26 DU | PILE6-02-10282024 | 78.0 | 64.2 | 68.2 | 68.0 | 74.0 | 74.0 | 70.4 | 70.8 |
| LCS 240-633477/3-A | Lab Control Sample | 107 | 90.3 | 97.8 | 101 | 100 | 104 | 96.9 | 96.9 |
| LLCS 240-633477/2-A | Lab Control Sample | 98.6 | 85.5 | 92.6 | 94.5 | 90.8 | 93.8 | 85.7 | 84.9 |
| MB 240-633477/1-A | Method Blank | 96.2 | 82.6 | 82.8 | 87.7 | 90.0 | 89.0 | 89.5 | 83.2 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | PFTDA | C3PFBS | C3PFHS | C8PFOS | PFOSA | d3NMFOS | d5NEFOS | M242FTS |
| Lab Sample ID | Client Sample ID | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) |
| 480-224895-1 | PILE1-01-10282024 | 107 | 79.1 | 80.1 | 81.4 | 92.2 | 98.4 | 111 | 136 |
| 480-224895-2 | PILE1-02-10282024 | 92.7 | 81.9 | 78.0 | 78.3 | 68.1 | 64.7 | 76.6 | 83.6 |
| 480-224895-7 | PILE2-01-10282024 | 97.3 | 92.3 | 88.3 | 89.0 | 73.9 | 78.3 | 84.7 | 103 |
| 480-224895-11 | PILE3-01-10282024 | 82.6 | 75.7 | 77.9 | 75.2 | 71.1 | 69.3 | 83.5 | 90.0 |
| 480-224895-12 | PILE3-02-10282024 | 78.4 | 79.6 | 78.9 | 75.7 | 62.4 | 61.6 | 67.6 | 87.9 |
| 480-224895-18 | PILE4-01-10282024 | 89.6 | 79.0 | 78.8 | 81.7 | 67.7 | 74.4 | 80.1 | 90.3 |
| 480-224895-19 | PILE4-02-10282024 | 113 | 90.1 | 87.9 | 88.1 | 84.5 | 90.4 | 97.5 | 115 |
| 480-224895-24 | PILE5-01-10282024 | 78.7 | 89.6 | 87.3 | 84.1 | 67.2 | 74.4 | 79.2 | 100 |
| 480-224895-25 | PILE6-01-10282024 | 81.7 | 85.1 | 84.5 | 82.7 | 57.0 | 70.6 | 77.4 | 95.9 |
| 480-224895-26 | PILE6-02-10282024 | 72.3 | 86.1 | 83.6 | 79.9 | 61.6 | 46.9 | 55.5 | 76.8 |
| 480-224895-26 DU | PILE6-02-10282024 | 68.2 | 75.1 | 74.4 | 76.5 | 53.8 | 44.7 | 54.6 | 67.4 |
| LCS 240-633477/3-A | Lab Control Sample | 78.8 | 104 | 97.1 | 94.5 | 82.0 | 88.8 | 104 | 116 |
| LLCS 240-633477/2-A | Lab Control Sample | 70.4 | 92.2 | 90.5 | 83.5 | 72.5 | 79.9 | 87.3 | 103 |
| MB 240-633477/1-A | Method Blank | 71.6 | 92.0 | 89.6 | 84.4 | 71.8 | 80.3 | 96.0 | 98.0 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | M262FTS | M282FTS | HFPODA | NMFM | NEFM | d5NPFSA | d3NMFSA | PFDoDA |
| Lab Sample ID | Client Sample ID | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) | (20-150) |
| 480-224895-1 | PILE1-01-10282024 | 137 | 163 *5+ | 78.2 | 61.4 | 73.9 | 83.5 | 73.8 | 74.5 |
| 480-224895-2 | PILE1-02-10282024 | 79.3 | 89.0 | 77.3 | 66.9 | 64.7 | 65.6 | 70.0 | 84.3 |
| 480-224895-7 | PILE2-01-10282024 | 104 | 110 | 90.3 | 70.0 | 68.9 | 74.1 | 75.6 | 97.1 |
| 480-224895-11 | PILE3-01-10282024 | 93.4 | 102 | 75.2 | 59.7 | 64.7 | 80.0 | 65.8 | 85.6 |
| 480-224895-12 | PILE3-02-10282024 | 83.0 | 83.9 | 79.1 | 68.0 | 63.8 | 58.3 | 58.3 | 81.3 |
| 480-224895-18 | PILE4-01-10282024 | 101 | 100 | 79.1 | 57.6 | 56.2 | 61.6 | 66.6 | 85.3 |
| 480-224895-19 | PILE4-02-10282024 | 123 | 130 | 88.8 | 69.1 | 83.2 | 73.2 | 75.2 | 101 |
| 480-224895-24 | PILE5-01-10282024 | 90.3 | 91.3 | 87.3 | 65.5 | 62.2 | 56.8 | 58.6 | 85.9 |
| 480-224895-25 | PILE6-01-10282024 | 91.0 | 97.1 | 76.6 | 52.4 | 50.7 | 57.5 | 56.7 | 84.2 |
| 480-224895-26 | PILE6-02-10282024 | 77.1 | 79.3 | 79.3 | 69.0 | 67.9 | 63.0 | 63.0 | 75.4 |
| 480-224895-26 DU | PILE6-02-10282024 | 64.7 | 73.4 | 73.4 | 61.9 | 62.4 | 56.3 | 54.1 | 72.9 |
| LCS 240-633477/3-A | Lab Control Sample | 113 | 112 | 101 | 82.0 | 79.6 | 63.1 | 67.4 | 90.7 |
| LLCS 240-633477/2-A | Lab Control Sample | 95.3 | 89.6 | 93.3 | 72.2 | 70.4 | 56.1 | 58.4 | 83.2 |
| MB 240-633477/1-A | Method Blank | 94.9 | 92.2 | 89.9 | 71.7 | 68.3 | 55.6 | 60.7 | 80.8 |

# Isotope Dilution Summary

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Surrogate Legend**

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 PFOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = D3-NMeFOSA
PFDoDA = 13C2-PFDoDA

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 480-730740/2-A**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | | 5.0 | 0.36 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 5.0 | 0.81 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,1,2-Trichloroethane | ND | | 5.0 | 0.65 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 5.0 | 1.1 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,1-Dichloroethane | ND | | 5.0 | 0.61 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,1-Dichloroethene | ND | | 5.0 | 0.61 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 5.0 | 0.30 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,2-Dichlorobenzene | ND | | 5.0 | 0.39 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,2-Dichloroethane | ND | | 5.0 | 0.25 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,2-Dichloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,3-Dichlorobenzene | ND | | 5.0 | 0.26 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,4-Dichlorobenzene | ND | | 5.0 | 0.70 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 2-Butanone (MEK) | ND | | 25 | 1.8 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 2-Hexanone | ND | | 25 | 2.5 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 25 | 1.6 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Acetone | ND | | 25 | 4.2 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Benzene | ND | | 5.0 | 0.25 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Bromodichloromethane | ND | | 5.0 | 0.67 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Bromoform | ND | | 5.0 | 2.5 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Bromomethane | ND | | 5.0 | 0.45 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Carbon disulfide | ND | | 5.0 | 2.5 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Carbon tetrachloride | ND | | 5.0 | 0.48 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Chlorobenzene | ND | | 5.0 | 0.66 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Dibromochloromethane | ND | | 5.0 | 0.64 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Chloroethane | ND | | 5.0 | 1.1 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Chloroform | 0.654 | J | 5.0 | 0.31 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Chloromethane | ND | | 5.0 | 0.30 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| cis-1,2-Dichloroethene | ND | | 5.0 | 0.64 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| cis-1,3-Dichloropropene | ND | | 5.0 | 0.72 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Cyclohexane | ND | | 5.0 | 0.70 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Dichlorodifluoromethane | ND | | 5.0 | 0.41 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Ethylbenzene | ND | | 5.0 | 0.35 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| 1,2-Dibromoethane | ND | | 5.0 | 0.64 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Isopropylbenzene | ND | | 5.0 | 0.75 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Methyl acetate | ND | | 25 | 3.0 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Methyl tert-butyl ether | ND | | 5.0 | 0.49 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Methylcyclohexane | ND | | 5.0 | 0.76 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Methylene Chloride | 2.79 | J | 5.0 | 2.3 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Styrene | ND | | 5.0 | 0.25 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Tetrachloroethene | ND | | 5.0 | 0.67 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Toluene | ND | | 5.0 | 0.38 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| trans-1,2-Dichloroethene | ND | | 5.0 | 0.52 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| trans-1,3-Dichloropropene | ND | | 5.0 | 2.2 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Trichloroethene | ND | | 5.0 | 1.1 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Trichlorofluoromethane | ND | | 5.0 | 0.47 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Vinyl chloride | ND | | 5.0 | 0.61 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |
| Xylenes, Total | ND | | 10 | 0.84 | ug/Kg | | 10/31/24 17:53 | 10/31/24 23:56 | 1 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 480-730740/2-A**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *92* | | *71 - 125* | *10/31/24 17:53* | *10/31/24 23:56* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *10/31/24 17:53* | *10/31/24 23:56* | *1* |
| *4-Bromofluorobenzene (Surr)* | *87* | | *72 - 126* | *10/31/24 17:53* | *10/31/24 23:56* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *60 - 140* | *10/31/24 17:53* | *10/31/24 23:56* | *1* |

**Lab Sample ID: LCS 480-730740/1-A**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 50.0 | 48.0 | | ug/Kg | | 96 | 77 - 121 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 50.3 | | ug/Kg | | 101 | 80 - 120 |
| 1,1,2-Trichloroethane | 50.0 | 47.9 | | ug/Kg | | 96 | 78 - 122 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 50.0 | 48.4 | | ug/Kg | | 97 | 60 - 140 |
| 1,1-Dichloroethane | 50.0 | 51.1 | | ug/Kg | | 102 | 73 - 126 |
| 1,1-Dichloroethene | 50.0 | 50.9 | | ug/Kg | | 102 | 59 - 125 |
| 1,2,4-Trichlorobenzene | 50.0 | 44.9 | | ug/Kg | | 90 | 64 - 120 |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 45.3 | | ug/Kg | | 91 | 63 - 124 |
| 1,2-Dichlorobenzene | 50.0 | 46.8 | | ug/Kg | | 94 | 75 - 120 |
| 1,2-Dichloroethane | 50.0 | 49.3 | | ug/Kg | | 99 | 77 - 122 |
| 1,2-Dichloropropane | 50.0 | 50.2 | | ug/Kg | | 100 | 75 - 124 |
| 1,3-Dichlorobenzene | 50.0 | 47.0 | | ug/Kg | | 94 | 74 - 120 |
| 1,4-Dichlorobenzene | 50.0 | 46.1 | | ug/Kg | | 92 | 73 - 120 |
| 2-Butanone (MEK) | 250 | 261 | | ug/Kg | | 104 | 70 - 134 |
| 2-Hexanone | 250 | 276 | | ug/Kg | | 111 | 59 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 250 | 278 | | ug/Kg | | 111 | 65 - 133 |
| Acetone | 250 | 252 | | ug/Kg | | 101 | 61 - 137 |
| Benzene | 50.0 | 48.6 | | ug/Kg | | 97 | 79 - 127 |
| Bromodichloromethane | 50.0 | 47.1 | | ug/Kg | | 94 | 80 - 122 |
| Bromoform | 50.0 | 43.1 | | ug/Kg | | 86 | 68 - 126 |
| Bromomethane | 50.0 | 45.7 | | ug/Kg | | 91 | 37 - 149 |
| Carbon disulfide | 50.0 | 50.5 | | ug/Kg | | 101 | 64 - 131 |
| Carbon tetrachloride | 50.0 | 45.6 | | ug/Kg | | 91 | 75 - 135 |
| Chlorobenzene | 50.0 | 47.3 | | ug/Kg | | 95 | 76 - 124 |
| Dibromochloromethane | 50.0 | 47.8 | | ug/Kg | | 96 | 76 - 125 |
| Chloroethane | 50.0 | 51.0 | | ug/Kg | | 102 | 69 - 135 |
| Chloroform | 50.0 | 46.8 | | ug/Kg | | 94 | 80 - 120 |
| Chloromethane | 50.0 | 51.3 | | ug/Kg | | 103 | 63 - 127 |
| cis-1,2-Dichloroethene | 50.0 | 47.1 | | ug/Kg | | 94 | 81 - 120 |
| cis-1,3-Dichloropropene | 50.0 | 46.6 | | ug/Kg | | 93 | 80 - 120 |
| Cyclohexane | 50.0 | 54.3 | | ug/Kg | | 109 | 65 - 120 |
| Dichlorodifluoromethane | 50.0 | 44.7 | | ug/Kg | | 89 | 57 - 142 |
| Ethylbenzene | 50.0 | 49.1 | | ug/Kg | | 98 | 80 - 120 |
| 1,2-Dibromoethane | 50.0 | 45.7 | | ug/Kg | | 91 | 78 - 120 |
| Isopropylbenzene | 50.0 | 46.9 | | ug/Kg | | 94 | 72 - 120 |
| Methyl acetate | 100 | 105 | | ug/Kg | | 105 | 55 - 136 |
| Methyl tert-butyl ether | 50.0 | 47.4 | | ug/Kg | | 95 | 63 - 125 |
| Methylcyclohexane | 50.0 | 50.3 | | ug/Kg | | 101 | 60 - 140 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 480-730740/1-A**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | | | 50.0 | 48.1 | | ug/Kg | | 96 | 61 - 127 | | |
| Styrene | | | 50.0 | 46.9 | | ug/Kg | | 94 | 80 - 120 | | |
| Tetrachloroethene | | | 50.0 | 46.0 | | ug/Kg | | 92 | 74 - 122 | | |
| Toluene | | | 50.0 | 48.2 | | ug/Kg | | 96 | 74 - 128 | | |
| trans-1,2-Dichloroethene | | | 50.0 | 49.3 | | ug/Kg | | 99 | 78 - 126 | | |
| trans-1,3-Dichloropropene | | | 50.0 | 46.1 | | ug/Kg | | 92 | 73 - 123 | | |
| Trichloroethene | | | 50.0 | 47.6 | | ug/Kg | | 95 | 77 - 129 | | |
| Trichlorofluoromethane | | | 50.0 | 47.9 | | ug/Kg | | 96 | 65 - 146 | | |
| Vinyl chloride | | | 50.0 | 49.7 | | ug/Kg | | 99 | 61 - 133 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *91* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *91* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *88* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *93* | | *60 - 140* |

**Lab Sample ID: 480-224895-1 MS**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: PILE1-01-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F1 vs | 54.4 | 39.2 | F1 vs | ug/Kg | ☼ | 72 | 77 - 121 | | |
| 1,1,2,2-Tetrachloroethane | ND | F1 vs | 54.4 | 35.1 | F1 vs | ug/Kg | ☼ | 64 | 80 - 120 | | |
| 1,1,2-Trichloroethane | ND | F1 vs | 54.4 | 35.5 | F1 vs | ug/Kg | ☼ | 65 | 78 - 122 | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 54.4 | 34.9 | vs | ug/Kg | ☼ | 64 | 60 - 140 | | |
| 1,1-Dichloroethane | ND | vs | 54.4 | 44.4 | vs | ug/Kg | ☼ | 82 | 73 - 126 | | |
| 1,1-Dichloroethene | ND | F1 vs | 54.4 | 33.5 | vs | ug/Kg | ☼ | 62 | 59 - 125 | | |
| 1,2,4-Trichlorobenzene | ND | F1 vs | 54.4 | 10.1 | F1 vs | ug/Kg | ☼ | 19 | 64 - 120 | | |
| 1,2-Dibromo-3-Chloropropane | ND | F1 vs | 54.4 | 24.3 | F1 vs | ug/Kg | ☼ | 45 | 63 - 124 | | |
| 1,2-Dichlorobenzene | ND | F1 vs | 54.4 | 23.5 | F1 vs | ug/Kg | ☼ | 43 | 75 - 120 | | |
| 1,2-Dichloroethane | ND | F1 vs | 54.4 | 35.5 | F1 vs | ug/Kg | ☼ | 65 | 77 - 122 | | |
| 1,2-Dichloropropane | ND | vs | 54.4 | 42.2 | vs | ug/Kg | ☼ | 78 | 75 - 124 | | |
| 1,3-Dichlorobenzene | ND | F1 vs | 54.4 | 20.7 | F1 vs | ug/Kg | ☼ | 38 | 74 - 120 | | |
| 1,4-Dichlorobenzene | ND | F1 vs | 54.4 | 19.3 | F1 vs | ug/Kg | ☼ | 35 | 73 - 120 | | |
| 2-Butanone (MEK) | ND | F1 vs | 272 | 145 | F1 vs | ug/Kg | ☼ | 53 | 70 - 134 | | |
| 2-Hexanone | ND | F1 vs | 272 | 136 | F1 vs | ug/Kg | ☼ | 50 | 59 - 130 | | |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 272 | 183 | vs | ug/Kg | ☼ | 67 | 65 - 133 | | |
| Acetone | ND | F1 F2 vs | 272 | 151 | F1 vs | ug/Kg | ☼ | 56 | 61 - 137 | | |
| Benzene | ND | F1 vs | 54.4 | 38.5 | F1 vs | ug/Kg | ☼ | 71 | 79 - 127 | | |
| Bromodichloromethane | ND | F1 vs | 54.4 | 34.5 | F1 vs | ug/Kg | ☼ | 63 | 80 - 122 | | |
| Bromoform | ND | F1 vs | 54.4 | 24.9 | F1 vs | ug/Kg | ☼ | 46 | 68 - 126 | | |
| Bromomethane | ND | vs | 54.4 | 37.9 | vs | ug/Kg | ☼ | 70 | 37 - 149 | | |
| Carbon disulfide | ND | F1 vs | 54.4 | 22.4 | F1 vs | ug/Kg | ☼ | 41 | 64 - 131 | | |
| Carbon tetrachloride | ND | F1 vs | 54.4 | 32.4 | F1 vs | ug/Kg | ☼ | 60 | 75 - 135 | | |
| Chlorobenzene | ND | F1 vs | 54.4 | 29.5 | F1 vs | ug/Kg | ☼ | 54 | 76 - 124 | | |
| Dibromochloromethane | ND | F1 vs | 54.4 | 32.8 | F1 vs | ug/Kg | ☼ | 60 | 76 - 125 | | |
| Chloroethane | ND | vs | 54.4 | 40.3 | vs | ug/Kg | ☼ | 74 | 69 - 135 | | |
| Chloroform | 0.58 | J B F1 vs | 54.4 | 38.9 | F1 vs | ug/Kg | ☼ | 70 | 80 - 120 | | |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-1 MS**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: PILE1-01-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Chloromethane | ND | vs | 54.4 | 41.6 | vs | ug/Kg | ☼ | 77 | 63 - 127 |
| cis-1,2-Dichloroethene | ND | F1 vs | 54.4 | 31.7 | F1 vs | ug/Kg | ☼ | 58 | 80 - 120 |
| cis-1,3-Dichloropropene | ND | F1 vs | 54.4 | 24.9 | F1 vs | ug/Kg | ☼ | 46 | 80 - 120 |
| Cyclohexane | ND | F1 vs | 54.4 | 32.2 | F1 vs | ug/Kg | ☼ | 59 | 65 - 120 |
| Dichlorodifluoromethane | ND | vs | 54.4 | 34.8 | vs | ug/Kg | ☼ | 64 | 57 - 142 |
| Ethylbenzene | ND | F1 vs | 54.4 | 31.2 | F1 vs | ug/Kg | ☼ | 57 | 80 - 120 |
| 1,2-Dibromoethane | ND | F1 vs | 54.4 | 25.3 | F1 vs | ug/Kg | ☼ | 47 | 78 - 120 |
| Isopropylbenzene | ND | F1 vs | 54.4 | 30.1 | F1 vs | ug/Kg | ☼ | 55 | 72 - 120 |
| Methyl acetate | ND | vs | 109 | 92.2 | vs | ug/Kg | ☼ | 85 | 55 - 136 |
| Methyl tert-butyl ether | ND | vs | 54.4 | 40.8 | vs | ug/Kg | ☼ | 75 | 63 - 125 |
| Methylcyclohexane | ND | F1 vs | 54.4 | 20.9 | F1 vs | ug/Kg | ☼ | 38 | 60 - 140 |
| Methylene Chloride | 3.1 | J B vs | 54.4 | 43.0 | vs | ug/Kg | ☼ | 73 | 61 - 127 |
| Styrene | ND | F1 vs | 54.4 | 26.5 | F1 vs | ug/Kg | ☼ | 49 | 80 - 120 |
| Tetrachloroethene | ND | F1 vs | 54.4 | 27.1 | F1 vs | ug/Kg | ☼ | 50 | 74 - 122 |
| Toluene | ND | F1 vs | 54.4 | 36.1 | F1 vs | ug/Kg | ☼ | 66 | 74 - 128 |
| trans-1,2-Dichloroethene | ND | F1 vs | 54.4 | 27.3 | F1 vs | ug/Kg | ☼ | 50 | 78 - 126 |
| trans-1,3-Dichloropropene | ND | F1 vs | 54.4 | 20.7 | F1 vs | ug/Kg | ☼ | 38 | 73 - 123 |
| Trichloroethene | ND | F1 vs | 54.4 | 28.4 | F1 vs | ug/Kg | ☼ | 52 | 77 - 129 |
| Trichlorofluoromethane | ND | vs | 54.4 | 36.4 | vs | ug/Kg | ☼ | 67 | 65 - 146 |
| Vinyl chloride | ND | vs | 54.4 | 33.5 | vs | ug/Kg | ☼ | 62 | 61 - 133 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *93* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *81* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *82* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *89* | | *60 - 140* |

**Lab Sample ID: 480-224895-1 MSD**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: PILE1-01-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F1 vs | 54.0 | 37.0 | F1 vs | ug/Kg | ☼ | 69 | 77 - 121 | 6 | 30 |
| 1,1,2,2-Tetrachloroethane | ND | F1 vs | 54.0 | 33.5 | F1 vs | ug/Kg | ☼ | 62 | 80 - 120 | 5 | 30 |
| 1,1,2-Trichloroethane | ND | F1 vs | 54.0 | 35.8 | F1 vs | ug/Kg | ☼ | 66 | 78 - 122 | 1 | 30 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 54.0 | 34.5 | vs | ug/Kg | ☼ | 64 | 60 - 140 | 1 | 30 |
| 1,1-Dichloroethane | ND | vs | 54.0 | 41.1 | vs | ug/Kg | ☼ | 76 | 73 - 126 | 8 | 30 |
| 1,1-Dichloroethene | ND | F1 vs | 54.0 | 30.4 | F1 vs | ug/Kg | ☼ | 56 | 59 - 125 | 10 | 30 |
| 1,2,4-Trichlorobenzene | ND | F1 vs | 54.0 | 8.59 | F1 vs | ug/Kg | ☼ | 16 | 64 - 120 | 16 | 30 |
| 1,2-Dibromo-3-Chloropropane | ND | F1 vs | 54.0 | 24.7 | F1 vs | ug/Kg | ☼ | 46 | 63 - 124 | 2 | 30 |
| 1,2-Dichlorobenzene | ND | F1 vs | 54.0 | 20.7 | F1 vs | ug/Kg | ☼ | 38 | 75 - 120 | 13 | 30 |
| 1,2-Dichloroethane | ND | F1 vs | 54.0 | 32.7 | F1 vs | ug/Kg | ☼ | 61 | 77 - 122 | 8 | 30 |
| 1,2-Dichloropropane | ND | vs | 54.0 | 40.6 | vs | ug/Kg | ☼ | 75 | 75 - 124 | 4 | 30 |
| 1,3-Dichlorobenzene | ND | F1 vs | 54.0 | 17.7 | F1 vs | ug/Kg | ☼ | 33 | 74 - 120 | 16 | 30 |
| 1,4-Dichlorobenzene | ND | F1 vs | 54.0 | 16.6 | F1 vs | ug/Kg | ☼ | 31 | 73 - 120 | 15 | 30 |
| 2-Butanone (MEK) | ND | F1 vs | 270 | 120 | F1 vs | ug/Kg | ☼ | 44 | 70 - 134 | 19 | 30 |
| 2-Hexanone | ND | F1 vs | 270 | 147 | F1 vs | ug/Kg | ☼ | 54 | 59 - 130 | 8 | 30 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 270 | 193 | vs | ug/Kg | ☼ | 72 | 65 - 133 | 6 | 30 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-1 MSD**
**Matrix: Solid**
**Analysis Batch: 730750**

**Client Sample ID: PILE1-01-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730740**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | F1 F2 vs | 270 | 110 | F1 F2 vs | ug/Kg | ☼ | 41 | 61 - 137 | 32 | 30 |
| Benzene | ND | F1 vs | 54.0 | 35.7 | F1 vs | ug/Kg | ☼ | 66 | 79 - 127 | 8 | 30 |
| Bromodichloromethane | ND | F1 vs | 54.0 | 33.2 | F1 vs | ug/Kg | ☼ | 61 | 80 - 122 | 4 | 30 |
| Bromoform | ND | F1 vs | 54.0 | 25.5 | F1 vs | ug/Kg | ☼ | 47 | 68 - 126 | 2 | 30 |
| Bromomethane | ND | vs | 54.0 | 37.1 | vs | ug/Kg | ☼ | 69 | 37 - 149 | 2 | 30 |
| Carbon disulfide | ND | F1 vs | 54.0 | 20.3 | F1 vs | ug/Kg | ☼ | 38 | 64 - 131 | 10 | 30 |
| Carbon tetrachloride | ND | F1 vs | 54.0 | 31.1 | F1 vs | ug/Kg | ☼ | 58 | 75 - 135 | 4 | 30 |
| Chlorobenzene | ND | F1 vs | 54.0 | 26.6 | F1 vs | ug/Kg | ☼ | 49 | 76 - 124 | 10 | 30 |
| Dibromochloromethane | ND | F1 vs | 54.0 | 32.3 | F1 vs | ug/Kg | ☼ | 60 | 76 - 125 | 2 | 30 |
| Chloroethane | ND | vs | 54.0 | 40.6 | vs | ug/Kg | ☼ | 75 | 69 - 135 | 1 | 30 |
| Chloroform | 0.58 | J B F1 vs | 54.0 | 35.8 | F1 vs | ug/Kg | ☼ | 65 | 80 - 120 | 8 | 30 |
| Chloromethane | ND | vs | 54.0 | 42.3 | vs | ug/Kg | ☼ | 78 | 63 - 127 | 1 | 30 |
| cis-1,2-Dichloroethene | ND | F1 vs | 54.0 | 29.1 | F1 vs | ug/Kg | ☼ | 54 | 80 - 120 | 9 | 30 |
| cis-1,3-Dichloropropene | ND | F1 vs | 54.0 | 23.7 | F1 vs | ug/Kg | ☼ | 44 | 80 - 120 | 5 | 30 |
| Cyclohexane | ND | F1 vs | 54.0 | 28.8 | F1 vs | ug/Kg | ☼ | 53 | 65 - 120 | 11 | 30 |
| Dichlorodifluoromethane | ND | vs | 54.0 | 35.7 | vs | ug/Kg | ☼ | 66 | 57 - 142 | 2 | 30 |
| Ethylbenzene | ND | F1 vs | 54.0 | 28.4 | F1 vs | ug/Kg | ☼ | 53 | 80 - 120 | 9 | 30 |
| 1,2-Dibromoethane | ND | F1 vs | 54.0 | 25.7 | F1 vs | ug/Kg | ☼ | 48 | 78 - 120 | 1 | 30 |
| Isopropylbenzene | ND | F1 vs | 54.0 | 25.8 | F1 vs | ug/Kg | ☼ | 48 | 72 - 120 | 15 | 30 |
| Methyl acetate | ND | vs | 108 | 73.2 | vs | ug/Kg | ☼ | 68 | 55 - 136 | 23 | 30 |
| Methyl tert-butyl ether | ND | vs | 54.0 | 39.1 | vs | ug/Kg | ☼ | 72 | 63 - 125 | 4 | 30 |
| Methylcyclohexane | ND | F1 vs | 54.0 | 17.7 | F1 vs | ug/Kg | ☼ | 33 | 60 - 140 | 17 | 30 |
| Methylene Chloride | 3.1 | J B vs | 54.0 | 39.2 | vs | ug/Kg | ☼ | 67 | 61 - 127 | 9 | 30 |
| Styrene | ND | F1 vs | 54.0 | 24.1 | F1 vs | ug/Kg | ☼ | 45 | 80 - 120 | 9 | 30 |
| Tetrachloroethene | ND | F1 vs | 54.0 | 24.0 | F1 vs | ug/Kg | ☼ | 44 | 74 - 122 | 12 | 30 |
| Toluene | ND | F1 vs | 54.0 | 33.4 | F1 vs | ug/Kg | ☼ | 62 | 74 - 128 | 8 | 30 |
| trans-1,2-Dichloroethene | ND | F1 vs | 54.0 | 24.4 | F1 vs | ug/Kg | ☼ | 45 | 78 - 126 | 11 | 30 |
| trans-1,3-Dichloropropene | ND | F1 vs | 54.0 | 20.1 | F1 vs | ug/Kg | ☼ | 37 | 73 - 123 | 3 | 30 |
| Trichloroethene | ND | F1 vs | 54.0 | 25.3 | F1 vs | ug/Kg | ☼ | 47 | 77 - 129 | 12 | 30 |
| Trichlorofluoromethane | ND | vs | 54.0 | 35.5 | vs | ug/Kg | ☼ | 66 | 65 - 146 | 3 | 30 |
| Vinyl chloride | ND | vs | 54.0 | 33.6 | vs | ug/Kg | ☼ | 62 | 61 - 133 | 0 | 30 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *93* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *82* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *84* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *87* | | *60 - 140* |

**Lab Sample ID: MB 480-730798/3-A**
**Matrix: Solid**
**Analysis Batch: 730795**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730798**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | | 100 | 28 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 100 | 16 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,1,2-Trichloroethane | ND | | 100 | 21 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 100 | 50 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,1-Dichloroethane | ND | | 100 | 31 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 480-730798/3-A**
**Matrix: Solid**
**Analysis Batch: 730795**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730798**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | ND | | 100 | 35 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 100 | 38 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | 50 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,2-Dichlorobenzene | ND | | 100 | 26 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,2-Dichloroethane | ND | | 100 | 41 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,2-Dichloropropane | ND | | 100 | 16 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,3-Dichlorobenzene | ND | | 100 | 27 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,4-Dichlorobenzene | ND | | 100 | 14 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 2-Butanone (MEK) | ND | | 500 | 300 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 2-Hexanone | ND | | 500 | 210 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 500 | 32 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Acetone | ND | | 500 | 410 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Benzene | ND | | 100 | 19 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Bromodichloromethane | ND | | 100 | 20 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Bromoform | ND | | 100 | 50 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Bromomethane | ND | | 100 | 22 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Carbon disulfide | ND | | 100 | 46 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Carbon tetrachloride | ND | | 100 | 26 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Chlorobenzene | ND | | 100 | 13 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Dibromochloromethane | ND | | 100 | 48 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Chloroethane | ND | | 100 | 21 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Chloroform | ND | | 100 | 69 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Chloromethane | ND | | 100 | 24 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| cis-1,2-Dichloroethene | ND | | 100 | 28 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| cis-1,3-Dichloropropene | ND | | 100 | 24 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Cyclohexane | ND | | 100 | 22 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Dichlorodifluoromethane | ND | | 100 | 44 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Ethylbenzene | ND | | 100 | 29 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| 1,2-Dibromoethane | ND | | 100 | 18 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Isopropylbenzene | ND | | 100 | 15 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Methyl acetate | ND | | 500 | 48 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Methyl tert-butyl ether | ND | | 100 | 38 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Methylcyclohexane | ND | | 100 | 47 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Methylene Chloride | 61.3 | J | 100 | 20 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Styrene | ND | | 100 | 24 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Tetrachloroethene | ND | | 100 | 13 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Toluene | ND | | 100 | 27 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| trans-1,2-Dichloroethene | ND | | 100 | 24 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| trans-1,3-Dichloropropene | ND | | 100 | 9.8 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Trichloroethene | ND | | 100 | 28 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Trichlorofluoromethane | ND | | 100 | 47 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Vinyl chloride | ND | | 100 | 34 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |
| Xylenes, Total | ND | | 200 | 55 | ug/Kg | | 11/01/24 09:05 | 11/01/24 12:23 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *97* | | *50 - 149* | *11/01/24 09:05* | *11/01/24 12:23* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *53 - 146* | *11/01/24 09:05* | *11/01/24 12:23* | *1* |
| *4-Bromofluorobenzene (Surr)* | *95* | | *49 - 148* | *11/01/24 09:05* | *11/01/24 12:23* | *1* |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 480-730798/3-A**
**Matrix: Solid**
**Analysis Batch: 730795**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730798**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *Dibromofluoromethane (Surr)* | *91* | | *60 - 140* | *11/01/24 09:05* | *11/01/24 12:23* | *1* |

**Lab Sample ID: LCS 480-730798/1-A**
**Matrix: Solid**
**Analysis Batch: 730795**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730798**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 2500 | 2480 | | ug/Kg | | 99 | 68 - 130 |
| 1,1,2,2-Tetrachloroethane | 2500 | 2520 | | ug/Kg | | 101 | 73 - 120 |
| 1,1,2-Trichloroethane | 2500 | 2400 | | ug/Kg | | 96 | 80 - 120 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 2500 | 2070 | | ug/Kg | | 83 | 10 - 179 |
| 1,1-Dichloroethane | 2500 | 2530 | | ug/Kg | | 101 | 78 - 121 |
| 1,1-Dichloroethene | 2500 | 1980 | | ug/Kg | | 79 | 48 - 133 |
| 1,2,4-Trichlorobenzene | 2500 | 2780 | | ug/Kg | | 111 | 70 - 140 |
| 1,2-Dibromo-3-Chloropropane | 2500 | 2100 | | ug/Kg | | 84 | 56 - 122 |
| 1,2-Dichlorobenzene | 2500 | 2630 | | ug/Kg | | 105 | 78 - 125 |
| 1,2-Dichloroethane | 2500 | 2490 | | ug/Kg | | 99 | 74 - 127 |
| 1,2-Dichloropropane | 2500 | 2490 | | ug/Kg | | 100 | 80 - 120 |
| 1,3-Dichlorobenzene | 2500 | 2570 | | ug/Kg | | 103 | 80 - 120 |
| 1,4-Dichlorobenzene | 2500 | 2550 | | ug/Kg | | 102 | 80 - 120 |
| 2-Butanone (MEK) | 12500 | 13600 | | ug/Kg | | 108 | 54 - 149 |
| 2-Hexanone | 12500 | 13600 | | ug/Kg | | 109 | 59 - 127 |
| 4-Methyl-2-pentanone (MIBK) | 12500 | 13400 | | ug/Kg | | 107 | 74 - 120 |
| Acetone | 12500 | 12900 | | ug/Kg | | 103 | 47 - 141 |
| Benzene | 2500 | 2420 | | ug/Kg | | 97 | 77 - 125 |
| Bromodichloromethane | 2500 | 2440 | | ug/Kg | | 98 | 71 - 121 |
| Bromoform | 2500 | 2090 | | ug/Kg | | 84 | 48 - 125 |
| Bromomethane | 2500 | 1700 | | ug/Kg | | 68 | 39 - 149 |
| Carbon disulfide | 2500 | 2210 | | ug/Kg | | 89 | 40 - 136 |
| Carbon tetrachloride | 2500 | 2510 | | ug/Kg | | 101 | 54 - 135 |
| Chlorobenzene | 2500 | 2370 | | ug/Kg | | 95 | 76 - 126 |
| Dibromochloromethane | 2500 | 2440 | | ug/Kg | | 98 | 64 - 120 |
| Chloroethane | 2500 | 2220 | | ug/Kg | | 89 | 23 - 150 |
| Chloroform | 2500 | 2290 | | ug/Kg | | 91 | 78 - 120 |
| Chloromethane | 2500 | 2610 | | ug/Kg | | 105 | 61 - 124 |
| cis-1,2-Dichloroethene | 2500 | 2500 | | ug/Kg | | 100 | 79 - 124 |
| cis-1,3-Dichloropropene | 2500 | 2570 | | ug/Kg | | 103 | 75 - 121 |
| Cyclohexane | 2500 | 2750 | | ug/Kg | | 110 | 49 - 129 |
| Dichlorodifluoromethane | 2500 | 2350 | | ug/Kg | | 94 | 10 - 150 |
| Ethylbenzene | 2500 | 2380 | | ug/Kg | | 95 | 78 - 124 |
| 1,2-Dibromoethane | 2500 | 2360 | | ug/Kg | | 94 | 80 - 120 |
| Isopropylbenzene | 2500 | 2690 | | ug/Kg | | 107 | 76 - 120 |
| Methyl acetate | 5000 | 5500 | | ug/Kg | | 110 | 71 - 123 |
| Methyl tert-butyl ether | 2500 | 2500 | | ug/Kg | | 100 | 67 - 137 |
| Methylcyclohexane | 2500 | 2730 | | ug/Kg | | 109 | 50 - 130 |
| Methylene Chloride | 2500 | 2420 | | ug/Kg | | 97 | 75 - 118 |
| Styrene | 2500 | 2350 | | ug/Kg | | 94 | 80 - 120 |
| Tetrachloroethene | 2500 | 2570 | | ug/Kg | | 103 | 73 - 133 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 480-730798/1-A**
**Matrix: Solid**
**Analysis Batch: 730795**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730798**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Toluene | 2500 | 2370 | | ug/Kg | | 95 | 75 - 124 |
| trans-1,2-Dichloroethene | 2500 | 2390 | | ug/Kg | | 96 | 74 - 129 |
| trans-1,3-Dichloropropene | 2500 | 2500 | | ug/Kg | | 100 | 73 - 120 |
| Trichloroethene | 2500 | 2400 | | ug/Kg | | 96 | 75 - 131 |
| Trichlorofluoromethane | 2500 | 2330 | | ug/Kg | | 93 | 29 - 158 |
| Vinyl chloride | 2500 | 2520 | | ug/Kg | | 101 | 59 - 124 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *98* | | *50 - 149* |
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *53 - 146* |
| *4-Bromofluorobenzene (Surr)* | *86* | | *49 - 148* |
| *Dibromofluoromethane (Surr)* | *97* | | *60 - 140* |

**Lab Sample ID: MB 480-730832/2-A**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | | 5.0 | 0.36 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 5.0 | 0.81 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,1,2-Trichloroethane | ND | | 5.0 | 0.65 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 5.0 | 1.1 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,1-Dichloroethane | ND | | 5.0 | 0.61 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,1-Dichloroethene | ND | | 5.0 | 0.61 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 5.0 | 0.30 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,2-Dichlorobenzene | ND | | 5.0 | 0.39 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,2-Dichloroethane | ND | | 5.0 | 0.25 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,2-Dichloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,3-Dichlorobenzene | ND | | 5.0 | 0.26 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,4-Dichlorobenzene | ND | | 5.0 | 0.70 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 2-Butanone (MEK) | ND | | 25 | 1.8 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 2-Hexanone | ND | | 25 | 2.5 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 25 | 1.6 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Acetone | ND | | 25 | 4.2 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Benzene | ND | | 5.0 | 0.25 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Bromodichloromethane | ND | | 5.0 | 0.67 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Bromoform | ND | | 5.0 | 2.5 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Bromomethane | ND | | 5.0 | 0.45 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Carbon disulfide | ND | | 5.0 | 2.5 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Carbon tetrachloride | ND | | 5.0 | 0.48 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Chlorobenzene | ND | | 5.0 | 0.66 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Dibromochloromethane | ND | | 5.0 | 0.64 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Chloroethane | ND | | 5.0 | 1.1 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Chloroform | 0.690 | J | 5.0 | 0.31 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Chloromethane | ND | | 5.0 | 0.30 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| cis-1,2-Dichloroethene | ND | | 5.0 | 0.64 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| cis-1,3-Dichloropropene | ND | | 5.0 | 0.72 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 480-730832/2-A**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyclohexane | ND | | 5.0 | 0.70 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Dichlorodifluoromethane | ND | | 5.0 | 0.41 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Ethylbenzene | ND | | 5.0 | 0.35 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| 1,2-Dibromoethane | ND | | 5.0 | 0.64 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Isopropylbenzene | ND | | 5.0 | 0.75 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Methyl acetate | ND | | 25 | 3.0 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Methyl tert-butyl ether | ND | | 5.0 | 0.49 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Methylcyclohexane | ND | | 5.0 | 0.76 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Methylene Chloride | ND | | 5.0 | 2.3 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Styrene | ND | | 5.0 | 0.25 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Tetrachloroethene | ND | | 5.0 | 0.67 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Toluene | ND | | 5.0 | 0.38 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| trans-1,2-Dichloroethene | ND | | 5.0 | 0.52 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| trans-1,3-Dichloropropene | ND | | 5.0 | 2.2 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Trichloroethene | ND | | 5.0 | 1.1 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Trichlorofluoromethane | ND | | 5.0 | 0.47 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Vinyl chloride | ND | | 5.0 | 0.61 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |
| Xylenes, Total | ND | | 10 | 0.84 | ug/Kg | | 11/01/24 11:35 | 11/02/24 22:04 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *92* | | *71 - 125* | *11/01/24 11:35* | *11/02/24 22:04* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *64 - 126* | *11/01/24 11:35* | *11/02/24 22:04* | *1* |
| *4-Bromofluorobenzene (Surr)* | *85* | | *72 - 126* | *11/01/24 11:35* | *11/02/24 22:04* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *60 - 140* | *11/01/24 11:35* | *11/02/24 22:04* | *1* |

**Lab Sample ID: LCS 480-730832/1-A**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 50.0 | 45.3 | | ug/Kg | | 91 | 77 - 121 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 55.0 | | ug/Kg | | 110 | 80 - 120 |
| 1,1,2-Trichloroethane | 50.0 | 50.4 | | ug/Kg | | 101 | 78 - 122 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 50.0 | 45.4 | | ug/Kg | | 91 | 60 - 140 |
| 1,1-Dichloroethane | 50.0 | 49.0 | | ug/Kg | | 98 | 73 - 126 |
| 1,1-Dichloroethene | 50.0 | 47.9 | | ug/Kg | | 96 | 59 - 125 |
| 1,2,4-Trichlorobenzene | 50.0 | 45.0 | | ug/Kg | | 90 | 64 - 120 |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 50.3 | | ug/Kg | | 101 | 63 - 124 |
| 1,2-Dichlorobenzene | 50.0 | 48.3 | | ug/Kg | | 97 | 75 - 120 |
| 1,2-Dichloroethane | 50.0 | 49.1 | | ug/Kg | | 98 | 77 - 122 |
| 1,2-Dichloropropane | 50.0 | 49.3 | | ug/Kg | | 99 | 75 - 124 |
| 1,3-Dichlorobenzene | 50.0 | 48.2 | | ug/Kg | | 96 | 74 - 120 |
| 1,4-Dichlorobenzene | 50.0 | 46.8 | | ug/Kg | | 94 | 73 - 120 |
| 2-Butanone (MEK) | 250 | 215 | | ug/Kg | | 86 | 70 - 134 |
| 2-Hexanone | 250 | 303 | | ug/Kg | | 121 | 59 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 250 | 301 | | ug/Kg | | 120 | 65 - 133 |
| Acetone | 250 | 168 | | ug/Kg | | 67 | 61 - 137 |
| Benzene | 50.0 | 47.5 | | ug/Kg | | 95 | 79 - 127 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 480-730832/1-A**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 50.0 | 45.4 | | ug/Kg | | 91 | 80 - 122 |
| Bromoform | 50.0 | 43.9 | | ug/Kg | | 88 | 68 - 126 |
| Bromomethane | 50.0 | 45.8 | | ug/Kg | | 92 | 37 - 149 |
| Carbon disulfide | 50.0 | 47.3 | | ug/Kg | | 95 | 64 - 131 |
| Carbon tetrachloride | 50.0 | 42.0 | | ug/Kg | | 84 | 75 - 135 |
| Chlorobenzene | 50.0 | 47.3 | | ug/Kg | | 95 | 76 - 124 |
| Dibromochloromethane | 50.0 | 47.8 | | ug/Kg | | 96 | 76 - 125 |
| Chloroethane | 50.0 | 48.7 | | ug/Kg | | 97 | 69 - 135 |
| Chloroform | 50.0 | 44.8 | | ug/Kg | | 90 | 80 - 120 |
| Chloromethane | 50.0 | 48.5 | | ug/Kg | | 97 | 63 - 127 |
| cis-1,2-Dichloroethene | 50.0 | 45.4 | | ug/Kg | | 91 | 81 - 120 |
| cis-1,3-Dichloropropene | 50.0 | 45.3 | | ug/Kg | | 91 | 80 - 120 |
| Cyclohexane | 50.0 | 52.0 | | ug/Kg | | 104 | 65 - 120 |
| Dichlorodifluoromethane | 50.0 | 40.6 | | ug/Kg | | 81 | 57 - 142 |
| Ethylbenzene | 50.0 | 47.8 | | ug/Kg | | 96 | 80 - 120 |
| 1,2-Dibromoethane | 50.0 | 46.9 | | ug/Kg | | 94 | 78 - 120 |
| Isopropylbenzene | 50.0 | 47.6 | | ug/Kg | | 95 | 72 - 120 |
| Methyl acetate | 100 | 88.5 | | ug/Kg | | 89 | 55 - 136 |
| Methyl tert-butyl ether | 50.0 | 43.3 | | ug/Kg | | 87 | 63 - 125 |
| Methylcyclohexane | 50.0 | 47.2 | | ug/Kg | | 94 | 60 - 140 |
| Methylene Chloride | 50.0 | 46.0 | | ug/Kg | | 92 | 61 - 127 |
| Styrene | 50.0 | 46.7 | | ug/Kg | | 93 | 80 - 120 |
| Tetrachloroethene | 50.0 | 45.2 | | ug/Kg | | 90 | 74 - 122 |
| Toluene | 50.0 | 48.6 | | ug/Kg | | 97 | 74 - 128 |
| trans-1,2-Dichloroethene | 50.0 | 46.4 | | ug/Kg | | 93 | 78 - 126 |
| trans-1,3-Dichloropropene | 50.0 | 46.6 | | ug/Kg | | 93 | 73 - 123 |
| Trichloroethene | 50.0 | 45.8 | | ug/Kg | | 92 | 77 - 129 |
| Trichlorofluoromethane | 50.0 | 43.9 | | ug/Kg | | 88 | 65 - 146 |
| Vinyl chloride | 50.0 | 46.6 | | ug/Kg | | 93 | 61 - 133 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *90* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *86* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *92* | | *60 - 140* |

**Lab Sample ID: 480-224895-20 MS**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: PILE4-03-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F1 vs | 52.5 | 39.9 | F1 vs | ug/Kg | ☼ | 76 | 77 - 121 |
| 1,1,2,2-Tetrachloroethane | ND | F1 vs | 52.5 | 37.2 | F1 vs | ug/Kg | ☼ | 71 | 80 - 120 |
| 1,1,2-Trichloroethane | ND | F1 vs | 52.5 | 40.3 | F1 vs | ug/Kg | ☼ | 77 | 78 - 122 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 52.5 | 35.4 | vs | ug/Kg | ☼ | 67 | 60 - 140 |
| 1,1-Dichloroethane | ND | vs | 52.5 | 48.4 | vs | ug/Kg | ☼ | 92 | 73 - 126 |
| 1,1-Dichloroethene | ND | vs | 52.5 | 37.4 | vs | ug/Kg | ☼ | 71 | 59 - 125 |
| 1,2,4-Trichlorobenzene | ND | F1 vs | 52.5 | 12.6 | F1 vs | ug/Kg | ☼ | 24 | 64 - 120 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-20 MS**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: PILE4-03-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | F1 vs | 52.5 | 25.6 | F1 vs | ug/Kg | ☼ | 49 | 63 - 124 |
| 1,2-Dichlorobenzene | ND | F1 vs | 52.5 | 28.9 | F1 vs | ug/Kg | ☼ | 55 | 75 - 120 |
| 1,2-Dichloroethane | ND | F1 vs | 52.5 | 39.0 | F1 vs | ug/Kg | ☼ | 74 | 77 - 122 |
| 1,2-Dichloropropane | ND | vs | 52.5 | 47.3 | vs | ug/Kg | ☼ | 90 | 75 - 124 |
| 1,3-Dichlorobenzene | ND | F1 vs | 52.5 | 27.2 | F1 vs | ug/Kg | ☼ | 52 | 74 - 120 |
| 1,4-Dichlorobenzene | ND | F1 vs | 52.5 | 25.8 | F1 vs | ug/Kg | ☼ | 49 | 73 - 120 |
| 2-Butanone (MEK) | ND | F1 vs | 262 | 131 | F1 vs | ug/Kg | ☼ | 50 | 70 - 134 |
| 2-Hexanone | ND | F1 vs | 262 | 144 | F1 vs | ug/Kg | ☼ | 55 | 59 - 130 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 262 | 182 | vs | ug/Kg | ☼ | 69 | 65 - 133 |
| Acetone | ND | F1 vs | 262 | 129 | F1 vs | ug/Kg | ☼ | 49 | 61 - 137 |
| Benzene | ND | F1 vs | 52.5 | 42.8 | vs | ug/Kg | ☼ | 82 | 79 - 127 |
| Bromodichloromethane | ND | F1 vs | 52.5 | 39.6 | F1 vs | ug/Kg | ☼ | 75 | 80 - 122 |
| Bromoform | ND | F1 vs | 52.5 | 29.0 | F1 vs | ug/Kg | ☼ | 55 | 68 - 126 |
| Bromomethane | ND | vs | 52.5 | 47.6 | vs | ug/Kg | ☼ | 91 | 37 - 149 |
| Carbon disulfide | ND | F1 vs | 52.5 | 29.5 | F1 vs | ug/Kg | ☼ | 56 | 64 - 131 |
| Carbon tetrachloride | ND | F1 vs | 52.5 | 33.8 | F1 vs | ug/Kg | ☼ | 64 | 75 - 135 |
| Chlorobenzene | ND | F1 vs | 52.5 | 36.5 | F1 vs | ug/Kg | ☼ | 69 | 76 - 124 |
| Dibromochloromethane | ND | F1 vs | 52.5 | 37.5 | F1 vs | ug/Kg | ☼ | 71 | 76 - 125 |
| Chloroethane | ND | vs | 52.5 | 47.8 | vs | ug/Kg | ☼ | 91 | 69 - 135 |
| Chloroform | 0.63 | J B F1 vs | 52.5 | 42.7 | vs | ug/Kg | ☼ | 80 | 80 - 120 |
| Chloromethane | ND | vs | 52.5 | 51.5 | vs | ug/Kg | ☼ | 98 | 63 - 127 |
| cis-1,2-Dichloroethene | ND | F1 vs | 52.5 | 37.1 | F1 vs | ug/Kg | ☼ | 71 | 80 - 120 |
| cis-1,3-Dichloropropene | ND | F1 vs | 52.5 | 31.9 | F1 vs | ug/Kg | ☼ | 61 | 80 - 120 |
| Cyclohexane | ND | F1 vs | 52.5 | 31.8 | F1 vs | ug/Kg | ☼ | 61 | 65 - 120 |
| Dichlorodifluoromethane | ND | vs | 52.5 | 37.9 | vs | ug/Kg | ☼ | 72 | 57 - 142 |
| Ethylbenzene | ND | F1 vs | 52.5 | 36.2 | F1 vs | ug/Kg | ☼ | 69 | 80 - 120 |
| 1,2-Dibromoethane | ND | F1 vs | 52.5 | 30.9 | F1 vs | ug/Kg | ☼ | 59 | 78 - 120 |
| Isopropylbenzene | ND | F1 vs | 52.5 | 31.4 | F1 vs | ug/Kg | ☼ | 60 | 72 - 120 |
| Methyl acetate | ND | vs | 105 | 68.9 | vs | ug/Kg | ☼ | 66 | 55 - 136 |
| Methyl tert-butyl ether | ND | vs | 52.5 | 39.4 | vs | ug/Kg | ☼ | 75 | 63 - 125 |
| Methylcyclohexane | ND | F1 vs | 52.5 | 20.3 | F1 vs | ug/Kg | ☼ | 39 | 60 - 140 |
| Methylene Chloride | 5.2 | vs | 52.5 | 48.8 | vs | ug/Kg | ☼ | 83 | 61 - 127 |
| Styrene | ND | F1 vs | 52.5 | 33.0 | F1 vs | ug/Kg | ☼ | 63 | 80 - 120 |
| Tetrachloroethene | ND | F1 vs | 52.5 | 30.2 | F1 vs | ug/Kg | ☼ | 57 | 74 - 122 |
| Toluene | ND | F1 vs | 52.5 | 41.1 | vs | ug/Kg | ☼ | 78 | 74 - 128 |
| trans-1,2-Dichloroethene | ND | F1 vs | 52.5 | 33.6 | F1 vs | ug/Kg | ☼ | 64 | 78 - 126 |
| trans-1,3-Dichloropropene | ND | F1 vs | 52.5 | 28.3 | F1 vs | ug/Kg | ☼ | 54 | 73 - 123 |
| Trichloroethene | ND | F1 vs | 52.5 | 34.5 | F1 vs | ug/Kg | ☼ | 66 | 77 - 129 |
| Trichlorofluoromethane | ND | vs | 52.5 | 39.6 | vs | ug/Kg | ☼ | 75 | 65 - 146 |
| Vinyl chloride | ND | vs | 52.5 | 42.1 | vs | ug/Kg | ☼ | 80 | 61 - 133 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *94* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *81* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *90* | | *60 - 140* |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-20 MSD**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: PILE4-03-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F1 vs | 51.8 | 37.1 | F1 vs | ug/Kg | ☼ | 72 | 77 - 121 | 7 | 30 |
| 1,1,2,2-Tetrachloroethane | ND | F1 vs | 51.8 | 34.5 | F1 vs | ug/Kg | ☼ | 67 | 80 - 120 | 7 | 30 |
| 1,1,2-Trichloroethane | ND | F1 vs | 51.8 | 39.0 | F1 vs | ug/Kg | ☼ | 75 | 78 - 122 | 3 | 30 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | vs | 51.8 | 31.4 | vs | ug/Kg | ☼ | 61 | 60 - 140 | 12 | 30 |
| 1,1-Dichloroethane | ND | vs | 51.8 | 45.0 | vs | ug/Kg | ☼ | 87 | 73 - 126 | 7 | 30 |
| 1,1-Dichloroethene | ND | vs | 51.8 | 34.0 | vs | ug/Kg | ☼ | 66 | 59 - 125 | 9 | 30 |
| 1,2,4-Trichlorobenzene | ND | F1 vs | 51.8 | 10.5 | F1 vs | ug/Kg | ☼ | 20 | 64 - 120 | 18 | 30 |
| 1,2-Dibromo-3-Chloropropane | ND | F1 vs | 51.8 | 24.6 | F1 vs | ug/Kg | ☼ | 47 | 63 - 124 | 4 | 30 |
| 1,2-Dichlorobenzene | ND | F1 vs | 51.8 | 24.6 | F1 vs | ug/Kg | ☼ | 47 | 75 - 120 | 16 | 30 |
| 1,2-Dichloroethane | ND | F1 vs | 51.8 | 37.1 | F1 vs | ug/Kg | ☼ | 72 | 77 - 122 | 5 | 30 |
| 1,2-Dichloropropane | ND | vs | 51.8 | 44.8 | vs | ug/Kg | ☼ | 87 | 75 - 124 | 5 | 30 |
| 1,3-Dichlorobenzene | ND | F1 vs | 51.8 | 22.9 | F1 vs | ug/Kg | ☼ | 44 | 74 - 120 | 17 | 30 |
| 1,4-Dichlorobenzene | ND | F1 vs | 51.8 | 22.1 | F1 vs | ug/Kg | ☼ | 43 | 73 - 120 | 15 | 30 |
| 2-Butanone (MEK) | ND | F1 vs | 259 | 123 | F1 vs | ug/Kg | ☼ | 48 | 70 - 134 | 6 | 30 |
| 2-Hexanone | ND | F1 vs | 259 | 138 | F1 vs | ug/Kg | ☼ | 53 | 59 - 130 | 4 | 30 |
| 4-Methyl-2-pentanone (MIBK) | ND | vs | 259 | 176 | vs | ug/Kg | ☼ | 68 | 65 - 133 | 4 | 30 |
| Acetone | ND | F1 vs | 259 | 114 | F1 vs | ug/Kg | ☼ | 44 | 61 - 137 | 12 | 30 |
| Benzene | ND | F1 vs | 51.8 | 39.9 | F1 vs | ug/Kg | ☼ | 77 | 79 - 127 | 7 | 30 |
| Bromodichloromethane | ND | F1 vs | 51.8 | 37.8 | F1 vs | ug/Kg | ☼ | 73 | 80 - 122 | 5 | 30 |
| Bromoform | ND | F1 vs | 51.8 | 27.3 | F1 vs | ug/Kg | ☼ | 53 | 68 - 126 | 6 | 30 |
| Bromomethane | ND | vs | 51.8 | 43.5 | vs | ug/Kg | ☼ | 84 | 37 - 149 | 9 | 30 |
| Carbon disulfide | ND | F1 vs | 51.8 | 26.1 | F1 vs | ug/Kg | ☼ | 50 | 64 - 131 | 13 | 30 |
| Carbon tetrachloride | ND | F1 vs | 51.8 | 31.0 | F1 vs | ug/Kg | ☼ | 60 | 75 - 135 | 9 | 30 |
| Chlorobenzene | ND | F1 vs | 51.8 | 32.1 | F1 vs | ug/Kg | ☼ | 62 | 76 - 124 | 13 | 30 |
| Dibromochloromethane | ND | F1 vs | 51.8 | 35.3 | F1 vs | ug/Kg | ☼ | 68 | 76 - 125 | 6 | 30 |
| Chloroethane | ND | vs | 51.8 | 44.8 | vs | ug/Kg | ☼ | 86 | 69 - 135 | 7 | 30 |
| Chloroform | 0.63 | J B F1 vs | 51.8 | 40.8 | F1 vs | ug/Kg | ☼ | 78 | 80 - 120 | 5 | 30 |
| Chloromethane | ND | vs | 51.8 | 49.2 | vs | ug/Kg | ☼ | 95 | 63 - 127 | 5 | 30 |
| cis-1,2-Dichloroethene | ND | F1 vs | 51.8 | 33.8 | F1 vs | ug/Kg | ☼ | 65 | 80 - 120 | 9 | 30 |
| cis-1,3-Dichloropropene | ND | F1 vs | 51.8 | 28.6 | F1 vs | ug/Kg | ☼ | 55 | 80 - 120 | 11 | 30 |
| Cyclohexane | ND | F1 vs | 51.8 | 28.3 | F1 vs | ug/Kg | ☼ | 55 | 65 - 120 | 12 | 30 |
| Dichlorodifluoromethane | ND | vs | 51.8 | 35.2 | vs | ug/Kg | ☼ | 68 | 57 - 142 | 7 | 30 |
| Ethylbenzene | ND | F1 vs | 51.8 | 32.0 | F1 vs | ug/Kg | ☼ | 62 | 80 - 120 | 12 | 30 |
| 1,2-Dibromoethane | ND | F1 vs | 51.8 | 29.3 | F1 vs | ug/Kg | ☼ | 57 | 78 - 120 | 5 | 30 |
| Isopropylbenzene | ND | F1 vs | 51.8 | 27.3 | F1 vs | ug/Kg | ☼ | 53 | 72 - 120 | 14 | 30 |
| Methyl acetate | ND | vs | 104 | 61.3 | vs | ug/Kg | ☼ | 59 | 55 - 136 | 12 | 30 |
| Methyl tert-butyl ether | ND | vs | 51.8 | 37.6 | vs | ug/Kg | ☼ | 73 | 63 - 125 | 5 | 30 |
| Methylcyclohexane | ND | F1 vs | 51.8 | 17.1 | F1 vs | ug/Kg | ☼ | 33 | 60 - 140 | 17 | 30 |
| Methylene Chloride | 5.2 | vs | 51.8 | 45.0 | vs | ug/Kg | ☼ | 77 | 61 - 127 | 8 | 30 |
| Styrene | ND | F1 vs | 51.8 | 29.3 | F1 vs | ug/Kg | ☼ | 57 | 80 - 120 | 12 | 30 |
| Tetrachloroethene | ND | F1 vs | 51.8 | 26.7 | F1 vs | ug/Kg | ☼ | 52 | 74 - 122 | 12 | 30 |
| Toluene | ND | F1 vs | 51.8 | 37.5 | F1 vs | ug/Kg | ☼ | 72 | 74 - 128 | 9 | 30 |
| trans-1,2-Dichloroethene | ND | F1 vs | 51.8 | 30.6 | F1 vs | ug/Kg | ☼ | 59 | 78 - 126 | 9 | 30 |
| trans-1,3-Dichloropropene | ND | F1 vs | 51.8 | 26.4 | F1 vs | ug/Kg | ☼ | 51 | 73 - 123 | 7 | 30 |
| Trichloroethene | ND | F1 vs | 51.8 | 31.3 | F1 vs | ug/Kg | ☼ | 60 | 77 - 129 | 10 | 30 |
| Trichlorofluoromethane | ND | vs | 51.8 | 37.0 | vs | ug/Kg | ☼ | 71 | 65 - 146 | 7 | 30 |
| Vinyl chloride | ND | vs | 51.8 | 38.0 | vs | ug/Kg | ☼ | 73 | 61 - 133 | 10 | 30 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-20 MSD**
**Matrix: Solid**
**Analysis Batch: 730961**

**Client Sample ID: PILE4-03-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730832**

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *93* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *82* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *83* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *89* | | *60 - 140* |

**Lab Sample ID: MB 480-730959/2-A**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | | 5.0 | 0.36 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 5.0 | 0.81 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,1,2-Trichloroethane | ND | | 5.0 | 0.65 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 5.0 | 1.1 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,1-Dichloroethane | ND | | 5.0 | 0.61 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,1-Dichloroethene | ND | | 5.0 | 0.61 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 5.0 | 0.30 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,2-Dichlorobenzene | ND | | 5.0 | 0.39 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,2-Dichloroethane | ND | | 5.0 | 0.25 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,2-Dichloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,3-Dichlorobenzene | ND | | 5.0 | 0.26 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,4-Dichlorobenzene | ND | | 5.0 | 0.70 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 2-Butanone (MEK) | ND | | 25 | 1.8 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 2-Hexanone | ND | | 25 | 2.5 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 25 | 1.6 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Acetone | ND | | 25 | 4.2 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Benzene | ND | | 5.0 | 0.25 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Bromodichloromethane | ND | | 5.0 | 0.67 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Bromoform | ND | | 5.0 | 2.5 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Bromomethane | ND | | 5.0 | 0.45 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Carbon disulfide | ND | | 5.0 | 2.5 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Carbon tetrachloride | ND | | 5.0 | 0.48 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Chlorobenzene | ND | | 5.0 | 0.66 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Dibromochloromethane | ND | | 5.0 | 0.64 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Chloroethane | ND | | 5.0 | 1.1 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Chloroform | 0.413 | J | 5.0 | 0.31 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Chloromethane | ND | | 5.0 | 0.30 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| cis-1,2-Dichloroethene | ND | | 5.0 | 0.64 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| cis-1,3-Dichloropropene | ND | | 5.0 | 0.72 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Cyclohexane | ND | | 5.0 | 0.70 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Dichlorodifluoromethane | ND | | 5.0 | 0.41 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Ethylbenzene | ND | | 5.0 | 0.35 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| 1,2-Dibromoethane | ND | | 5.0 | 0.64 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Isopropylbenzene | ND | | 5.0 | 0.75 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Methyl acetate | ND | | 25 | 3.0 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Methyl tert-butyl ether | ND | | 5.0 | 0.49 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Methylcyclohexane | ND | | 5.0 | 0.76 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 480-730959/2-A**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | ND | | 5.0 | 2.3 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Styrene | ND | | 5.0 | 0.25 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Tetrachloroethene | ND | | 5.0 | 0.67 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Toluene | ND | | 5.0 | 0.38 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| trans-1,2-Dichloroethene | ND | | 5.0 | 0.52 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| trans-1,3-Dichloropropene | ND | | 5.0 | 2.2 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Trichloroethene | ND | | 5.0 | 1.1 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Trichlorofluoromethane | ND | | 5.0 | 0.47 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Vinyl chloride | ND | | 5.0 | 0.61 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |
| Xylenes, Total | ND | | 10 | 0.84 | ug/Kg | | 11/02/24 18:19 | 11/02/24 21:34 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *95* | | *71 - 125* | *11/02/24 18:19* | *11/02/24 21:34* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *64 - 126* | *11/02/24 18:19* | *11/02/24 21:34* | *1* |
| *4-Bromofluorobenzene (Surr)* | *99* | | *72 - 126* | *11/02/24 18:19* | *11/02/24 21:34* | *1* |
| *Dibromofluoromethane (Surr)* | *93* | | *60 - 140* | *11/02/24 18:19* | *11/02/24 21:34* | *1* |

**Lab Sample ID: LCS 480-730959/1-A**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 50.0 | 45.5 | | ug/Kg | | 91 | 77 - 121 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 51.0 | | ug/Kg | | 102 | 80 - 120 |
| 1,1,2-Trichloroethane | 50.0 | 49.8 | | ug/Kg | | 100 | 78 - 122 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 50.0 | 47.9 | | ug/Kg | | 96 | 60 - 140 |
| 1,1-Dichloroethane | 50.0 | 47.8 | | ug/Kg | | 96 | 73 - 126 |
| 1,1-Dichloroethene | 50.0 | 48.2 | | ug/Kg | | 96 | 59 - 125 |
| 1,2,4-Trichlorobenzene | 50.0 | 50.7 | | ug/Kg | | 101 | 64 - 120 |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 45.3 | | ug/Kg | | 91 | 63 - 124 |
| 1,2-Dichlorobenzene | 50.0 | 49.1 | | ug/Kg | | 98 | 75 - 120 |
| 1,2-Dichloroethane | 50.0 | 47.2 | | ug/Kg | | 94 | 77 - 122 |
| 1,2-Dichloropropane | 50.0 | 48.5 | | ug/Kg | | 97 | 75 - 124 |
| 1,3-Dichlorobenzene | 50.0 | 47.8 | | ug/Kg | | 96 | 74 - 120 |
| 1,4-Dichlorobenzene | 50.0 | 48.3 | | ug/Kg | | 97 | 73 - 120 |
| 2-Butanone (MEK) | 250 | 243 | | ug/Kg | | 97 | 70 - 134 |
| 2-Hexanone | 250 | 249 | | ug/Kg | | 100 | 59 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 250 | 254 | | ug/Kg | | 102 | 65 - 133 |
| Acetone | 250 | 237 | | ug/Kg | | 95 | 61 - 137 |
| Benzene | 50.0 | 49.3 | | ug/Kg | | 99 | 79 - 127 |
| Bromodichloromethane | 50.0 | 47.1 | | ug/Kg | | 94 | 80 - 122 |
| Bromoform | 50.0 | 46.0 | | ug/Kg | | 92 | 68 - 126 |
| Bromomethane | 50.0 | 48.1 | | ug/Kg | | 96 | 37 - 149 |
| Carbon disulfide | 50.0 | 47.7 | | ug/Kg | | 95 | 64 - 131 |
| Carbon tetrachloride | 50.0 | 43.5 | | ug/Kg | | 87 | 75 - 135 |
| Chlorobenzene | 50.0 | 49.2 | | ug/Kg | | 98 | 76 - 124 |
| Dibromochloromethane | 50.0 | 48.0 | | ug/Kg | | 96 | 76 - 125 |
| Chloroethane | 50.0 | 48.2 | | ug/Kg | | 96 | 69 - 135 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 480-730959/1-A**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Chloroform | 50.0 | 47.0 | | ug/Kg | | 94 | 80 - 120 |
| Chloromethane | 50.0 | 48.1 | | ug/Kg | | 96 | 63 - 127 |
| cis-1,2-Dichloroethene | 50.0 | 50.3 | | ug/Kg | | 101 | 81 - 120 |
| cis-1,3-Dichloropropene | 50.0 | 47.0 | | ug/Kg | | 94 | 80 - 120 |
| Cyclohexane | 50.0 | 49.0 | | ug/Kg | | 98 | 65 - 120 |
| Dichlorodifluoromethane | 50.0 | 41.2 | | ug/Kg | | 82 | 57 - 142 |
| Ethylbenzene | 50.0 | 48.7 | | ug/Kg | | 97 | 80 - 120 |
| 1,2-Dibromoethane | 50.0 | 51.1 | | ug/Kg | | 102 | 78 - 120 |
| Isopropylbenzene | 50.0 | 49.7 | | ug/Kg | | 99 | 72 - 120 |
| Methyl acetate | 100 | 104 | | ug/Kg | | 104 | 55 - 136 |
| Methyl tert-butyl ether | 50.0 | 48.5 | | ug/Kg | | 97 | 63 - 125 |
| Methylcyclohexane | 50.0 | 49.8 | | ug/Kg | | 100 | 60 - 140 |
| Methylene Chloride | 50.0 | 53.3 | | ug/Kg | | 107 | 61 - 127 |
| Styrene | 50.0 | 48.4 | | ug/Kg | | 97 | 80 - 120 |
| Tetrachloroethene | 50.0 | 50.0 | | ug/Kg | | 100 | 74 - 122 |
| Toluene | 50.0 | 48.5 | | ug/Kg | | 97 | 74 - 128 |
| trans-1,2-Dichloroethene | 50.0 | 50.7 | | ug/Kg | | 101 | 78 - 126 |
| trans-1,3-Dichloropropene | 50.0 | 48.0 | | ug/Kg | | 96 | 73 - 123 |
| Trichloroethene | 50.0 | 46.5 | | ug/Kg | | 93 | 77 - 129 |
| Trichlorofluoromethane | 50.0 | 47.4 | | ug/Kg | | 95 | 65 - 146 |
| Vinyl chloride | 50.0 | 46.1 | | ug/Kg | | 92 | 61 - 133 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *99* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *97* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *96* | | *60 - 140* |

**Lab Sample ID: 480-224895-31 MS**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: PILE6-07-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F2 vs | 52.7 | 47.3 | vs | ug/Kg | ☼ | 90 | 77 - 121 |
| 1,1,2,2-Tetrachloroethane | ND | F1 F2 vs | 52.7 | 36.6 | F1 vs | ug/Kg | ☼ | 69 | 80 - 120 |
| 1,1,2-Trichloroethane | ND | F2 vs | 52.7 | 46.5 | vs | ug/Kg | ☼ | 88 | 78 - 122 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | F2 vs | 52.7 | 47.2 | vs | ug/Kg | ☼ | 90 | 60 - 140 |
| 1,1-Dichloroethane | ND | F2 vs | 52.7 | 50.8 | vs | ug/Kg | ☼ | 97 | 73 - 126 |
| 1,1-Dichloroethene | ND | F2 vs | 52.7 | 46.7 | vs | ug/Kg | ☼ | 89 | 59 - 125 |
| 1,2,4-Trichlorobenzene | ND | F1 F2 vs | 52.7 | 28.1 | F1 vs | ug/Kg | ☼ | 53 | 64 - 120 |
| 1,2-Dibromo-3-Chloropropane | ND | F2 vs | 52.7 | 37.9 | vs | ug/Kg | ☼ | 72 | 63 - 124 |
| 1,2-Dichlorobenzene | ND | F2 vs | 52.7 | 43.7 | vs | ug/Kg | ☼ | 83 | 75 - 120 |
| 1,2-Dichloroethane | ND | F2 vs | 52.7 | 44.6 | vs | ug/Kg | ☼ | 85 | 77 - 122 |
| 1,2-Dichloropropane | ND | F2 vs | 52.7 | 50.3 | vs | ug/Kg | ☼ | 95 | 75 - 124 |
| 1,3-Dichlorobenzene | ND | F2 vs | 52.7 | 42.2 | vs | ug/Kg | ☼ | 80 | 74 - 120 |
| 1,4-Dichlorobenzene | ND | F2 vs | 52.7 | 40.4 | vs | ug/Kg | ☼ | 77 | 73 - 120 |
| 2-Butanone (MEK) | ND | F1 F2 vs | 263 | 171 | F1 vs | ug/Kg | ☼ | 65 | 70 - 134 |
| 2-Hexanone | ND | F2 vs | 263 | 182 | vs | ug/Kg | ☼ | 69 | 59 - 130 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-31 MS**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: PILE6-07-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-pentanone (MIBK) | ND | F2 vs | 263 | 208 | vs | ug/Kg | ☼ | 79 | 65 - 133 |
| Acetone | 4.4 | J F2 vs | 263 | 177 | vs | ug/Kg | ☼ | 67 | 61 - 137 |
| Benzene | ND | F2 vs | 52.7 | 50.9 | vs | ug/Kg | ☼ | 97 | 79 - 127 |
| Bromodichloromethane | ND | F2 vs | 52.7 | 47.8 | vs | ug/Kg | ☼ | 91 | 80 - 122 |
| Bromoform | ND | F2 vs | 52.7 | 38.5 | vs | ug/Kg | ☼ | 73 | 68 - 126 |
| Bromomethane | ND | F2 vs | 52.7 | 47.2 | vs | ug/Kg | ☼ | 90 | 37 - 149 |
| Carbon disulfide | ND | F2 vs | 52.7 | 40.0 | vs | ug/Kg | ☼ | 76 | 64 - 131 |
| Carbon tetrachloride | ND | F2 vs | 52.7 | 44.3 | vs | ug/Kg | ☼ | 84 | 75 - 135 |
| Chlorobenzene | ND | F2 vs | 52.7 | 47.8 | vs | ug/Kg | ☼ | 91 | 76 - 124 |
| Dibromochloromethane | ND | F2 vs | 52.7 | 46.3 | vs | ug/Kg | ☼ | 88 | 76 - 125 |
| Chloroethane | ND | F2 vs | 52.7 | 48.1 | vs | ug/Kg | ☼ | 91 | 69 - 135 |
| Chloroform | 0.56 | J B F2 vs | 52.7 | 49.1 | vs | ug/Kg | ☼ | 92 | 80 - 120 |
| Chloromethane | ND | F2 vs | 52.7 | 52.5 | vs | ug/Kg | ☼ | 100 | 63 - 127 |
| cis-1,2-Dichloroethene | ND | F2 vs | 52.7 | 45.8 | vs | ug/Kg | ☼ | 87 | 80 - 120 |
| cis-1,3-Dichloropropene | ND | F1 F2 vs | 52.7 | 41.6 | F1 vs | ug/Kg | ☼ | 79 | 80 - 120 |
| Cyclohexane | ND | F2 vs | 52.7 | 44.8 | vs | ug/Kg | ☼ | 85 | 65 - 120 |
| Dichlorodifluoromethane | ND | F2 vs | 52.7 | 44.3 | vs | ug/Kg | ☼ | 84 | 57 - 142 |
| Ethylbenzene | ND | F2 vs | 52.7 | 48.5 | vs | ug/Kg | ☼ | 92 | 80 - 120 |
| 1,2-Dibromoethane | ND | F2 vs | 52.7 | 42.5 | vs | ug/Kg | ☼ | 81 | 78 - 120 |
| Isopropylbenzene | ND | F2 vs | 52.7 | 51.6 | vs | ug/Kg | ☼ | 98 | 72 - 120 |
| Methyl acetate | ND | F2 vs | 105 | 96.8 | vs | ug/Kg | ☼ | 92 | 55 - 136 |
| Methyl tert-butyl ether | ND | F2 vs | 52.7 | 43.9 | vs | ug/Kg | ☼ | 83 | 63 - 125 |
| Methylcyclohexane | ND | F2 vs | 52.7 | 38.1 | vs | ug/Kg | ☼ | 72 | 60 - 140 |
| Methylene Chloride | 3.7 | J F2 vs | 52.7 | 54.2 | vs | ug/Kg | ☼ | 96 | 61 - 127 |
| Styrene | ND | F1 F2 vs | 52.7 | 44.9 | vs | ug/Kg | ☼ | 85 | 80 - 120 |
| Tetrachloroethene | ND | F2 vs | 52.7 | 47.4 | vs | ug/Kg | ☼ | 90 | 74 - 122 |
| Toluene | ND | F2 vs | 52.7 | 51.0 | vs | ug/Kg | ☼ | 97 | 74 - 128 |
| trans-1,2-Dichloroethene | ND | F1 F2 vs | 52.7 | 45.0 | vs | ug/Kg | ☼ | 85 | 78 - 126 |
| trans-1,3-Dichloropropene | ND | F2 vs | 52.7 | 40.0 | vs | ug/Kg | ☼ | 76 | 73 - 123 |
| Trichloroethene | ND | F2 vs | 52.7 | 54.4 | vs | ug/Kg | ☼ | 103 | 77 - 129 |
| Trichlorofluoromethane | ND | F2 vs | 52.7 | 47.8 | vs | ug/Kg | ☼ | 91 | 65 - 146 |
| Vinyl chloride | ND | F2 vs | 52.7 | 45.2 | vs | ug/Kg | ☼ | 86 | 61 - 133 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *95* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *79* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *86* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *87* | | *60 - 140* |

**Lab Sample ID: 480-224895-31 MSD**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: PILE6-07-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | F2 vs | 86.4 | 69.0 | F2 vs | ug/Kg | ☼ | 80 | 77 - 121 | 37 | 30 |
| 1,1,2,2-Tetrachloroethane | ND | F1 F2 vs | 86.4 | 64.7 | F1 F2 vs | ug/Kg | ☼ | 75 | 80 - 120 | 55 | 30 |
| 1,1,2-Trichloroethane | ND | F2 vs | 86.4 | 74.8 | F2 vs | ug/Kg | ☼ | 87 | 78 - 122 | 47 | 30 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | F2 vs | 86.4 | 66.7 | F2 vs | ug/Kg | ☼ | 77 | 60 - 140 | 34 | 30 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-31 MSD**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: PILE6-07-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | ND | F2 vs | 86.4 | 76.5 | F2 vs | ug/Kg | ☼ | 89 | 73 - 126 | 40 | 30 |
| 1,1-Dichloroethene | ND | F2 vs | 86.4 | 66.6 | F2 vs | ug/Kg | ☼ | 77 | 59 - 125 | 35 | 30 |
| 1,2,4-Trichlorobenzene | ND | F1 F2 vs | 86.4 | 41.7 | F1 F2 vs | ug/Kg | ☼ | 48 | 64 - 120 | 39 | 30 |
| 1,2-Dibromo-3-Chloropropane | ND | F2 vs | 86.4 | 61.3 | F2 vs | ug/Kg | ☼ | 71 | 63 - 124 | 47 | 30 |
| 1,2-Dichlorobenzene | ND | F2 vs | 86.4 | 67.7 | F2 vs | ug/Kg | ☼ | 78 | 75 - 120 | 43 | 30 |
| 1,2-Dichloroethane | ND | F2 vs | 86.4 | 70.1 | F2 vs | ug/Kg | ☼ | 81 | 77 - 122 | 45 | 30 |
| 1,2-Dichloropropane | ND | F2 vs | 86.4 | 79.9 | F2 vs | ug/Kg | ☼ | 92 | 75 - 124 | 45 | 30 |
| 1,3-Dichlorobenzene | ND | F2 vs | 86.4 | 65.3 | F2 vs | ug/Kg | ☼ | 76 | 74 - 120 | 43 | 30 |
| 1,4-Dichlorobenzene | ND | F2 vs | 86.4 | 62.9 | F2 vs | ug/Kg | ☼ | 73 | 73 - 120 | 44 | 30 |
| 2-Butanone (MEK) | ND | F1 F2 vs | 432 | 262 | F1 F2 vs | ug/Kg | ☼ | 61 | 70 - 134 | 42 | 30 |
| 2-Hexanone | ND | F2 vs | 432 | 281 | F2 vs | ug/Kg | ☼ | 65 | 59 - 130 | 43 | 30 |
| 4-Methyl-2-pentanone (MIBK) | ND | F2 vs | 432 | 318 | F2 vs | ug/Kg | ☼ | 74 | 65 - 133 | 42 | 30 |
| Acetone | 4.4 | J F2 vs | 432 | 263 | F2 vs | ug/Kg | ☼ | 61 | 61 - 137 | 39 | 30 |
| Benzene | ND | F2 vs | 86.4 | 77.0 | F2 vs | ug/Kg | ☼ | 89 | 79 - 127 | 41 | 30 |
| Bromodichloromethane | ND | F2 vs | 86.4 | 74.5 | F2 vs | ug/Kg | ☼ | 86 | 80 - 122 | 44 | 30 |
| Bromoform | ND | F2 vs | 86.4 | 60.2 | F2 vs | ug/Kg | ☼ | 70 | 68 - 126 | 44 | 30 |
| Bromomethane | ND | F2 vs | 86.4 | 71.6 | F2 vs | ug/Kg | ☼ | 83 | 37 - 149 | 41 | 30 |
| Carbon disulfide | ND | F2 vs | 86.4 | 59.6 | F2 vs | ug/Kg | ☼ | 69 | 64 - 131 | 39 | 30 |
| Carbon tetrachloride | ND | F2 vs | 86.4 | 65.0 | F2 vs | ug/Kg | ☼ | 75 | 75 - 135 | 38 | 30 |
| Chlorobenzene | ND | F2 vs | 86.4 | 72.1 | F2 vs | ug/Kg | ☼ | 84 | 76 - 124 | 41 | 30 |
| Dibromochloromethane | ND | F2 vs | 86.4 | 74.8 | F2 vs | ug/Kg | ☼ | 87 | 76 - 125 | 47 | 30 |
| Chloroethane | ND | F2 vs | 86.4 | 73.4 | F2 vs | ug/Kg | ☼ | 85 | 69 - 135 | 42 | 30 |
| Chloroform | 0.56 | J B F2 vs | 86.4 | 75.6 | F2 vs | ug/Kg | ☼ | 87 | 80 - 120 | 42 | 30 |
| Chloromethane | ND | F2 vs | 86.4 | 77.5 | F2 vs | ug/Kg | ☼ | 90 | 63 - 127 | 38 | 30 |
| cis-1,2-Dichloroethene | ND | F2 vs | 86.4 | 70.9 | F2 vs | ug/Kg | ☼ | 82 | 80 - 120 | 43 | 30 |
| cis-1,3-Dichloropropene | ND | F1 F2 vs | 86.4 | 66.9 | F1 F2 vs | ug/Kg | ☼ | 77 | 80 - 120 | 47 | 30 |
| Cyclohexane | ND | F2 vs | 86.4 | 63.5 | F2 vs | ug/Kg | ☼ | 73 | 65 - 120 | 35 | 30 |
| Dichlorodifluoromethane | ND | F2 vs | 86.4 | 62.8 | F2 vs | ug/Kg | ☼ | 73 | 57 - 142 | 35 | 30 |
| Ethylbenzene | ND | F2 vs | 86.4 | 71.5 | F2 vs | ug/Kg | ☼ | 83 | 80 - 120 | 38 | 30 |
| 1,2-Dibromoethane | ND | F2 vs | 86.4 | 68.8 | F2 vs | ug/Kg | ☼ | 80 | 78 - 120 | 47 | 30 |
| Isopropylbenzene | ND | F2 vs | 86.4 | 79.8 | F2 vs | ug/Kg | ☼ | 92 | 72 - 120 | 43 | 30 |
| Methyl acetate | ND | F2 vs | 173 | 161 | F2 vs | ug/Kg | ☼ | 93 | 55 - 136 | 50 | 30 |
| Methyl tert-butyl ether | ND | F2 vs | 86.4 | 67.4 | F2 vs | ug/Kg | ☼ | 78 | 63 - 125 | 42 | 30 |
| Methylcyclohexane | ND | F2 vs | 86.4 | 55.4 | F2 vs | ug/Kg | ☼ | 64 | 60 - 140 | 37 | 30 |
| Methylene Chloride | 3.7 | J F2 vs | 86.4 | 81.8 | F2 vs | ug/Kg | ☼ | 90 | 61 - 127 | 41 | 30 |
| Styrene | ND | F1 F2 vs | 86.4 | 67.2 | F1 F2 vs | ug/Kg | ☼ | 78 | 80 - 120 | 40 | 30 |
| Tetrachloroethene | ND | F2 vs | 86.4 | 68.8 | F2 vs | ug/Kg | ☼ | 80 | 74 - 122 | 37 | 30 |
| Toluene | ND | F2 vs | 86.4 | 76.0 | F2 vs | ug/Kg | ☼ | 88 | 74 - 128 | 39 | 30 |
| trans-1,2-Dichloroethene | ND | F1 F2 vs | 86.4 | 66.2 | F1 F2 vs | ug/Kg | ☼ | 77 | 78 - 126 | 38 | 30 |
| trans-1,3-Dichloropropene | ND | F2 vs | 86.4 | 64.9 | F2 vs | ug/Kg | ☼ | 75 | 73 - 123 | 47 | 30 |
| Trichloroethene | ND | F2 vs | 86.4 | 76.7 | F2 vs | ug/Kg | ☼ | 89 | 77 - 129 | 34 | 30 |
| Trichlorofluoromethane | ND | F2 vs | 86.4 | 68.4 | F2 vs | ug/Kg | ☼ | 79 | 65 - 146 | 36 | 30 |
| Vinyl chloride | ND | F2 vs | 86.4 | 67.1 | F2 vs | ug/Kg | ☼ | 78 | 61 - 133 | 39 | 30 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *94* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *81* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *88* | | *72 - 126* |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-224895-31 MSD**
**Matrix: Solid**
**Analysis Batch: 730960**

**Client Sample ID: PILE6-07-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730959**

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| *Dibromofluoromethane (Surr)* | *89* | | *60 - 140* |

**Lab Sample ID: MB 480-730999/2-A**
**Matrix: Solid**
**Analysis Batch: 731001**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730999**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND | | 5.0 | 0.36 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 5.0 | 0.81 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,1,2-Trichloroethane | ND | | 5.0 | 0.65 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | | 5.0 | 1.1 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,1-Dichloroethane | ND | | 5.0 | 0.61 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,1-Dichloroethene | ND | | 5.0 | 0.61 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 5.0 | 0.30 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,2-Dichlorobenzene | ND | | 5.0 | 0.39 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,2-Dichloroethane | ND | | 5.0 | 0.25 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,2-Dichloropropane | ND | | 5.0 | 2.5 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,3-Dichlorobenzene | ND | | 5.0 | 0.26 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,4-Dichlorobenzene | ND | | 5.0 | 0.70 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 2-Butanone (MEK) | ND | | 25 | 1.8 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 2-Hexanone | ND | | 25 | 2.5 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 25 | 1.6 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Acetone | ND | | 25 | 4.2 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Benzene | ND | | 5.0 | 0.25 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Bromodichloromethane | ND | | 5.0 | 0.67 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Bromoform | ND | | 5.0 | 2.5 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Bromomethane | ND | | 5.0 | 0.45 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Carbon disulfide | ND | | 5.0 | 2.5 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Carbon tetrachloride | ND | | 5.0 | 0.48 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Chlorobenzene | ND | | 5.0 | 0.66 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Dibromochloromethane | ND | | 5.0 | 0.64 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Chloroethane | ND | | 5.0 | 1.1 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Chloroform | 0.428 | J | 5.0 | 0.31 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Chloromethane | ND | | 5.0 | 0.30 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| cis-1,2-Dichloroethene | ND | | 5.0 | 0.64 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| cis-1,3-Dichloropropene | ND | | 5.0 | 0.72 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Cyclohexane | ND | | 5.0 | 0.70 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Dichlorodifluoromethane | ND | | 5.0 | 0.41 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Ethylbenzene | ND | | 5.0 | 0.35 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| 1,2-Dibromoethane | ND | | 5.0 | 0.64 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Isopropylbenzene | ND | | 5.0 | 0.75 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Methyl acetate | ND | | 25 | 3.0 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Methyl tert-butyl ether | ND | | 5.0 | 0.49 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Methylcyclohexane | ND | | 5.0 | 0.76 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Methylene Chloride | ND | | 5.0 | 2.3 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Styrene | ND | | 5.0 | 0.25 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Tetrachloroethene | ND | | 5.0 | 0.67 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 480-730999/2-A**
**Matrix: Solid**
**Analysis Batch: 731001**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730999**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | ND | | 5.0 | 0.38 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| trans-1,2-Dichloroethene | ND | | 5.0 | 0.52 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| trans-1,3-Dichloropropene | ND | | 5.0 | 2.2 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Trichloroethene | ND | | 5.0 | 1.1 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Trichlorofluoromethane | ND | | 5.0 | 0.47 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Vinyl chloride | ND | | 5.0 | 0.61 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |
| Xylenes, Total | ND | | 10 | 0.84 | ug/Kg | | 11/03/24 16:37 | 11/03/24 20:01 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Toluene-d8 (Surr)* | *91* | | *71 - 125* | *11/03/24 16:37* | *11/03/24 20:01* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *64 - 126* | *11/03/24 16:37* | *11/03/24 20:01* | *1* |
| *4-Bromofluorobenzene (Surr)* | *96* | | *72 - 126* | *11/03/24 16:37* | *11/03/24 20:01* | *1* |
| *Dibromofluoromethane (Surr)* | *96* | | *60 - 140* | *11/03/24 16:37* | *11/03/24 20:01* | *1* |

**Lab Sample ID: LCS 480-730999/1-A**
**Matrix: Solid**
**Analysis Batch: 731001**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730999**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 50.0 | 48.1 | | ug/Kg | | 96 | 77 - 121 |
| 1,1,2,2-Tetrachloroethane | 50.0 | 51.4 | | ug/Kg | | 103 | 80 - 120 |
| 1,1,2-Trichloroethane | 50.0 | 48.7 | | ug/Kg | | 97 | 78 - 122 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 50.0 | 49.7 | | ug/Kg | | 99 | 60 - 140 |
| 1,1-Dichloroethane | 50.0 | 49.2 | | ug/Kg | | 98 | 73 - 126 |
| 1,1-Dichloroethene | 50.0 | 48.4 | | ug/Kg | | 97 | 59 - 125 |
| 1,2,4-Trichlorobenzene | 50.0 | 52.4 | | ug/Kg | | 105 | 64 - 120 |
| 1,2-Dibromo-3-Chloropropane | 50.0 | 49.1 | | ug/Kg | | 98 | 63 - 124 |
| 1,2-Dichlorobenzene | 50.0 | 49.7 | | ug/Kg | | 99 | 75 - 120 |
| 1,2-Dichloroethane | 50.0 | 49.0 | | ug/Kg | | 98 | 77 - 122 |
| 1,2-Dichloropropane | 50.0 | 47.8 | | ug/Kg | | 96 | 75 - 124 |
| 1,3-Dichlorobenzene | 50.0 | 46.6 | | ug/Kg | | 93 | 74 - 120 |
| 1,4-Dichlorobenzene | 50.0 | 46.6 | | ug/Kg | | 93 | 73 - 120 |
| 2-Butanone (MEK) | 250 | 270 | | ug/Kg | | 108 | 70 - 134 |
| 2-Hexanone | 250 | 251 | | ug/Kg | | 100 | 59 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 250 | 267 | | ug/Kg | | 107 | 65 - 133 |
| Acetone | 250 | 241 | | ug/Kg | | 96 | 61 - 137 |
| Benzene | 50.0 | 48.8 | | ug/Kg | | 98 | 79 - 127 |
| Bromodichloromethane | 50.0 | 47.7 | | ug/Kg | | 95 | 80 - 122 |
| Bromoform | 50.0 | 46.6 | | ug/Kg | | 93 | 68 - 126 |
| Bromomethane | 50.0 | 47.6 | | ug/Kg | | 95 | 37 - 149 |
| Carbon disulfide | 50.0 | 47.3 | | ug/Kg | | 95 | 64 - 131 |
| Carbon tetrachloride | 50.0 | 44.8 | | ug/Kg | | 90 | 75 - 135 |
| Chlorobenzene | 50.0 | 49.8 | | ug/Kg | | 100 | 76 - 124 |
| Dibromochloromethane | 50.0 | 47.9 | | ug/Kg | | 96 | 76 - 125 |
| Chloroethane | 50.0 | 48.2 | | ug/Kg | | 96 | 69 - 135 |
| Chloroform | 50.0 | 47.6 | | ug/Kg | | 95 | 80 - 120 |
| Chloromethane | 50.0 | 50.9 | | ug/Kg | | 102 | 63 - 127 |
| cis-1,2-Dichloroethene | 50.0 | 50.4 | | ug/Kg | | 101 | 81 - 120 |

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 480-730999/1-A**
**Matrix: Solid**
**Analysis Batch: 731001**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730999**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 50.0 | 45.4 | | ug/Kg | | 91 | 80 - 120 |
| Cyclohexane | 50.0 | 49.9 | | ug/Kg | | 100 | 65 - 120 |
| Dichlorodifluoromethane | 50.0 | 41.8 | | ug/Kg | | 84 | 57 - 142 |
| Ethylbenzene | 50.0 | 49.6 | | ug/Kg | | 99 | 80 - 120 |
| 1,2-Dibromoethane | 50.0 | 49.8 | | ug/Kg | | 100 | 78 - 120 |
| Isopropylbenzene | 50.0 | 50.1 | | ug/Kg | | 100 | 72 - 120 |
| Methyl acetate | 100 | 104 | | ug/Kg | | 104 | 55 - 136 |
| Methyl tert-butyl ether | 50.0 | 51.8 | | ug/Kg | | 104 | 63 - 125 |
| Methylcyclohexane | 50.0 | 49.7 | | ug/Kg | | 99 | 60 - 140 |
| Methylene Chloride | 50.0 | 53.9 | | ug/Kg | | 108 | 61 - 127 |
| Styrene | 50.0 | 47.8 | | ug/Kg | | 96 | 80 - 120 |
| Tetrachloroethene | 50.0 | 47.8 | | ug/Kg | | 96 | 74 - 122 |
| Toluene | 50.0 | 48.3 | | ug/Kg | | 97 | 74 - 128 |
| trans-1,2-Dichloroethene | 50.0 | 49.9 | | ug/Kg | | 100 | 78 - 126 |
| trans-1,3-Dichloropropene | 50.0 | 46.4 | | ug/Kg | | 93 | 73 - 123 |
| Trichloroethene | 50.0 | 46.9 | | ug/Kg | | 94 | 77 - 129 |
| Trichlorofluoromethane | 50.0 | 47.4 | | ug/Kg | | 95 | 65 - 146 |
| Vinyl chloride | 50.0 | 46.0 | | ug/Kg | | 92 | 61 - 133 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Toluene-d8 (Surr)* | *93* | | *71 - 125* |
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *64 - 126* |
| *4-Bromofluorobenzene (Surr)* | *92* | | *72 - 126* |
| *Dibromofluoromethane (Surr)* | *97* | | *60 - 140* |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 480-730353/1-A**
**Matrix: Solid**
**Analysis Batch: 730417**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730353**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 170 | 25 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| bis (2-chloroisopropyl) ether | ND | | 170 | 34 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2,4,5-Trichlorophenol | ND | | 170 | 46 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2,4,6-Trichlorophenol | ND | | 170 | 34 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2,4-Dichlorophenol | ND | | 170 | 18 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2,4-Dimethylphenol | ND | | 170 | 41 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2,4-Dinitrophenol | ND | | 1700 | 780 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2,4-Dinitrotoluene | ND | | 170 | 35 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2,6-Dinitrotoluene | ND | | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2-Chloronaphthalene | ND | | 170 | 28 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2-Chlorophenol | ND | | 330 | 31 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2-Methylnaphthalene | ND | | 170 | 34 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2-Methylphenol | ND | | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2-Nitroaniline | ND | | 330 | 25 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 2-Nitrophenol | ND | | 170 | 48 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 3,3'-Dichlorobenzidine | ND | | 330 | 200 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 3-Nitroaniline | ND | | 330 | 47 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 480-730353/1-A**
**Matrix: Solid**
**Analysis Batch: 730417**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730353**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,6-Dinitro-2-methylphenol | ND | | 330 | 170 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 4-Bromophenyl phenyl ether | ND | | 170 | 24 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 4-Chloro-3-methylphenol | ND | | 170 | 42 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 4-Chloroaniline | ND | | 170 | 42 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 4-Chlorophenyl phenyl ether | ND | | 170 | 21 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 4-Methylphenol | ND | | 330 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 4-Nitroaniline | ND | | 330 | 89 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| 4-Nitrophenol | ND | | 330 | 120 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Acenaphthene | ND | | 170 | 25 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Acenaphthylene | ND | | 170 | 22 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Acetophenone | ND | | 170 | 23 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Anthracene | ND | | 170 | 42 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Atrazine | ND | | 170 | 59 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Benzaldehyde | ND | | 170 | 140 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Benzo[a]anthracene | ND | | 170 | 17 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Benzo[a]pyrene | ND | | 170 | 25 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Benzo[b]fluoranthene | ND | | 170 | 27 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Benzo[g,h,i]perylene | ND | | 170 | 18 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Benzo[k]fluoranthene | ND | | 170 | 22 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Bis(2-chloroethoxy)methane | ND | | 170 | 36 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Bis(2-chloroethyl)ether | ND | | 170 | 22 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Bis(2-ethylhexyl) phthalate | ND | | 170 | 58 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Butyl benzyl phthalate | ND | | 170 | 28 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Caprolactam | ND | | 170 | 51 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Carbazole | ND | | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Chrysene | ND | | 170 | 38 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Di-n-butyl phthalate | ND | | 170 | 29 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Di-n-octyl phthalate | ND | | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Dibenz(a,h)anthracene | ND | | 170 | 30 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Dibenzofuran | ND | | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Diethyl phthalate | ND | | 170 | 22 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Dimethyl phthalate | 47.4 | J | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Fluoranthene | ND | | 170 | 18 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Fluorene | ND | | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Hexachlorobenzene | ND | | 170 | 23 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Hexachlorobutadiene | ND | | 170 | 25 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Hexachlorocyclopentadiene | ND | | 170 | 23 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Hexachloroethane | ND | | 170 | 22 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 170 | 21 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Isophorone | ND | | 170 | 36 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| N-Nitrosodi-n-propylamine | ND | | 170 | 29 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| N-Nitrosodiphenylamine | ND | | 170 | 140 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Naphthalene | ND | | 170 | 22 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Nitrobenzene | ND | | 170 | 19 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Pentachlorophenol | ND | | 330 | 170 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Phenanthrene | ND | | 170 | 25 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Phenol | ND | | 170 | 26 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |
| Pyrene | ND | | 170 | 20 | ug/Kg | | 10/29/24 17:50 | 10/30/24 14:02 | 1 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 480-730353/1-A**
**Matrix: Solid**
**Analysis Batch: 730417**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730353**

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *90* | | *26 - 143* | *10/29/24 17:50* | *10/30/24 14:02* | *1* |
| *2-Fluorobiphenyl* | *84* | | *50 - 121* | *10/29/24 17:50* | *10/30/24 14:02* | *1* |
| *2-Fluorophenol* | *87* | | *36 - 120* | *10/29/24 17:50* | *10/30/24 14:02* | *1* |
| *Nitrobenzene-d5* | *81* | | *40 - 121* | *10/29/24 17:50* | *10/30/24 14:02* | *1* |
| *p-Terphenyl-d14* | *97* | | *46 - 143* | *10/29/24 17:50* | *10/30/24 14:02* | *1* |
| *Phenol-d5* | *88* | | *41 - 120* | *10/29/24 17:50* | *10/30/24 14:02* | *1* |

**Lab Sample ID: LCS 480-730353/2-A**
**Matrix: Solid**
**Analysis Batch: 730417**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730353**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Biphenyl | 1330 | 1300 | | ug/Kg | | 97 | 59 - 120 |
| bis (2-chloroisopropyl) ether | 1330 | 1290 | | ug/Kg | | 97 | 44 - 120 |
| 2,4,5-Trichlorophenol | 1330 | 1390 | | ug/Kg | | 104 | 59 - 126 |
| 2,4,6-Trichlorophenol | 1330 | 1350 | | ug/Kg | | 101 | 59 - 123 |
| 2,4-Dichlorophenol | 1330 | 1280 | | ug/Kg | | 96 | 61 - 120 |
| 2,4-Dimethylphenol | 1330 | 1330 | | ug/Kg | | 99 | 59 - 120 |
| 2,4-Dinitrophenol | 2670 | 2820 | | ug/Kg | | 106 | 41 - 146 |
| 2,4-Dinitrotoluene | 1330 | 1400 | | ug/Kg | | 105 | 63 - 120 |
| 2,6-Dinitrotoluene | 1330 | 1360 | | ug/Kg | | 102 | 66 - 120 |
| 2-Chloronaphthalene | 1330 | 1290 | | ug/Kg | | 96 | 57 - 120 |
| 2-Chlorophenol | 1330 | 1260 | | ug/Kg | | 94 | 53 - 120 |
| 2-Methylnaphthalene | 1330 | 1220 | | ug/Kg | | 91 | 59 - 120 |
| 2-Methylphenol | 1330 | 1270 | | ug/Kg | | 95 | 54 - 120 |
| 2-Nitroaniline | 1330 | 1550 | | ug/Kg | | 117 | 61 - 120 |
| 2-Nitrophenol | 1330 | 1220 | | ug/Kg | | 91 | 56 - 120 |
| 3,3'-Dichlorobenzidine | 1330 | 1050 | | ug/Kg | | 79 | 54 - 120 |
| 3-Nitroaniline | 1330 | 1240 | | ug/Kg | | 93 | 48 - 120 |
| 4,6-Dinitro-2-methylphenol | 2670 | 2790 | | ug/Kg | | 105 | 49 - 122 |
| 4-Bromophenyl phenyl ether | 1330 | 1380 | | ug/Kg | | 103 | 58 - 120 |
| 4-Chloro-3-methylphenol | 1330 | 1350 | | ug/Kg | | 101 | 61 - 120 |
| 4-Chloroaniline | 1330 | 1170 | | ug/Kg | | 88 | 38 - 120 |
| 4-Chlorophenyl phenyl ether | 1330 | 1350 | | ug/Kg | | 101 | 63 - 124 |
| 4-Methylphenol | 1330 | 1300 | | ug/Kg | | 98 | 55 - 120 |
| 4-Nitroaniline | 1330 | 1320 | | ug/Kg | | 99 | 56 - 120 |
| 4-Nitrophenol | 2670 | 2940 | | ug/Kg | | 110 | 43 - 147 |
| Acenaphthene | 1330 | 1290 | | ug/Kg | | 97 | 62 - 120 |
| Acenaphthylene | 1330 | 1390 | | ug/Kg | | 104 | 58 - 121 |
| Acetophenone | 1330 | 1270 | | ug/Kg | | 95 | 54 - 120 |
| Anthracene | 1330 | 1360 | | ug/Kg | | 102 | 62 - 120 |
| Atrazine | 1330 | 1490 | | ug/Kg | | 112 | 60 - 127 |
| Benzaldehyde | 1330 | 1290 | | ug/Kg | | 97 | 10 - 150 |
| Benzo[a]anthracene | 1330 | 1360 | | ug/Kg | | 102 | 65 - 120 |
| Benzo[a]pyrene | 1330 | 1400 | | ug/Kg | | 105 | 64 - 120 |
| Benzo[b]fluoranthene | 1330 | 1380 | | ug/Kg | | 104 | 64 - 120 |
| Benzo[g,h,i]perylene | 1330 | 1390 | | ug/Kg | | 104 | 45 - 145 |
| Benzo[k]fluoranthene | 1330 | 1370 | | ug/Kg | | 103 | 65 - 120 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 480-730353/2-A**
**Matrix: Solid**
**Analysis Batch: 730417**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730353**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Bis(2-chloroethoxy)methane | 1330 | 1290 | | ug/Kg | | 97 | 55 - 120 |
| Bis(2-chloroethyl)ether | 1330 | 1250 | | ug/Kg | | 94 | 45 - 120 |
| Bis(2-ethylhexyl) phthalate | 1330 | 1490 | | ug/Kg | | 112 | 61 - 133 |
| Butyl benzyl phthalate | 1330 | 1480 | | ug/Kg | | 111 | 61 - 129 |
| Caprolactam | 1330 | 1250 | | ug/Kg | | 94 | 47 - 120 |
| Carbazole | 1330 | 1400 | | ug/Kg | | 105 | 65 - 120 |
| Chrysene | 1330 | 1340 | | ug/Kg | | 101 | 64 - 120 |
| Di-n-butyl phthalate | 1330 | 1480 | | ug/Kg | | 111 | 58 - 130 |
| Di-n-octyl phthalate | 1330 | 1610 | | ug/Kg | | 121 | 57 - 133 |
| Dibenz(a,h)anthracene | 1330 | 1420 | | ug/Kg | | 106 | 54 - 132 |
| Dibenzofuran | 1330 | 1290 | | ug/Kg | | 97 | 63 - 120 |
| Diethyl phthalate | 1330 | 1470 | | ug/Kg | | 110 | 66 - 120 |
| Dimethyl phthalate | 1330 | 1450 | | ug/Kg | | 109 | 65 - 124 |
| Fluoranthene | 1330 | 1440 | | ug/Kg | | 108 | 62 - 120 |
| Fluorene | 1330 | 1320 | | ug/Kg | | 99 | 63 - 120 |
| Hexachlorobenzene | 1330 | 1360 | | ug/Kg | | 102 | 60 - 120 |
| Hexachlorobutadiene | 1330 | 1130 | | ug/Kg | | 85 | 45 - 120 |
| Hexachlorocyclopentadiene | 1330 | 1200 | | ug/Kg | | 90 | 47 - 120 |
| Hexachloroethane | 1330 | 1060 | | ug/Kg | | 80 | 41 - 120 |
| Indeno[1,2,3-cd]pyrene | 1330 | 1410 | | ug/Kg | | 106 | 56 - 134 |
| Isophorone | 1330 | 1340 | | ug/Kg | | 100 | 56 - 120 |
| N-Nitrosodi-n-propylamine | 1330 | 1360 | | ug/Kg | | 102 | 52 - 120 |
| N-Nitrosodiphenylamine | 1330 | 1330 | | ug/Kg | | 100 | 51 - 128 |
| Naphthalene | 1330 | 1160 | | ug/Kg | | 87 | 55 - 120 |
| Nitrobenzene | 1330 | 1260 | | ug/Kg | | 95 | 54 - 120 |
| Pentachlorophenol | 2670 | 2930 | | ug/Kg | | 110 | 10 - 120 |
| Phenanthrene | 1330 | 1340 | | ug/Kg | | 100 | 60 - 120 |
| Phenol | 1330 | 1270 | | ug/Kg | | 95 | 53 - 120 |
| Pyrene | 1330 | 1360 | | ug/Kg | | 102 | 61 - 133 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2,4,6-Tribromophenol* | *104* | | *26 - 143* |
| *2-Fluorobiphenyl* | *94* | | *50 - 121* |
| *2-Fluorophenol* | *95* | | *36 - 120* |
| *Nitrobenzene-d5* | *91* | | *40 - 121* |
| *p-Terphenyl-d14* | *100* | | *46 - 143* |
| *Phenol-d5* | *100* | | *41 - 120* |

**Lab Sample ID: MB 480-730376/1-A**
**Matrix: Solid**
**Analysis Batch: 730587**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730376**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Biphenyl | ND | | 170 | 25 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| bis (2-chloroisopropyl) ether | ND | | 170 | 34 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2,4,5-Trichlorophenol | ND | | 170 | 46 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2,4,6-Trichlorophenol | ND | | 170 | 34 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2,4-Dichlorophenol | ND | | 170 | 18 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 480-730376/1-A**
**Matrix: Solid**
**Analysis Batch: 730587**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730376**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | ND | | 170 | 41 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2,4-Dinitrophenol | ND | | 1700 | 780 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2,4-Dinitrotoluene | ND | | 170 | 35 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2,6-Dinitrotoluene | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2-Chloronaphthalene | ND | | 170 | 28 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2-Chlorophenol | ND | | 330 | 31 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2-Methylnaphthalene | ND | | 170 | 34 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2-Methylphenol | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2-Nitroaniline | ND | | 330 | 25 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 2-Nitrophenol | ND | | 170 | 48 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 3,3'-Dichlorobenzidine | ND | | 330 | 200 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 3-Nitroaniline | ND | | 330 | 47 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4,6-Dinitro-2-methylphenol | ND | | 330 | 170 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4-Bromophenyl phenyl ether | ND | | 170 | 24 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4-Chloro-3-methylphenol | ND | | 170 | 42 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4-Chloroaniline | ND | | 170 | 42 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4-Chlorophenyl phenyl ether | ND | | 170 | 21 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4-Methylphenol | ND | | 330 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4-Nitroaniline | ND | | 330 | 89 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| 4-Nitrophenol | ND | | 330 | 120 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Acenaphthene | ND | | 170 | 25 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Acenaphthylene | ND | | 170 | 22 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Acetophenone | ND | | 170 | 23 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Anthracene | ND | | 170 | 42 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Atrazine | ND | | 170 | 59 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Benzaldehyde | ND | | 170 | 140 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Benzo[a]anthracene | ND | | 170 | 17 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Benzo[a]pyrene | ND | | 170 | 25 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Benzo[b]fluoranthene | ND | | 170 | 27 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Benzo[g,h,i]perylene | ND | | 170 | 18 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Benzo[k]fluoranthene | ND | | 170 | 22 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Bis(2-chloroethoxy)methane | ND | | 170 | 36 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Bis(2-chloroethyl)ether | ND | | 170 | 22 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Bis(2-ethylhexyl) phthalate | ND | | 170 | 58 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Butyl benzyl phthalate | ND | | 170 | 28 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Caprolactam | ND | | 170 | 51 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Carbazole | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Chrysene | ND | | 170 | 38 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Di-n-butyl phthalate | ND | | 170 | 29 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Di-n-octyl phthalate | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Dibenz(a,h)anthracene | ND | | 170 | 30 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Dibenzofuran | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Diethyl phthalate | ND | | 170 | 22 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Dimethyl phthalate | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Fluoranthene | ND | | 170 | 18 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Fluorene | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Hexachlorobenzene | ND | | 170 | 23 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Hexachlorobutadiene | ND | | 170 | 25 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Hexachlorocyclopentadiene | ND | | 170 | 23 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 480-730376/1-A**
**Matrix: Solid**
**Analysis Batch: 730587**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730376**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Hexachloroethane | ND | | 170 | 22 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 170 | 21 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Isophorone | ND | | 170 | 36 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| N-Nitrosodi-n-propylamine | ND | | 170 | 29 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| N-Nitrosodiphenylamine | ND | | 170 | 140 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Naphthalene | ND | | 170 | 22 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Nitrobenzene | ND | | 170 | 19 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Pentachlorophenol | ND | | 330 | 170 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Phenanthrene | ND | | 170 | 25 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Phenol | ND | | 170 | 26 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |
| Pyrene | ND | | 170 | 20 | ug/Kg | | 10/30/24 07:13 | 10/31/24 12:15 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *77* | | *26 - 143* | *10/30/24 07:13* | *10/31/24 12:15* | *1* |
| *2-Fluorobiphenyl* | *89* | | *50 - 121* | *10/30/24 07:13* | *10/31/24 12:15* | *1* |
| *2-Fluorophenol* | *76* | | *36 - 120* | *10/30/24 07:13* | *10/31/24 12:15* | *1* |
| *Nitrobenzene-d5* | *84* | | *40 - 121* | *10/30/24 07:13* | *10/31/24 12:15* | *1* |
| *p-Terphenyl-d14* | *101* | | *46 - 143* | *10/30/24 07:13* | *10/31/24 12:15* | *1* |
| *Phenol-d5* | *81* | | *41 - 120* | *10/30/24 07:13* | *10/31/24 12:15* | *1* |

**Lab Sample ID: LCS 480-730376/2-A**
**Matrix: Solid**
**Analysis Batch: 730587**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730376**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Biphenyl | 1330 | 1240 | | ug/Kg | | 93 | 59 - 120 |
| bis (2-chloroisopropyl) ether | 1330 | 1020 | | ug/Kg | | 77 | 44 - 120 |
| 2,4,5-Trichlorophenol | 1330 | 1330 | | ug/Kg | | 100 | 59 - 126 |
| 2,4,6-Trichlorophenol | 1330 | 1300 | | ug/Kg | | 97 | 59 - 123 |
| 2,4-Dichlorophenol | 1330 | 1230 | | ug/Kg | | 92 | 61 - 120 |
| 2,4-Dimethylphenol | 1330 | 1290 | | ug/Kg | | 96 | 59 - 120 |
| 2,4-Dinitrophenol | 2670 | 2380 | | ug/Kg | | 89 | 41 - 146 |
| 2,4-Dinitrotoluene | 1330 | 1310 | | ug/Kg | | 98 | 63 - 120 |
| 2,6-Dinitrotoluene | 1330 | 1350 | | ug/Kg | | 101 | 66 - 120 |
| 2-Chloronaphthalene | 1330 | 1230 | | ug/Kg | | 92 | 57 - 120 |
| 2-Chlorophenol | 1330 | 1080 | | ug/Kg | | 81 | 53 - 120 |
| 2-Methylnaphthalene | 1330 | 1150 | | ug/Kg | | 86 | 59 - 120 |
| 2-Methylphenol | 1330 | 1150 | | ug/Kg | | 86 | 54 - 120 |
| 2-Nitroaniline | 1330 | 1370 | | ug/Kg | | 103 | 61 - 120 |
| 2-Nitrophenol | 1330 | 1210 | | ug/Kg | | 90 | 56 - 120 |
| 3,3'-Dichlorobenzidine | 1330 | 989 | | ug/Kg | | 74 | 54 - 120 |
| 3-Nitroaniline | 1330 | 1060 | | ug/Kg | | 79 | 48 - 120 |
| 4,6-Dinitro-2-methylphenol | 2670 | 2530 | | ug/Kg | | 95 | 49 - 122 |
| 4-Bromophenyl phenyl ether | 1330 | 1280 | | ug/Kg | | 96 | 58 - 120 |
| 4-Chloro-3-methylphenol | 1330 | 1350 | | ug/Kg | | 102 | 61 - 120 |
| 4-Chloroaniline | 1330 | 1110 | | ug/Kg | | 83 | 38 - 120 |
| 4-Chlorophenyl phenyl ether | 1330 | 1210 | | ug/Kg | | 91 | 63 - 124 |
| 4-Methylphenol | 1330 | 1160 | | ug/Kg | | 87 | 55 - 120 |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 480-730376/2-A**
**Matrix: Solid**
**Analysis Batch: 730587**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730376**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 4-Nitroaniline | 1330 | 1220 | | ug/Kg | | 92 | 56 - 120 |
| 4-Nitrophenol | 2670 | 2200 | | ug/Kg | | 82 | 43 - 147 |
| Acenaphthene | 1330 | 1250 | | ug/Kg | | 94 | 62 - 120 |
| Acenaphthylene | 1330 | 1360 | | ug/Kg | | 102 | 58 - 121 |
| Acetophenone | 1330 | 1100 | | ug/Kg | | 83 | 54 - 120 |
| Anthracene | 1330 | 1340 | | ug/Kg | | 101 | 62 - 120 |
| Atrazine | 1330 | 1180 | | ug/Kg | | 89 | 60 - 127 |
| Benzaldehyde | 1330 | 1080 | | ug/Kg | | 81 | 10 - 150 |
| Benzo[a]anthracene | 1330 | 1370 | | ug/Kg | | 103 | 65 - 120 |
| Benzo[a]pyrene | 1330 | 1360 | | ug/Kg | | 102 | 64 - 120 |
| Benzo[b]fluoranthene | 1330 | 1280 | | ug/Kg | | 96 | 64 - 120 |
| Benzo[g,h,i]perylene | 1330 | 1370 | | ug/Kg | | 103 | 45 - 145 |
| Benzo[k]fluoranthene | 1330 | 1430 | | ug/Kg | | 107 | 65 - 120 |
| Bis(2-chloroethoxy)methane | 1330 | 1190 | | ug/Kg | | 89 | 55 - 120 |
| Bis(2-chloroethyl)ether | 1330 | 1120 | | ug/Kg | | 84 | 45 - 120 |
| Bis(2-ethylhexyl) phthalate | 1330 | 1760 | | ug/Kg | | 132 | 61 - 133 |
| Butyl benzyl phthalate | 1330 | 1690 | | ug/Kg | | 127 | 61 - 129 |
| Caprolactam | 1330 | 1310 | | ug/Kg | | 98 | 47 - 120 |
| Carbazole | 1330 | 1290 | | ug/Kg | | 97 | 65 - 120 |
| Chrysene | 1330 | 1330 | | ug/Kg | | 100 | 64 - 120 |
| Di-n-butyl phthalate | 1330 | 1440 | | ug/Kg | | 108 | 58 - 130 |
| Di-n-octyl phthalate | 1330 | 1800 | *+ | ug/Kg | | 135 | 57 - 133 |
| Dibenz(a,h)anthracene | 1330 | 1340 | | ug/Kg | | 100 | 54 - 132 |
| Dibenzofuran | 1330 | 1230 | | ug/Kg | | 92 | 63 - 120 |
| Diethyl phthalate | 1330 | 1310 | | ug/Kg | | 98 | 66 - 120 |
| Dimethyl phthalate | 1330 | 1280 | | ug/Kg | | 96 | 65 - 124 |
| Fluoranthene | 1330 | 1240 | | ug/Kg | | 93 | 62 - 120 |
| Fluorene | 1330 | 1250 | | ug/Kg | | 94 | 63 - 120 |
| Hexachlorobenzene | 1330 | 1130 | | ug/Kg | | 85 | 60 - 120 |
| Hexachlorobutadiene | 1330 | 983 | | ug/Kg | | 74 | 45 - 120 |
| Hexachlorocyclopentadiene | 1330 | 1080 | | ug/Kg | | 81 | 47 - 120 |
| Hexachloroethane | 1330 | 993 | | ug/Kg | | 74 | 41 - 120 |
| Indeno[1,2,3-cd]pyrene | 1330 | 1300 | | ug/Kg | | 98 | 56 - 134 |
| Isophorone | 1330 | 1280 | | ug/Kg | | 96 | 56 - 120 |
| N-Nitrosodi-n-propylamine | 1330 | 1180 | | ug/Kg | | 88 | 52 - 120 |
| N-Nitrosodiphenylamine | 1330 | 1390 | | ug/Kg | | 104 | 51 - 128 |
| Naphthalene | 1330 | 1120 | | ug/Kg | | 84 | 55 - 120 |
| Nitrobenzene | 1330 | 1190 | | ug/Kg | | 89 | 54 - 120 |
| Pentachlorophenol | 2670 | 2020 | | ug/Kg | | 76 | 10 - 120 |
| Phenanthrene | 1330 | 1310 | | ug/Kg | | 98 | 60 - 120 |
| Phenol | 1330 | 1130 | | ug/Kg | | 85 | 53 - 120 |
| Pyrene | 1330 | 1490 | | ug/Kg | | 112 | 61 - 133 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2,4,6-Tribromophenol* | *84* | | *26 - 143* |
| *2-Fluorobiphenyl* | *92* | | *50 - 121* |
| *2-Fluorophenol* | *76* | | *36 - 120* |
| *Nitrobenzene-d5* | *85* | | *40 - 121* |

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 480-730376/2-A**
**Matrix: Solid**
**Analysis Batch: 730587**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730376**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| *p-Terphenyl-d14* | *102* | | *46 - 143* |
| *Phenol-d5* | *81* | | *41 - 120* |

## Method: 8081B - Organochlorine Pesticides (GC)

**Lab Sample ID: MB 480-730372/1-A**
**Matrix: Solid**
**Analysis Batch: 730567**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730372**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | ND | | 1.7 | 0.32 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| 4,4'-DDE | ND | | 1.7 | 0.35 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| 4,4'-DDT | ND | | 1.7 | 0.39 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Aldrin | ND | | 1.7 | 0.41 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| alpha-BHC | 0.365 | J | 1.7 | 0.30 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| cis-Chlordane | ND | | 1.7 | 0.83 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| beta-BHC | ND | | 1.7 | 0.30 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| delta-BHC | 0.475 | J | 1.7 | 0.31 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Dieldrin | ND | | 1.7 | 0.40 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Endosulfan I | ND | | 1.7 | 0.32 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Endosulfan II | ND | | 1.7 | 0.30 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Endosulfan sulfate | ND | | 1.7 | 0.31 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Endrin | ND | | 1.7 | 0.33 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Endrin aldehyde | ND | | 1.7 | 0.43 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Endrin ketone | ND | | 1.7 | 0.41 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| gamma-BHC (Lindane) | 0.389 | J | 1.7 | 0.31 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| trans-Chlordane | ND | | 1.7 | 0.53 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Heptachlor | ND | | 1.7 | 0.36 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Heptachlor epoxide | ND | | 1.7 | 0.43 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Methoxychlor | ND | | 1.7 | 0.34 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |
| Toxaphene | ND | | 17 | 9.7 | ug/Kg | | 10/30/24 07:05 | 10/31/24 09:23 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl* | *87* | | *45 - 120* | *10/30/24 07:05* | *10/31/24 09:23* | *1* |
| *DCB Decachlorobiphenyl* | *73* | | *45 - 120* | *10/30/24 07:05* | *10/31/24 09:23* | *1* |
| *Tetrachloro-m-xylene* | *63* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 09:23* | *1* |
| *Tetrachloro-m-xylene* | *58* | | *30 - 124* | *10/30/24 07:05* | *10/31/24 09:23* | *1* |

**Lab Sample ID: LCS 480-730372/2-A**
**Matrix: Solid**
**Analysis Batch: 730567**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730372**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 16.7 | 13.3 | | ug/Kg | | 80 | 56 - 120 |
| 4,4'-DDE | 16.7 | 10.7 | | ug/Kg | | 64 | 44 - 120 |
| 4,4'-DDT | 16.7 | 12.7 | | ug/Kg | | 76 | 38 - 120 |
| Aldrin | 16.7 | 11.6 | | ug/Kg | | 70 | 38 - 120 |
| alpha-BHC | 16.7 | 10.5 | | ug/Kg | | 63 | 39 - 120 |

## Method: 8081B - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: LCS 480-730372/2-A**
**Matrix: Solid**
**Analysis Batch: 730567**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730372**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| cis-Chlordane | 16.7 | 10.4 | | ug/Kg | | 63 | 47 - 120 |
| beta-BHC | 16.7 | 11.9 | | ug/Kg | | 71 | 40 - 120 |
| delta-BHC | 16.7 | 12.0 | | ug/Kg | | 72 | 45 - 120 |
| Dieldrin | 16.7 | 12.6 | | ug/Kg | | 76 | 58 - 120 |
| Endosulfan I | 16.7 | 11.9 | | ug/Kg | | 71 | 49 - 120 |
| Endosulfan II | 16.7 | 14.0 | | ug/Kg | | 84 | 55 - 120 |
| Endosulfan sulfate | 16.7 | 10.4 | | ug/Kg | | 62 | 49 - 124 |
| Endrin | 16.7 | 14.0 | | ug/Kg | | 84 | 58 - 120 |
| Endrin aldehyde | 16.7 | 12.9 | | ug/Kg | | 77 | 37 - 121 |
| Endrin ketone | 16.7 | 15.4 | | ug/Kg | | 92 | 46 - 123 |
| gamma-BHC (Lindane) | 16.7 | 11.7 | | ug/Kg | | 70 | 50 - 120 |
| trans-Chlordane | 16.7 | 10.0 | | ug/Kg | | 60 | 48 - 120 |
| Heptachlor | 16.7 | 12.5 | | ug/Kg | | 75 | 50 - 120 |
| Heptachlor epoxide | 16.7 | 13.2 | | ug/Kg | | 79 | 50 - 120 |
| Methoxychlor | 16.7 | 14.5 | | ug/Kg | | 87 | 58 - 133 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *DCB Decachlorobiphenyl* | *84* | | *45 - 120* |
| *DCB Decachlorobiphenyl* | *78* | | *45 - 120* |
| *Tetrachloro-m-xylene* | *66* | | *30 - 124* |
| *Tetrachloro-m-xylene* | *59* | | *30 - 124* |

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Lab Sample ID: MB 480-730360/1-A**
**Matrix: Solid**
**Analysis Batch: 730459**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730360**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | | 0.25 | 0.049 | mg/Kg | | 10/29/24 18:14 | 10/30/24 14:27 | 1 |
| PCB-1221 | ND | | 0.25 | 0.049 | mg/Kg | | 10/29/24 18:14 | 10/30/24 14:27 | 1 |
| PCB-1232 | ND | | 0.25 | 0.049 | mg/Kg | | 10/29/24 18:14 | 10/30/24 14:27 | 1 |
| PCB-1242 | ND | | 0.25 | 0.049 | mg/Kg | | 10/29/24 18:14 | 10/30/24 14:27 | 1 |
| PCB-1248 | ND | | 0.25 | 0.049 | mg/Kg | | 10/29/24 18:14 | 10/30/24 14:27 | 1 |
| PCB-1254 | ND | | 0.25 | 0.12 | mg/Kg | | 10/29/24 18:14 | 10/30/24 14:27 | 1 |
| PCB-1260 | ND | | 0.25 | 0.12 | mg/Kg | | 10/29/24 18:14 | 10/30/24 14:27 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *137* | | *60 - 154* | *10/29/24 18:14* | *10/30/24 14:27* | *1* |
| *Tetrachloro-m-xylene* | *108* | | *60 - 154* | *10/29/24 18:14* | *10/30/24 14:27* | *1* |
| *DCB Decachlorobiphenyl* | *130* | | *65 - 174* | *10/29/24 18:14* | *10/30/24 14:27* | *1* |
| *DCB Decachlorobiphenyl* | *108* | | *65 - 174* | *10/29/24 18:14* | *10/30/24 14:27* | *1* |

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: LCS 480-730360/2-A**
**Matrix: Solid**
**Analysis Batch: 730459**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730360**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | | | 2.50 | 3.39 | | mg/Kg | | 135 | 51 - 185 | | |
| PCB-1260 | | | 2.50 | 3.45 | | mg/Kg | | 138 | 61 - 184 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Tetrachloro-m-xylene* | *151* | | *60 - 154* |
| *Tetrachloro-m-xylene* | *114* | | *60 - 154* |
| *DCB Decachlorobiphenyl* | *148* | | *65 - 174* |
| *DCB Decachlorobiphenyl* | *122* | | *65 - 174* |

## Method: 8151A - Herbicides (GC)

**Lab Sample ID: MB 480-730561/1-A**
**Matrix: Solid**
**Analysis Batch: 730835**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730561**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 17 | 5.3 | ug/Kg | | 10/30/24 17:37 | 11/01/24 13:08 | 1 |
| Silvex (2,4,5-TP) | ND | | 17 | 6.0 | ug/Kg | | 10/30/24 17:37 | 11/01/24 13:08 | 1 |
| 2,4-D | ND | | 17 | 11 | ug/Kg | | 10/30/24 17:37 | 11/01/24 13:08 | 1 |
| Dichlorprop | ND | | 17 | 8.3 | ug/Kg | | 10/30/24 17:37 | 11/01/24 13:08 | 1 |
| Pentachlorophenol | ND | | 17 | 5.4 | ug/Kg | | 10/30/24 17:37 | 11/01/24 13:08 | 1 |
| Picloram | ND | | 17 | 7.2 | ug/Kg | | 10/30/24 17:37 | 11/01/24 13:08 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *79* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 13:08* | *1* |
| *2,4-Dichlorophenylacetic acid* | *81* | | *28 - 129* | *10/30/24 17:37* | *11/01/24 13:08* | *1* |

**Lab Sample ID: LCS 480-730561/2-A**
**Matrix: Solid**
**Analysis Batch: 730835**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730561**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | | | 66.7 | 50.7 | | ug/Kg | | 76 | 41 - 120 | | |
| Silvex (2,4,5-TP) | | | 66.7 | 51.9 | | ug/Kg | | 78 | 39 - 125 | | |
| 2,4-D | | | 66.7 | 51.4 | | ug/Kg | | 77 | 40 - 120 | | |
| Dichlorprop | | | 66.7 | 54.1 | | ug/Kg | | 81 | 34 - 121 | | |
| Pentachlorophenol | | | 66.7 | 9.90 | J | ug/Kg | | 15 | 10 - 120 | | |
| Picloram | | | 66.7 | 48.4 | | ug/Kg | | 73 | 22 - 149 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *75* | | *28 - 129* |
| *2,4-Dichlorophenylacetic acid* | *77* | | *28 - 129* |

## Method: 8151A - Herbicides (GC) (Continued)

**Lab Sample ID: 480-224895-26 MS**
**Matrix: Solid**
**Analysis Batch: 730835**

**Client Sample ID: PILE6-02-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730561**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 71.6 | 51.4 | | ug/Kg | ☼ | 72 | 29 - 123 |
| Silvex (2,4,5-TP) | ND | | 71.6 | 50.6 | | ug/Kg | ☼ | 71 | 22 - 140 |
| 2,4-D | ND | | 71.6 | 52.8 | | ug/Kg | ☼ | 74 | 32 - 115 |
| Dichlorprop | ND | | 71.6 | 55.6 | | ug/Kg | ☼ | 78 | 28 - 125 |
| Pentachlorophenol | ND | | 71.6 | 39.1 | | ug/Kg | ☼ | 55 | 10 - 130 |
| Picloram | ND | | 71.6 | 34.7 | | ug/Kg | ☼ | 49 | 10 - 150 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *44* | | *28 - 129* |
| *2,4-Dichlorophenylacetic acid* | *47* | | *28 - 129* |

**Lab Sample ID: 480-224895-26 MSD**
**Matrix: Solid**
**Analysis Batch: 730835**

**Client Sample ID: PILE6-02-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730561**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND | | 71.8 | 50.3 | | ug/Kg | ☼ | 70 | 29 - 123 | 2 | 50 |
| Silvex (2,4,5-TP) | ND | | 71.8 | 50.2 | | ug/Kg | ☼ | 70 | 22 - 140 | 1 | 50 |
| 2,4-D | ND | | 71.8 | 52.1 | | ug/Kg | ☼ | 73 | 32 - 115 | 1 | 50 |
| Dichlorprop | ND | | 71.8 | 54.2 | | ug/Kg | ☼ | 75 | 28 - 125 | 3 | 50 |
| Pentachlorophenol | ND | | 71.8 | 40.5 | | ug/Kg | ☼ | 56 | 10 - 130 | 4 | 50 |
| Picloram | ND | | 71.8 | 35.9 | | ug/Kg | ☼ | 50 | 10 - 150 | 3 | 50 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *2,4-Dichlorophenylacetic acid* | *53* | | *28 - 129* |
| *2,4-Dichlorophenylacetic acid* | *55* | | *28 - 129* |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

**Lab Sample ID: MB 240-633477/1-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoropentanoic acid (PFPeA) | ND | | 0.40 | 0.10 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorohexanoic acid (PFHxA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoroheptanoic acid (PFHpA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorooctanoic acid (PFOA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorononanoic acid (PFNA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorodecanoic acid (PFDA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoroundecanoic acid (PFUnA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorododecanoic acid (PFDoA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

**Lab Sample ID: MB 240-633477/1-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorohexanesulfonic acid (PFHxS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorononanesulfonic acid (PFNS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | 2.0 | 0.50 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | 2.0 | 0.50 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | 0.40 | 0.10 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | 0.40 | 0.10 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | 0.80 | 0.20 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | 0.40 | 0.10 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | 1.0 | 0.25 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | 5.0 | 1.3 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | 5.0 | 1.3 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | 0.20 | 0.050 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | 0.40 | 0.10 | ug/Kg | | 11/01/24 08:56 | 11/02/24 23:51 | 1 |

| *Isotope Dilution* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *96.2* | | *20 - 150* | *11/01/24 08:56* | *11/02/24 23:51* | *1* |
| *13C5 PFPeA* | *82.6* | | *20 - 150* | *11/01/24 08:56* | *11/02/24 23:51* | *1* |
| *13C5 PFHxA* | *82.8* | | *20 - 150* | *11/01/24 08:56* | *11/02/24 23:51* | *1* |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

**Lab Sample ID: MB 240-633477/1-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Isotope Dilution | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 13C4 PFHpA | 87.7 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C8 PFOA | 90.0 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C9 PFNA | 89.0 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C6 PFDA | 89.5 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C7 PFUnA | 83.2 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C2 PFTeDA | 71.6 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C3 PFBS | 92.0 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C3 PFHxS | 89.6 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C8 PFOS | 84.4 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C8 PFOSA | 71.8 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| d3-NMeFOSAA | 80.3 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| d5-NEtFOSAA | 96.0 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| M2-4:2 FTS | 98.0 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| M2-6:2 FTS | 94.9 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| M2-8:2 FTS | 92.2 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C3 HFPO-DA | 89.9 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| d7-N-MeFOSE-M | 71.7 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| d9-N-EtFOSE-M | 68.3 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| d5-NEtPFOSA | 55.6 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| D3-NMeFOSA | 60.7 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |
| 13C2-PFDoDA | 80.8 | | 20 - 150 | 11/01/24 08:56 | 11/02/24 23:51 | 1 |

**Lab Sample ID: LCS 240-633477/3-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 10.0 | 10.8 | | ug/Kg | | 108 | 40 - 150 |
| Perfluoropentanoic acid (PFPeA) | 5.00 | 5.62 | | ug/Kg | | 112 | 40 - 150 |
| Perfluorohexanoic acid (PFHxA) | 2.50 | 2.82 | | ug/Kg | | 113 | 40 - 150 |
| Perfluoroheptanoic acid (PFHpA) | 2.50 | 2.67 | | ug/Kg | | 107 | 40 - 150 |
| Perfluorooctanoic acid (PFOA) | 2.50 | 2.65 | | ug/Kg | | 106 | 40 - 150 |
| Perfluorononanoic acid (PFNA) | 2.50 | 2.63 | | ug/Kg | | 105 | 40 - 150 |
| Perfluorodecanoic acid (PFDA) | 2.50 | 2.83 | | ug/Kg | | 113 | 40 - 150 |
| Perfluoroundecanoic acid (PFUnA) | 2.50 | 2.61 | | ug/Kg | | 104 | 40 - 150 |
| Perfluorododecanoic acid (PFDoA) | 2.50 | 2.62 | | ug/Kg | | 105 | 40 - 150 |
| Perfluorotridecanoic acid (PFTrDA) | 2.50 | 2.75 | | ug/Kg | | 110 | 40 - 150 |
| Perfluorotetradecanoic acid (PFTeDA) | 2.50 | 2.68 | | ug/Kg | | 107 | 40 - 150 |
| Perfluorobutanesulfonic acid (PFBS) | 2.21 | 2.42 | | ug/Kg | | 110 | 40 - 150 |
| Perfluoropentanesulfonic acid (PFPeS) | 2.35 | 2.64 | | ug/Kg | | 112 | 40 - 150 |
| Perfluorohexanesulfonic acid (PFHxS) | 2.28 | 2.45 | | ug/Kg | | 108 | 40 - 150 |
| Perfluoroheptanesulfonic acid (PFHpS) | 2.38 | 2.58 | | ug/Kg | | 109 | 40 - 150 |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

**Lab Sample ID: LCS 240-633477/3-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluorooctanesulfonic acid (PFOS) | 2.32 | 2.72 | | ug/Kg | | 117 | 40 - 150 |
| Perfluorononanesulfonic acid (PFNS) | 2.40 | 2.67 | | ug/Kg | | 111 | 40 - 150 |
| Perfluorododecanesulfonic acid (PFDoS) | 2.42 | 2.05 | | ug/Kg | | 85 | 40 - 150 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 9.34 | 9.59 | | ug/Kg | | 103 | 40 - 150 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 9.48 | 9.87 | | ug/Kg | | 104 | 40 - 150 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 9.58 | 10.2 | | ug/Kg | | 106 | 40 - 150 |
| Perfluorooctanesulfonamide (PFOSA) | 2.50 | 2.68 | | ug/Kg | | 107 | 40 - 150 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | 2.50 | 2.70 | | ug/Kg | | 108 | 40 - 150 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | 2.50 | 2.76 | | ug/Kg | | 111 | 40 - 150 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 2.50 | 2.76 | | ug/Kg | | 110 | 40 - 150 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 2.50 | 2.54 | | ug/Kg | | 102 | 40 - 150 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | 25.0 | 26.9 | | ug/Kg | | 107 | 40 - 150 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | 25.0 | 26.1 | | ug/Kg | | 105 | 40 - 150 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | 10.0 | 10.8 | | ug/Kg | | 108 | 40 - 150 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 9.42 | 10.1 | | ug/Kg | | 107 | 40 - 150 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | 5.00 | 5.69 | | ug/Kg | | 114 | 40 - 150 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | 5.00 | 4.73 | | ug/Kg | | 95 | 40 - 150 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | 9.32 | 9.60 | | ug/Kg | | 103 | 40 - 150 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 9.42 | 8.53 | | ug/Kg | | 91 | 40 - 150 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | 4.45 | 4.78 | | ug/Kg | | 107 | 40 - 150 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | 12.5 | 12.2 | | ug/Kg | | 97 | 40 - 150 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | 62.5 | 60.8 | | ug/Kg | | 97 | 40 - 150 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | 62.5 | 54.2 | | ug/Kg | | 87 | 40 - 150 |
| Perfluorodecanesulfonic acid (PFDS) | 2.41 | 2.56 | | ug/Kg | | 106 | 40 - 150 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | 5.00 | 5.18 | | ug/Kg | | 104 | 40 - 150 |

| *Isotope Dilution* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *107* | | *20 - 150* |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

**Lab Sample ID: LCS 240-633477/3-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Isotope Dilution | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 13C5 PFPeA | 90.3 | | 20 - 150 |
| 13C5 PFHxA | 97.8 | | 20 - 150 |
| 13C4 PFHpA | 101 | | 20 - 150 |
| 13C8 PFOA | 100 | | 20 - 150 |
| 13C9 PFNA | 104 | | 20 - 150 |
| 13C6 PFDA | 96.9 | | 20 - 150 |
| 13C7 PFUnA | 96.9 | | 20 - 150 |
| 13C2 PFTeDA | 78.8 | | 20 - 150 |
| 13C3 PFBS | 104 | | 20 - 150 |
| 13C3 PFHxS | 97.1 | | 20 - 150 |
| 13C8 PFOS | 94.5 | | 20 - 150 |
| 13C8 PFOSA | 82.0 | | 20 - 150 |
| d3-NMeFOSAA | 88.8 | | 20 - 150 |
| d5-NEtFOSAA | 104 | | 20 - 150 |
| M2-4:2 FTS | 116 | | 20 - 150 |
| M2-6:2 FTS | 113 | | 20 - 150 |
| M2-8:2 FTS | 112 | | 20 - 150 |
| 13C3 HFPO-DA | 101 | | 20 - 150 |
| d7-N-MeFOSE-M | 82.0 | | 20 - 150 |
| d9-N-EtFOSE-M | 79.6 | | 20 - 150 |
| d5-NEtPFOSA | 63.1 | | 20 - 150 |
| D3-NMeFOSA | 67.4 | | 20 - 150 |
| 13C2-PFDoDA | 90.7 | | 20 - 150 |

**Lab Sample ID: LLCS 240-633477/2-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | Spike Added | LLCS Result | LLCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 0.800 | 0.909 | | ug/Kg | | 114 | 40 - 150 |
| Perfluoropentanoic acid (PFPeA) | 0.400 | 0.457 | | ug/Kg | | 114 | 40 - 150 |
| Perfluorohexanoic acid (PFHxA) | 0.200 | 0.232 | | ug/Kg | | 116 | 40 - 150 |
| Perfluoroheptanoic acid (PFHpA) | 0.200 | 0.216 | | ug/Kg | | 108 | 40 - 150 |
| Perfluorooctanoic acid (PFOA) | 0.200 | 0.224 | | ug/Kg | | 112 | 40 - 150 |
| Perfluorononanoic acid (PFNA) | 0.200 | 0.223 | | ug/Kg | | 112 | 40 - 150 |
| Perfluorodecanoic acid (PFDA) | 0.200 | 0.235 | | ug/Kg | | 117 | 40 - 150 |
| Perfluoroundecanoic acid (PFUnA) | 0.200 | 0.224 | | ug/Kg | | 112 | 40 - 150 |
| Perfluorododecanoic acid (PFDoA) | 0.200 | 0.224 | | ug/Kg | | 112 | 40 - 150 |
| Perfluorotridecanoic acid (PFTrDA) | 0.200 | 0.258 | | ug/Kg | | 129 | 40 - 150 |
| Perfluorotetradecanoic acid (PFTeDA) | 0.200 | 0.220 | | ug/Kg | | 110 | 40 - 150 |
| Perfluorobutanesulfonic acid (PFBS) | 0.177 | 0.204 | | ug/Kg | | 115 | 40 - 150 |
| Perfluoropentanesulfonic acid (PFPeS) | 0.188 | 0.203 | | ug/Kg | | 108 | 40 - 150 |
| Perfluorohexanesulfonic acid (PFHxS) | 0.182 | 0.196 | J | ug/Kg | | 108 | 40 - 150 |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

**Lab Sample ID: LLCS 240-633477/2-A**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | Spike Added | LLCS Result | LLCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluoroheptanesulfonic acid (PFHpS) | 0.190 | 0.216 | | ug/Kg | | 114 | 40 - 150 |
| Perfluorooctanesulfonic acid (PFOS) | 0.186 | 0.231 | | ug/Kg | | 125 | 40 - 150 |
| Perfluorononanesulfonic acid (PFNS) | 0.192 | 0.218 | | ug/Kg | | 113 | 40 - 150 |
| Perfluorododecanesulfonic acid (PFDoS) | 0.194 | 0.156 | J | ug/Kg | | 81 | 40 - 150 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 0.747 | 0.773 | J | ug/Kg | | 103 | 40 - 150 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 0.758 | 0.882 | | ug/Kg | | 116 | 40 - 150 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 0.766 | 0.875 | | ug/Kg | | 114 | 40 - 150 |
| Perfluorooctanesulfonamide (PFOSA) | 0.200 | 0.236 | | ug/Kg | | 118 | 40 - 150 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | 0.200 | 0.254 | | ug/Kg | | 127 | 40 - 150 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | 0.200 | 0.231 | | ug/Kg | | 116 | 40 - 150 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 0.200 | 0.218 | | ug/Kg | | 109 | 40 - 150 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 0.200 | 0.209 | | ug/Kg | | 104 | 40 - 150 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | 2.00 | 2.51 | | ug/Kg | | 126 | 40 - 150 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | 2.00 | 2.29 | | ug/Kg | | 114 | 40 - 150 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | 0.800 | 0.870 | | ug/Kg | | 109 | 40 - 150 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 0.754 | 0.851 | | ug/Kg | | 113 | 40 - 150 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | 0.400 | 0.473 | | ug/Kg | | 118 | 40 - 150 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | 0.400 | 0.398 | J | ug/Kg | | 99 | 40 - 150 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | 0.746 | 0.835 | | ug/Kg | | 112 | 40 - 150 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 0.754 | 0.745 | J | ug/Kg | | 99 | 40 - 150 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | 0.356 | 0.386 | J | ug/Kg | | 108 | 40 - 150 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | 1.00 | 0.939 | J | ug/Kg | | 94 | 40 - 150 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | 5.00 | 4.63 | J | ug/Kg | | 93 | 40 - 150 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | 5.00 | 4.42 | J | ug/Kg | | 88 | 40 - 150 |
| Perfluorodecanesulfonic acid (PFDS) | 0.193 | 0.205 | | ug/Kg | | 106 | 40 - 150 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | 0.400 | 0.421 | | ug/Kg | | 105 | 40 - 150 |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

| Isotope Dilution | LLCS %Recovery | LLCS Qualifier | Limits |
|---|---|---|---|
| 13C4 PFBA | 98.6 | | 20 - 150 |
| 13C5 PFPeA | 85.5 | | 20 - 150 |
| 13C5 PFHxA | 92.6 | | 20 - 150 |
| 13C4 PFHpA | 94.5 | | 20 - 150 |
| 13C8 PFOA | 90.8 | | 20 - 150 |
| 13C9 PFNA | 93.8 | | 20 - 150 |
| 13C6 PFDA | 85.7 | | 20 - 150 |
| 13C7 PFUnA | 84.9 | | 20 - 150 |
| 13C2 PFTeDA | 70.4 | | 20 - 150 |
| 13C3 PFBS | 92.2 | | 20 - 150 |
| 13C3 PFHxS | 90.5 | | 20 - 150 |
| 13C8 PFOS | 83.5 | | 20 - 150 |
| 13C8 PFOSA | 72.5 | | 20 - 150 |
| d3-NMeFOSAA | 79.9 | | 20 - 150 |
| d5-NEtFOSAA | 87.3 | | 20 - 150 |
| M2-4:2 FTS | 103 | | 20 - 150 |
| M2-6:2 FTS | 95.3 | | 20 - 150 |
| M2-8:2 FTS | 89.6 | | 20 - 150 |
| 13C3 HFPO-DA | 93.3 | | 20 - 150 |
| d7-N-MeFOSE-M | 72.2 | | 20 - 150 |
| d9-N-EtFOSE-M | 70.4 | | 20 - 150 |
| d5-NEtPFOSA | 56.1 | | 20 - 150 |
| D3-NMeFOSA | 58.4 | | 20 - 150 |
| 13C2-PFDoDA | 83.2 | | 20 - 150 |

**Lab Sample ID: 480-224895-26 DU**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: PILE6-02-10282024**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoropentanoic acid (PFPeA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorohexanoic acid (PFHxA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoroheptanoic acid (PFHpA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorooctanoic acid (PFOA) | 0.12 | J | | 0.104 | J | ug/Kg | ☼ | | | 11 | 30 |
| Perfluorononanoic acid (PFNA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorodecanoic acid (PFDA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoroundecanoic acid (PFUnA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorododecanoic acid (PFDoA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorotridecanoic acid (PFTrDA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorotetradecanoic acid (PFTeDA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorobutanesulfonic acid (PFBS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoropentanesulfonic acid (PFPeS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorohexanesulfonic acid (PFHxS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoroheptanesulfonic acid (PFHpS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

**Lab Sample ID: 480-224895-26 DU**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: PILE6-02-10282024**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorooctanesulfonic acid (PFOS) | 0.052 | J | | 0.0509 | J I | ug/Kg | ☼ | | | 3 | 30 |
| Perfluorononanesulfonic acid (PFNS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorododecanesulfonic acid (PFDoS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorooctanesulfonamide (PFOSA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluorodecanesulfonic acid (PFDS) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | ND | | | ND | | ug/Kg | ☼ | | | NC | 30 |

| *Isotope Dilution* | *DU %Recovery* | *DU Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *78.0* | | *20 - 150* |

## Method: Draft-3 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

**Lab Sample ID: 480-224895-26 DU**
**Matrix: Solid**
**Analysis Batch: 633666**

**Client Sample ID: PILE6-02-10282024**
**Prep Type: Total/NA**
**Prep Batch: 633477**

| Isotope Dilution | DU %Recovery | DU Qualifier | Limits |
|---|---|---|---|
| 13C5 PFPeA | 64.2 | | 20 - 150 |
| 13C5 PFHxA | 68.2 | | 20 - 150 |
| 13C4 PFHpA | 68.0 | | 20 - 150 |
| 13C8 PFOA | 74.0 | | 20 - 150 |
| 13C9 PFNA | 74.0 | | 20 - 150 |
| 13C6 PFDA | 70.4 | | 20 - 150 |
| 13C7 PFUnA | 70.8 | | 20 - 150 |
| 13C2 PFTeDA | 68.2 | | 20 - 150 |
| 13C3 PFBS | 75.1 | | 20 - 150 |
| 13C3 PFHxS | 74.4 | | 20 - 150 |
| 13C8 PFOS | 76.5 | | 20 - 150 |
| 13C8 PFOSA | 53.8 | | 20 - 150 |
| d3-NMeFOSAA | 44.7 | | 20 - 150 |
| d5-NEtFOSAA | 54.6 | | 20 - 150 |
| M2-4:2 FTS | 67.4 | | 20 - 150 |
| M2-6:2 FTS | 64.7 | | 20 - 150 |
| M2-8:2 FTS | 73.4 | | 20 - 150 |
| 13C3 HFPO-DA | 73.4 | | 20 - 150 |
| d7-N-MeFOSE-M | 61.9 | | 20 - 150 |
| d9-N-EtFOSE-M | 62.4 | | 20 - 150 |
| d5-NEtPFOSA | 56.3 | | 20 - 150 |
| D3-NMeFOSA | 54.1 | | 20 - 150 |
| 13C2-PFDoDA | 72.9 | | 20 - 150 |

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 480-730281/1-A**
**Matrix: Solid**
**Analysis Batch: 730572**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730281**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | ND | | 10.1 | 8.7 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Antimony | ND | | 15.2 | 0.54 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Arsenic | ND | | 2.0 | 0.89 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Barium | ND | | 0.51 | 0.14 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Beryllium | ND | | 0.20 | 0.041 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Cadmium | ND | | 0.20 | 0.071 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Calcium | ND | | 50.7 | 27.4 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Chromium | ND | | 0.51 | 0.37 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Cobalt | ND | | 0.51 | 0.10 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Copper | ND | ^5+ | 1.0 | 0.58 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Iron | ND | ^5- | 10.1 | 8.6 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Lead | ND | | 1.0 | 0.47 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Magnesium | ND | | 20.3 | 8.6 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Manganese | ND | | 1.0 | 0.28 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Nickel | ND | | 5.1 | 0.25 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Potassium | ND | | 30.4 | 24.6 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Selenium | ND | | 4.1 | 0.81 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Silver | ND | ^5- | 0.61 | 0.20 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-730281/1-A**
**Matrix: Solid**
**Analysis Batch: 730572**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730281**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sodium | ND | | 142 | 62.2 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Thallium | ND | | 6.1 | 0.77 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Vanadium | ND | | 0.51 | 0.13 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |
| Zinc | ND | ^5- | 2.0 | 1.0 | mg/Kg | | 10/29/24 14:46 | 10/30/24 17:08 | 1 |

**Lab Sample ID: LCSSRM 480-730281/2-A**
**Matrix: Solid**
**Analysis Batch: 730857**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730281**

| Analyte | Spike Added | LCSSRM Result | LCSSRM Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Aluminum | 6780 | 6442 | | mg/Kg | | 95.0 | 47.8 - 151.9 |
| Antimony | 127 | 82.15 | | mg/Kg | | 64.7 | 20.2 - 250.4 |
| Arsenic | 311 | 240.1 | | mg/Kg | | 77.2 | 70.1 - 130.2 |
| Barium | 304 | 267.1 | | mg/Kg | | 87.9 | 75.0 - 125.0 |
| Beryllium | 169 | 143.4 | | mg/Kg | | 84.8 | 75.1 - 124.9 |
| Cadmium | 212 | 175.0 | | mg/Kg | | 82.6 | 75.0 - 125.0 |
| Calcium | 5170 | 4219 | | mg/Kg | | 81.6 | 72.9 - 126.9 |
| Chromium | 180 | 152.5 | | mg/Kg | | 84.7 | 70.0 - 130.0 |
| Cobalt | 81.6 | 73.82 | | mg/Kg | | 90.5 | 75.0 - 125.0 |
| Copper | 205 | 167.4 | | mg/Kg | | 81.6 | 75.1 - 124.9 |
| Iron | 6510 | 5741 | | mg/Kg | | 88.2 | 11.3 - 202.8 |
| Lead | 92.8 | 82.76 | | mg/Kg | | 89.2 | 81.8 - 118.5 |
| Magnesium | 1700 | 1405 | | mg/Kg | | 82.6 | 55.6 - 144.1 |
| Manganese | 531 | 443.3 | | mg/Kg | | 83.5 | 77.2 - 122.8 |
| Nickel | 313 | 291.6 | | mg/Kg | | 93.2 | 70.0 - 130.0 |
| Potassium | 1370 | 1235 | | mg/Kg | | 90.1 | 52.0 - 148.2 |
| Selenium | 165 | 118.2 | | mg/Kg | | 71.6 | 67.9 - 132.1 |
| Silver | 82.4 | 63.22 | | mg/Kg | | 76.7 | 71.0 - 128.6 |
| Sodium | 486 | 411.7 | | mg/Kg | | 84.7 | 59.5 - 140.5 |
| Thallium | 205 | 186.8 | | mg/Kg | | 91.1 | 72.2 - 128.3 |
| Vanadium | 103 | 89.22 | | mg/Kg | | 86.6 | 68.0 - 132.0 |
| Zinc | 166 | 137.6 | | mg/Kg | | 82.9 | 70.5 - 130.1 |

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Method: 7471B - Mercury (CVAA)

**Lab Sample ID: MB 480-730595/1-A**
**Matrix: Solid**
**Analysis Batch: 730681**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730595**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | ND | | 0.020 | 0.0046 | mg/Kg | | 10/31/24 09:44 | 10/31/24 13:05 | 1 |

**Lab Sample ID: LCSSRM 480-730595/2-A ^10**
**Matrix: Solid**
**Analysis Batch: 730681**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730595**

| Analyte | Spike Added | LCSSRM Result | LCSSRM Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Mercury | 11.9 | 10.39 | | mg/Kg | | 87.3 | 59.8 - 139.5 |

## Method: 9012B - Cyanide, Total andor Amenable

**Lab Sample ID: MB 480-730702/1-A**
**Matrix: Solid**
**Analysis Batch: 730810**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 730702**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | | 0.95 | 0.46 | mg/Kg | | 10/31/24 14:10 | 10/31/24 18:10 | 1 |

**Lab Sample ID: LCS 480-730702/3-A**
**Matrix: Solid**
**Analysis Batch: 730810**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730702**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Cyanide, Total | 0.400 | 0.418 | | mg/Kg | | 105 | 29 - 122 |

**Lab Sample ID: LCS 480-730702/4-A**
**Matrix: Solid**
**Analysis Batch: 730810**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730702**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Cyanide, Total | 0.250 | 0.257 | | mg/Kg | | 103 | 29 - 122 |

**Lab Sample ID: LCSSRM 480-730702/2-A**
**Matrix: Solid**
**Analysis Batch: 730810**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 730702**

| Analyte | Spike Added | LCSSRM Result | LCSSRM Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Cyanide, Total | 150 | 85.63 | | mg/Kg | | 57.1 | 38.9 - 138.7 |

**Lab Sample ID: 480-224895-26 MS**
**Matrix: Solid**
**Analysis Batch: 730810**

**Client Sample ID: PILE6-02-10282024**
**Prep Type: Total/NA**
**Prep Batch: 730702**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | F1 | 1.23 | ND | F1 | mg/Kg | ☼ | 0 | 85 - 115 |

## GC/MS VOA

### Prep Batch: 730740

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 5035A_L | |
| MB 480-730740/2-A | Method Blank | Total/NA | Solid | 5035A_L | |
| LCS 480-730740/1-A | Lab Control Sample | Total/NA | Solid | 5035A_L | |
| 480-224895-1 MS | PILE1-01-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-1 MSD | PILE1-01-10282024 | Total/NA | Solid | 5035A_L | |

### Analysis Batch: 730750

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 8260C | 730740 |
| MB 480-730740/2-A | Method Blank | Total/NA | Solid | 8260C | 730740 |
| LCS 480-730740/1-A | Lab Control Sample | Total/NA | Solid | 8260C | 730740 |
| 480-224895-1 MS | PILE1-01-10282024 | Total/NA | Solid | 8260C | 730740 |
| 480-224895-1 MSD | PILE1-01-10282024 | Total/NA | Solid | 8260C | 730740 |

### Analysis Batch: 730795

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-27 | PILE6-03-10282024 | Total/NA | Solid | 8260C | 730798 |
| 480-224895-29 | PILE6-05-10282024 | Total/NA | Solid | 8260C | 730798 |
| MB 480-730798/3-A | Method Blank | Total/NA | Solid | 8260C | 730798 |
| LCS 480-730798/1-A | Lab Control Sample | Total/NA | Solid | 8260C | 730798 |

### Prep Batch: 730798

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-27 | PILE6-03-10282024 | Total/NA | Solid | 5035A_H | |
| 480-224895-29 | PILE6-05-10282024 | Total/NA | Solid | 5035A_H | |
| MB 480-730798/3-A | Method Blank | Total/NA | Solid | 5035A_H | |
| LCS 480-730798/1-A | Lab Control Sample | Total/NA | Solid | 5035A_H | |

### Prep Batch: 730832

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-3 | PILE1-03-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-4 | PILE1-04-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-5 | PILE1-05-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-6 | PILE1-06-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-8 | PILE2-02-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-9 | PILE2-03-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-10 | PILE2-04-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-13 | PILE3-03-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-14 | PILE3-04-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-16 | PILE3-06-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-17 | PILE3-07-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-20 | PILE4-03-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-21 | PILE4-04-10282024 | Total/NA | Solid | 5035A_L | |
| MB 480-730832/2-A | Method Blank | Total/NA | Solid | 5035A_L | |
| LCS 480-730832/1-A | Lab Control Sample | Total/NA | Solid | 5035A_L | |

## GC/MS VOA (Continued)

### Prep Batch: 730832 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-20 MS | PILE4-03-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-20 MSD | PILE4-03-10282024 | Total/NA | Solid | 5035A_L | |

### Prep Batch: 730959

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-22 | PILE4-05-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-23 | PILE4-06-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-30 | PILE6-06-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-31 | PILE6-07-10282024 | Total/NA | Solid | 5035A_L | |
| MB 480-730959/2-A | Method Blank | Total/NA | Solid | 5035A_L | |
| LCS 480-730959/1-A | Lab Control Sample | Total/NA | Solid | 5035A_L | |
| 480-224895-31 MS | PILE6-07-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-31 MSD | PILE6-07-10282024 | Total/NA | Solid | 5035A_L | |

### Analysis Batch: 730960

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-22 | PILE4-05-10282024 | Total/NA | Solid | 8260C | 730959 |
| 480-224895-23 | PILE4-06-10282024 | Total/NA | Solid | 8260C | 730959 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 8260C | 730959 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 8260C | 730959 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 8260C | 730959 |
| 480-224895-30 | PILE6-06-10282024 | Total/NA | Solid | 8260C | 730959 |
| 480-224895-31 | PILE6-07-10282024 | Total/NA | Solid | 8260C | 730959 |
| MB 480-730959/2-A | Method Blank | Total/NA | Solid | 8260C | 730959 |
| LCS 480-730959/1-A | Lab Control Sample | Total/NA | Solid | 8260C | 730959 |
| 480-224895-31 MS | PILE6-07-10282024 | Total/NA | Solid | 8260C | 730959 |
| 480-224895-31 MSD | PILE6-07-10282024 | Total/NA | Solid | 8260C | 730959 |

### Analysis Batch: 730961

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-3 | PILE1-03-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-4 | PILE1-04-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-5 | PILE1-05-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-6 | PILE1-06-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-8 | PILE2-02-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-9 | PILE2-03-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-10 | PILE2-04-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-13 | PILE3-03-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-14 | PILE3-04-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-16 | PILE3-06-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-17 | PILE3-07-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-20 | PILE4-03-10282024 | Total/NA | Solid | 8260C | 730832 |

## GC/MS VOA (Continued)

### Analysis Batch: 730961 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-21 | PILE4-04-10282024 | Total/NA | Solid | 8260C | 730832 |
| MB 480-730832/2-A | Method Blank | Total/NA | Solid | 8260C | 730832 |
| LCS 480-730832/1-A | Lab Control Sample | Total/NA | Solid | 8260C | 730832 |
| 480-224895-20 MS | PILE4-03-10282024 | Total/NA | Solid | 8260C | 730832 |
| 480-224895-20 MSD | PILE4-03-10282024 | Total/NA | Solid | 8260C | 730832 |

### Prep Batch: 730999

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-15 | PILE3-05-10282024 | Total/NA | Solid | 5035A_L | |
| 480-224895-28 | PILE6-04-10282024 | Total/NA | Solid | 5035A_L | |
| MB 480-730999/2-A | Method Blank | Total/NA | Solid | 5035A_L | |
| LCS 480-730999/1-A | Lab Control Sample | Total/NA | Solid | 5035A_L | |

### Analysis Batch: 731001

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-15 | PILE3-05-10282024 | Total/NA | Solid | 8260C | 730999 |
| 480-224895-28 | PILE6-04-10282024 | Total/NA | Solid | 8260C | 730999 |
| MB 480-730999/2-A | Method Blank | Total/NA | Solid | 8260C | 730999 |
| LCS 480-730999/1-A | Lab Control Sample | Total/NA | Solid | 8260C | 730999 |

## GC/MS Semi VOA

### Prep Batch: 730353

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-2 - DL | PILE1-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-11 - DL | PILE3-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 3550C | |
| MB 480-730353/1-A | Method Blank | Total/NA | Solid | 3550C | |
| LCS 480-730353/2-A | Lab Control Sample | Total/NA | Solid | 3550C | |

### Prep Batch: 730376

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 3550C | |
| MB 480-730376/1-A | Method Blank | Total/NA | Solid | 3550C | |
| LCS 480-730376/2-A | Lab Control Sample | Total/NA | Solid | 3550C | |

### Analysis Batch: 730417

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 8270D | 730353 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 8270D | 730353 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 8270D | 730353 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 8270D | 730353 |
| MB 480-730353/1-A | Method Blank | Total/NA | Solid | 8270D | 730353 |

## GC/MS Semi VOA (Continued)

### Analysis Batch: 730417 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 480-730353/2-A | Lab Control Sample | Total/NA | Solid | 8270D | 730353 |

### Analysis Batch: 730587

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-2 - DL | PILE1-02-10282024 | Total/NA | Solid | 8270D | 730353 |
| 480-224895-11 - DL | PILE3-01-10282024 | Total/NA | Solid | 8270D | 730353 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 8270D | 730376 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 8270D | 730376 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 8270D | 730376 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 8270D | 730376 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 8270D | 730376 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 8270D | 730376 |
| MB 480-730376/1-A | Method Blank | Total/NA | Solid | 8270D | 730376 |
| LCS 480-730376/2-A | Lab Control Sample | Total/NA | Solid | 8270D | 730376 |

## GC Semi VOA

### Prep Batch: 730360

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 3550C | |
| MB 480-730360/1-A | Method Blank | Total/NA | Solid | 3550C | |
| LCS 480-730360/2-A | Lab Control Sample | Total/NA | Solid | 3550C | |

### Prep Batch: 730372

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 3550C | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 3550C | |
| MB 480-730372/1-A | Method Blank | Total/NA | Solid | 3550C | |
| LCS 480-730372/2-A | Lab Control Sample | Total/NA | Solid | 3550C | |

### Analysis Batch: 730459

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 8082A | 730360 |

## GC Semi VOA (Continued)

### Analysis Batch: 730459 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 8082A | 730360 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 8082A | 730360 |
| MB 480-730360/1-A | Method Blank | Total/NA | Solid | 8082A | 730360 |
| LCS 480-730360/2-A | Lab Control Sample | Total/NA | Solid | 8082A | 730360 |

### Prep Batch: 730561

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 8151A | |
| MB 480-730561/1-A | Method Blank | Total/NA | Solid | 8151A | |
| LCS 480-730561/2-A | Lab Control Sample | Total/NA | Solid | 8151A | |
| 480-224895-26 MS | PILE6-02-10282024 | Total/NA | Solid | 8151A | |
| 480-224895-26 MSD | PILE6-02-10282024 | Total/NA | Solid | 8151A | |

### Analysis Batch: 730567

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 8081B | 730372 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 8081B | 730372 |
| MB 480-730372/1-A | Method Blank | Total/NA | Solid | 8081B | 730372 |
| LCS 480-730372/2-A | Lab Control Sample | Total/NA | Solid | 8081B | 730372 |

### Analysis Batch: 730835

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 8151A | 730561 |

## GC Semi VOA (Continued)

### Analysis Batch: 730835 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 8151A | 730561 |
| MB 480-730561/1-A | Method Blank | Total/NA | Solid | 8151A | 730561 |
| LCS 480-730561/2-A | Lab Control Sample | Total/NA | Solid | 8151A | 730561 |
| 480-224895-26 MS | PILE6-02-10282024 | Total/NA | Solid | 8151A | 730561 |
| 480-224895-26 MSD | PILE6-02-10282024 | Total/NA | Solid | 8151A | 730561 |

## LCMS

### Prep Batch: 633477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 1633 Shake | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 1633 Shake | |
| MB 240-633477/1-A | Method Blank | Total/NA | Solid | 1633 Shake | |
| LCS 240-633477/3-A | Lab Control Sample | Total/NA | Solid | 1633 Shake | |
| LLCS 240-633477/2-A | Lab Control Sample | Total/NA | Solid | 1633 Shake | |
| 480-224895-26 DU | PILE6-02-10282024 | Total/NA | Solid | 1633 Shake | |

### Analysis Batch: 633666

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |
| MB 240-633477/1-A | Method Blank | Total/NA | Solid | Draft-3 1633 | 633477 |
| LCS 240-633477/3-A | Lab Control Sample | Total/NA | Solid | Draft-3 1633 | 633477 |
| LLCS 240-633477/2-A | Lab Control Sample | Total/NA | Solid | Draft-3 1633 | 633477 |
| 480-224895-26 DU | PILE6-02-10282024 | Total/NA | Solid | Draft-3 1633 | 633477 |

## Metals

### Prep Batch: 730281

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 3050B | |

## Metals (Continued)

### Prep Batch: 730281 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 3050B | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 3050B | |
| MB 480-730281/1-A | Method Blank | Total/NA | Solid | 3050B | |
| LCSSRM 480-730281/2-A | Lab Control Sample | Total/NA | Solid | 3050B | |

### Analysis Batch: 730572

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| MB 480-730281/1-A | Method Blank | Total/NA | Solid | 6010C | 730281 |

### Prep Batch: 730595

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 7471B | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 7471B | |
| MB 480-730595/1-A | Method Blank | Total/NA | Solid | 7471B | |
| LCSSRM 480-730595/2-A ^10 | Lab Control Sample | Total/NA | Solid | 7471B | |

### Analysis Batch: 730681

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 7471B | 730595 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 7471B | 730595 |
| MB 480-730595/1-A | Method Blank | Total/NA | Solid | 7471B | 730595 |

## Metals (Continued)

### Analysis Batch: 730681 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSSRM 480-730595/2-A ^10 | Lab Control Sample | Total/NA | Solid | 7471B | 730595 |

### Analysis Batch: 730705

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 7471B | 730595 |

### Analysis Batch: 730774

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 6010C | 730281 |

### Analysis Batch: 730857

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSSRM 480-730281/2-A | Lab Control Sample | Total/NA | Solid | 6010C | 730281 |

### Analysis Batch: 731091

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 6010C | 730281 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 6010C | 730281 |

## General Chemistry

### Analysis Batch: 730271

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-3 | PILE1-03-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-4 | PILE1-04-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-5 | PILE1-05-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-6 | PILE1-06-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-8 | PILE2-02-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-9 | PILE2-03-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-10 | PILE2-04-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-13 | PILE3-03-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-14 | PILE3-04-10282024 | Total/NA | Solid | Moisture | |

## General Chemistry (Continued)

### Analysis Batch: 730271 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-15 | PILE3-05-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-16 | PILE3-06-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-17 | PILE3-07-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-20 | PILE4-03-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-21 | PILE4-04-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-22 | PILE4-05-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-23 | PILE4-06-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-27 | PILE6-03-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-28 | PILE6-04-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-29 | PILE6-05-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-30 | PILE6-06-10282024 | Total/NA | Solid | Moisture | |
| 480-224895-31 | PILE6-07-10282024 | Total/NA | Solid | Moisture | |

### Prep Batch: 730702

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 9012B | |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 9012B | |
| MB 480-730702/1-A | Method Blank | Total/NA | Solid | 9012B | |
| LCS 480-730702/3-A | Lab Control Sample | Total/NA | Solid | 9012B | |
| LCS 480-730702/4-A | Lab Control Sample | Total/NA | Solid | 9012B | |
| LCSSRM 480-730702/2-A | Lab Control Sample | Total/NA | Solid | 9012B | |
| 480-224895-26 MS | PILE6-02-10282024 | Total/NA | Solid | 9012B | |

### Analysis Batch: 730810

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-2 | PILE1-02-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-7 | PILE2-01-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-11 | PILE3-01-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-12 | PILE3-02-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-18 | PILE4-01-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-19 | PILE4-02-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-24 | PILE5-01-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-25 | PILE6-01-10282024 | Total/NA | Solid | 9012B | 730702 |
| 480-224895-26 | PILE6-02-10282024 | Total/NA | Solid | 9012B | 730702 |
| MB 480-730702/1-A | Method Blank | Total/NA | Solid | 9012B | 730702 |
| LCS 480-730702/3-A | Lab Control Sample | Total/NA | Solid | 9012B | 730702 |
| LCS 480-730702/4-A | Lab Control Sample | Total/NA | Solid | 9012B | 730702 |

## General Chemistry (Continued)

### Analysis Batch: 730810 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSSRM 480-730702/2-A | Lab Control Sample | Total/NA | Solid | 9012B | 730702 |
| 480-224895-26 MS | PILE6-02-10282024 | Total/NA | Solid | 9012B | 730702 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE1-01-10282024

**Lab Sample ID: 480-224895-1**

**Date Collected: 10/28/24 13:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE1-01-10282024

**Lab Sample ID: 480-224895-1**

**Date Collected: 10/28/24 13:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 90.6**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730740 | CDC | EET BUF | 10/31/24 17:53 |
| Total/NA | Analysis | 8260C | | 1 | 730750 | CDC | EET BUF | 11/01/24 00:20 |
| Total/NA | Prep | 3550C | | | 730353 | SJM | EET BUF | 10/29/24 17:50 |
| Total/NA | Analysis | 8270D | | 20 | 730417 | JMM | EET BUF | 10/30/24 22:17 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 11:39 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/30/24 16:53 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 16:50 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 03:00 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:37 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:17 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:22 |

## Client Sample ID: PILE1-02-10282024

**Lab Sample ID: 480-224895-2**

**Date Collected: 10/28/24 13:35**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE1-02-10282024

**Lab Sample ID: 480-224895-2**

**Date Collected: 10/28/24 13:35**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 92.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/02/24 22:29 |
| Total/NA | Prep | 3550C | DL | | 730353 | SJM | EET BUF | 10/29/24 17:50 |
| Total/NA | Analysis | 8270D | DL | 5 | 730587 | JMM | EET BUF | 10/31/24 11:20 |
| Total/NA | Prep | 3550C | | | 730353 | SJM | EET BUF | 10/29/24 17:50 |
| Total/NA | Analysis | 8270D | | 1 | 730417 | JMM | EET BUF | 10/30/24 22:42 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE1-02-10282024

**Lab Sample ID: 480-224895-2**

**Date Collected: 10/28/24 13:35**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 92.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 11:59 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/30/24 17:11 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 17:09 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 03:17 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:45 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 17:48 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:26 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:18 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:22 |

## Client Sample ID: PILE1-03-10282024

**Lab Sample ID: 480-224895-3**

**Date Collected: 10/28/24 13:40**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE1-03-10282024

**Lab Sample ID: 480-224895-3**

**Date Collected: 10/28/24 13:40**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/02/24 22:52 |

## Client Sample ID: PILE1-04-10282024

**Lab Sample ID: 480-224895-4**

**Date Collected: 10/28/24 13:45**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE1-04-10282024

**Lab Sample ID: 480-224895-4**

**Date Collected: 10/28/24 13:45**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.7**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/02/24 23:16 |

## Client Sample ID: PILE1-05-10282024

**Lab Sample ID: 480-224895-5**

**Date Collected: 10/28/24 13:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE1-05-10282024

**Lab Sample ID: 480-224895-5**

**Date Collected: 10/28/24 13:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 98.5**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/02/24 23:40 |

## Client Sample ID: PILE1-06-10282024

**Lab Sample ID: 480-224895-6**

**Date Collected: 10/28/24 13:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE1-06-10282024

**Lab Sample ID: 480-224895-6**

**Date Collected: 10/28/24 13:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.1**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 00:04 |

## Client Sample ID: PILE2-01-10282024

**Lab Sample ID: 480-224895-7**

**Date Collected: 10/28/24 14:00**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE2-01-10282024

**Lab Sample ID: 480-224895-7**

**Date Collected: 10/28/24 14:00**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 96.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 00:28 |
| Total/NA | Prep | 3550C | | | 730353 | SJM | EET BUF | 10/29/24 17:50 |
| Total/NA | Analysis | 8270D | | 20 | 730417 | JMM | EET BUF | 10/30/24 23:06 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 12:18 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 07:21 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 17:27 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 03:33 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:47 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 17:50 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:28 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 100 | 730705 | ESB | EET BUF | 10/31/24 15:12 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:23 |

## Client Sample ID: PILE2-02-10282024

**Lab Sample ID: 480-224895-8**

**Date Collected: 10/28/24 14:05**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE2-02-10282024

**Lab Sample ID: 480-224895-8**

**Date Collected: 10/28/24 14:05**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.4**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 00:51 |

## Client Sample ID: PILE2-03-10282024

**Lab Sample ID: 480-224895-9**

**Date Collected: 10/28/24 14:10**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE2-03-10282024** — **Lab Sample ID: 480-224895-9**
**Date Collected: 10/28/24 14:10** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 96.4**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 01:15 |

**Client Sample ID: PILE2-04-10282024** — **Lab Sample ID: 480-224895-10**
**Date Collected: 10/28/24 14:15** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE2-04-10282024** — **Lab Sample ID: 480-224895-10**
**Date Collected: 10/28/24 14:15** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 92.6**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 01:39 |

**Client Sample ID: PILE3-01-10282024** — **Lab Sample ID: 480-224895-11**
**Date Collected: 10/28/24 14:20** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE3-01-10282024** — **Lab Sample ID: 480-224895-11**
**Date Collected: 10/28/24 14:20** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 96.0**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 01:02 |
| Total/NA | Prep | 3550C | DL | | 730353 | SJM | EET BUF | 10/29/24 17:50 |
| Total/NA | Analysis | 8270D | DL | 50 | 730587 | JMM | EET BUF | 10/31/24 11:48 |
| Total/NA | Prep | 3550C | | | 730353 | SJM | EET BUF | 10/29/24 17:50 |
| Total/NA | Analysis | 8270D | | 20 | 730417 | JMM | EET BUF | 10/30/24 23:31 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 12:38 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 07:39 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 17:46 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 03:50 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:49 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE3-01-10282024

**Lab Sample ID: 480-224895-11**

**Date Collected: 10/28/24 14:20**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 96.0**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 17:52 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:30 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:24 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:23 |

## Client Sample ID: PILE3-02-10282024

**Lab Sample ID: 480-224895-12**

**Date Collected: 10/28/24 14:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE3-02-10282024

**Lab Sample ID: 480-224895-12**

**Date Collected: 10/28/24 14:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 01:26 |
| Total/NA | Prep | 3550C | | | 730376 | DP | EET BUF | 10/30/24 07:13 |
| Total/NA | Analysis | 8270D | | 1 | 730587 | JMM | EET BUF | 10/31/24 16:25 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 1 | 730567 | MAN | EET BUF | 10/31/24 12:57 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 07:57 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 18:04 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 04:07 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:51 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 17:54 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:32 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:26 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:23 |

**Client Sample ID: PILE3-03-10282024** — **Lab Sample ID: 480-224895-13**
**Date Collected: 10/28/24 14:30** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE3-03-10282024** — **Lab Sample ID: 480-224895-13**
**Date Collected: 10/28/24 14:30** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 94.4**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 01:50 |

**Client Sample ID: PILE3-04-10282024** — **Lab Sample ID: 480-224895-14**
**Date Collected: 10/28/24 14:35** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE3-04-10282024** — **Lab Sample ID: 480-224895-14**
**Date Collected: 10/28/24 14:35** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 97.4**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 02:14 |

**Client Sample ID: PILE3-05-10282024** — **Lab Sample ID: 480-224895-15**
**Date Collected: 10/28/24 14:40** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE3-05-10282024** — **Lab Sample ID: 480-224895-15**
**Date Collected: 10/28/24 14:40** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 93.9**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730999 | CDC | EET BUF | 11/03/24 16:37 |
| Total/NA | Analysis | 8260C | | 1 | 731001 | CDC | EET BUF | 11/03/24 20:28 |

**Client Sample ID: PILE3-06-10282024** — **Lab Sample ID: 480-224895-16**
**Date Collected: 10/28/24 14:45** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE3-06-10282024

**Lab Sample ID: 480-224895-16**

**Date Collected: 10/28/24 14:45**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.0**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 03:01 |

## Client Sample ID: PILE3-07-10282024

**Lab Sample ID: 480-224895-17**

**Date Collected: 10/28/24 14:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE3-07-10282024

**Lab Sample ID: 480-224895-17**

**Date Collected: 10/28/24 14:50**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 93.7**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 03:25 |

## Client Sample ID: PILE4-01-10282024

**Lab Sample ID: 480-224895-18**

**Date Collected: 10/28/24 14:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE4-01-10282024

**Lab Sample ID: 480-224895-18**

**Date Collected: 10/28/24 14:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 03:49 |
| Total/NA | Prep | 3550C | | | 730376 | DP | EET BUF | 10/30/24 07:13 |
| Total/NA | Analysis | 8270D | | 5 | 730587 | JMM | EET BUF | 10/31/24 16:53 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 13:17 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 08:15 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 18:23 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 04:23 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:52 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 17:56 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE4-01-10282024

**Lab Sample ID: 480-224895-18**

**Date Collected: 10/28/24 14:55**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:34 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:30 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:26 |

## Client Sample ID: PILE4-02-10282024

**Lab Sample ID: 480-224895-19**

**Date Collected: 10/28/24 15:00**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE4-02-10282024

**Lab Sample ID: 480-224895-19**

**Date Collected: 10/28/24 15:00**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 95.4**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:36 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 04:13 |
| Total/NA | Prep | 3550C | | | 730376 | DP | EET BUF | 10/30/24 07:13 |
| Total/NA | Analysis | 8270D | | 10 | 730587 | JMM | EET BUF | 10/31/24 17:21 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 13:36 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 08:34 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 18:41 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 04:40 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:54 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 17:57 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:36 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:31 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:26 |

**Client Sample ID: PILE4-03-10282024** — **Lab Sample ID: 480-224895-20**
**Date Collected: 10/28/24 15:05** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE4-03-10282024** — **Lab Sample ID: 480-224895-20**
**Date Collected: 10/28/24 15:05** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 95.2**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:36 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 04:36 |

**Client Sample ID: PILE4-04-10282024** — **Lab Sample ID: 480-224895-21**
**Date Collected: 10/28/24 15:10** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE4-04-10282024** — **Lab Sample ID: 480-224895-21**
**Date Collected: 10/28/24 15:10** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 92.1**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730832 | LCH | EET BUF | 11/01/24 11:35 |
| Total/NA | Analysis | 8260C | | 1 | 730961 | CDC | EET BUF | 11/03/24 05:00 |

**Client Sample ID: PILE4-05-10282024** — **Lab Sample ID: 480-224895-22**
**Date Collected: 10/28/24 15:15** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE4-05-10282024** — **Lab Sample ID: 480-224895-22**
**Date Collected: 10/28/24 15:15** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 93.8**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730959 | CDC | EET BUF | 11/02/24 18:19 |
| Total/NA | Analysis | 8260C | | 1 | 730960 | CDC | EET BUF | 11/03/24 01:58 |

**Client Sample ID: PILE4-06-10282024** — **Lab Sample ID: 480-224895-23**
**Date Collected: 10/28/24 15:20** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Client Sample ID: PILE4-06-10282024

**Lab Sample ID: 480-224895-23**

**Date Collected: 10/28/24 15:20**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.3**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730959 | CDC | EET BUF | 11/02/24 18:19 |
| Total/NA | Analysis | 8260C | | 1 | 730960 | CDC | EET BUF | 11/03/24 02:25 |

## Client Sample ID: PILE5-01-10282024

**Lab Sample ID: 480-224895-24**

**Date Collected: 10/28/24 15:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE5-01-10282024

**Lab Sample ID: 480-224895-24**

**Date Collected: 10/28/24 15:25**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 97.3**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730959 | CDC | EET BUF | 11/02/24 18:19 |
| Total/NA | Analysis | 8260C | | 1 | 730960 | CDC | EET BUF | 11/03/24 02:52 |
| Total/NA | Prep | 3550C | | | 730376 | DP | EET BUF | 10/30/24 07:13 |
| Total/NA | Analysis | 8270D | | 1 | 730587 | JMM | EET BUF | 10/31/24 17:49 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 1 | 730567 | MAN | EET BUF | 10/31/24 13:56 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 08:52 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 19:00 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 05:30 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:56 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:37 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:32 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:27 |

## Client Sample ID: PILE6-01-10282024

**Lab Sample ID: 480-224895-25**

**Date Collected: 10/28/24 15:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE6-01-10282024

**Lab Sample ID: 480-224895-25**

**Date Collected: 10/28/24 15:30**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 94.7**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730959 | CDC | EET BUF | 11/02/24 18:19 |
| Total/NA | Analysis | 8260C | | 1 | 730960 | CDC | EET BUF | 11/03/24 03:19 |
| Total/NA | Prep | 3550C | | | 730376 | DP | EET BUF | 10/30/24 07:13 |
| Total/NA | Analysis | 8270D | | 10 | 730587 | JMM | EET BUF | 10/31/24 18:17 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 14:16 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 09:10 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 19:18 |
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 05:46 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 17:58 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 17:59 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:39 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:34 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:27 |

## Client Sample ID: PILE6-02-10282024

**Lab Sample ID: 480-224895-26**

**Date Collected: 10/28/24 15:34**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

## Client Sample ID: PILE6-02-10282024

**Lab Sample ID: 480-224895-26**

**Date Collected: 10/28/24 15:34**
**Matrix: Solid**
**Date Received: 10/29/24 16:51**
**Percent Solids: 91.8**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730959 | CDC | EET BUF | 11/02/24 18:19 |
| Total/NA | Analysis | 8260C | | 1 | 730960 | CDC | EET BUF | 11/03/24 03:46 |
| Total/NA | Prep | 3550C | | | 730376 | DP | EET BUF | 10/30/24 09:12 |
| Total/NA | Analysis | 8270D | | 5 | 730587 | JMM | EET BUF | 10/31/24 18:44 |
| Total/NA | Prep | 3550C | | | 730372 | DP | EET BUF | 10/30/24 07:05 |
| Total/NA | Analysis | 8081B | | 20 | 730567 | MAN | EET BUF | 10/31/24 14:35 |
| Total/NA | Prep | 3550C | | | 730360 | SJM | EET BUF | 10/29/24 18:14 |
| Total/NA | Analysis | 8082A | | 1 | 730459 | W1T | EET BUF | 10/31/24 09:28 |
| Total/NA | Prep | 8151A | | | 730561 | SJM | EET BUF | 10/30/24 17:37 |
| Total/NA | Analysis | 8151A | | 1 | 730835 | MAN | EET BUF | 11/01/24 14:23 |

**Client Sample ID: PILE6-02-10282024** — **Lab Sample ID: 480-224895-26**
**Date Collected: 10/28/24 15:34** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 91.8**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 1633 Shake | | | 633477 | JVB4 | EET CLE | 11/01/24 08:56 |
| Total/NA | Analysis | Draft-3 1633 | | 1 | 633666 | DSH | EET CLE | 11/03/24 06:03 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 730572 | BMB | EET BUF | 10/30/24 18:00 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 5 | 730774 | BMB | EET BUF | 10/31/24 18:01 |
| Total/NA | Prep | 3050B | | | 730281 | ET | EET BUF | 10/29/24 14:46 |
| Total/NA | Analysis | 6010C | | 1 | 731091 | BMB | EET BUF | 11/04/24 11:47 |
| Total/NA | Prep | 7471B | | | 730595 | ESB | EET BUF | 10/31/24 09:44 |
| Total/NA | Analysis | 7471B | | 1 | 730681 | ESB | EET BUF | 10/31/24 13:35 |
| Total/NA | Prep | 9012B | | | 730702 | AM | EET BUF | 10/31/24 14:10 |
| Total/NA | Analysis | 9012B | | 1 | 730810 | AM | EET BUF | 10/31/24 18:30 |

**Client Sample ID: PILE6-03-10282024** — **Lab Sample ID: 480-224895-27**
**Date Collected: 10/28/24 15:40** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE6-03-10282024** — **Lab Sample ID: 480-224895-27**
**Date Collected: 10/28/24 15:40** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 97.0**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_H | | | 730798 | ZN | EET BUF | 11/01/24 09:05 |
| Total/NA | Analysis | 8260C | | 2 | 730795 | ZN | EET BUF | 11/01/24 13:00 |

**Client Sample ID: PILE6-04-10282024** — **Lab Sample ID: 480-224895-28**
**Date Collected: 10/28/24 15:45** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE6-04-10282024** — **Lab Sample ID: 480-224895-28**
**Date Collected: 10/28/24 15:45** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 90.3**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730999 | CDC | EET BUF | 11/03/24 16:37 |
| Total/NA | Analysis | 8260C | | 1 | 731001 | CDC | EET BUF | 11/03/24 20:55 |

# Lab Chronicle

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

**Client Sample ID: PILE6-05-10282024** — **Lab Sample ID: 480-224895-29**
**Date Collected: 10/28/24 15:50** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE6-05-10282024** — **Lab Sample ID: 480-224895-29**
**Date Collected: 10/28/24 15:50** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 95.1**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_H | | | 730798 | ZN | EET BUF | 11/01/24 09:05 |
| Total/NA | Analysis | 8260C | | 2 | 730795 | ZN | EET BUF | 11/01/24 13:23 |

**Client Sample ID: PILE6-06-10282024** — **Lab Sample ID: 480-224895-30**
**Date Collected: 10/28/24 15:55** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE6-06-10282024** — **Lab Sample ID: 480-224895-30**
**Date Collected: 10/28/24 15:55** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 93.9**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730959 | CDC | EET BUF | 11/02/24 18:19 |
| Total/NA | Analysis | 8260C | | 1 | 730960 | CDC | EET BUF | 11/03/24 04:40 |

**Client Sample ID: PILE6-07-10282024** — **Lab Sample ID: 480-224895-31**
**Date Collected: 10/28/24 16:00** — **Matrix: Solid**
**Date Received: 10/29/24 16:51**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | Moisture | | 1 | 730271 | VXF | EET BUF | 10/29/24 12:44 |

**Client Sample ID: PILE6-07-10282024** — **Lab Sample ID: 480-224895-31**
**Date Collected: 10/28/24 16:00** — **Matrix: Solid**
**Date Received: 10/29/24 16:51** — **Percent Solids: 94.6**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035A_L | | | 730959 | CDC | EET BUF | 11/02/24 18:19 |
| Total/NA | Analysis | 8260C | | 1 | 730960 | CDC | EET BUF | 11/03/24 05:07 |

**Laboratory References:**

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

# Accreditation/Certification Summary

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

## Laboratory: Eurofins Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| New York | NELAP | 10026 | 03-31-25 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 8151A | 8151A | Solid | Picloram |
| Moisture | | Solid | Percent Moisture |
| Moisture | | Solid | Percent Solids |

## Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| California | State | 2927 | 02-28-25 |
| Connecticut | State | PH-0806 | 12-31-26 |
| Georgia | State | 4062 | 02-27-25 |
| Illinois | NELAP | 200004 | 08-31-25 |
| Iowa | State | 421 | 06-01-25 |
| Kentucky (UST) | State | 112225 | 02-27-25 |
| Kentucky (WW) | State | KY98016 | 12-30-24 |
| Minnesota | NELAP | 039-999-348 | 12-31-24 |
| New Hampshire | NELAP | 225024 | 09-30-25 |
| New Jersey | NELAP | OH001 | 07-03-25 |
| New York | NELAP | 10975 | 04-02-25 |
| Ohio VAP | State | ORELAP 4062 | 02-27-25 |
| Oregon | NELAP | 4062 | 02-27-25 |
| Pennsylvania | NELAP | 68-00340 | 08-31-25 |
| Texas | NELAP | T104704517-22-19 | 08-31-25 |
| USDA | US Federal Programs | P330-18-00281 | 01-05-27 |
| Virginia | NELAP | 460175 | 09-14-25 |
| West Virginia DEP | State | 210 | 12-31-24 |

# Method Summary

Client: Inventum Engineering LLC
Job ID: 480-224895-1
Project/Site: Bulk Soil/Concrete Analysis

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260C | Volatile Organic Compounds by GC/MS | SW846 | EET BUF |
| 8270D | Semivolatile Organic Compounds (GC/MS) | SW846 | EET BUF |
| 8081B | Organochlorine Pesticides (GC) | SW846 | EET BUF |
| 8082A | Polychlorinated Biphenyls (PCBs) by Gas Chromatography | SW846 | EET BUF |
| 8151A | Herbicides (GC) | SW846 | EET BUF |
| Draft-3 1633 | Per- and Polyfluoroalkyl Substances by LC/MS/MS | EPA | EET CLE |
| 6010C | Metals (ICP) | SW846 | EET BUF |
| 7471B | Mercury (CVAA) | SW846 | EET BUF |
| 9012B | Cyanide, Total andor Amenable | SW846 | EET BUF |
| Moisture | Percent Moisture | EPA | EET BUF |
| 1633 Shake | Shake Extraction with SPE | EPA | EET CLE |
| 3050B | Preparation, Metals | SW846 | EET BUF |
| 3550C | Ultrasonic Extraction | SW846 | EET BUF |
| 5035A_H | Closed System Purge and Trap | SW846 | EET BUF |
| 5035A_L | Closed System Purge and Trap | SW846 | EET BUF |
| 7471B | Preparation, Mercury | SW846 | EET BUF |
| 8151A | Extraction (Herbicides) | SW846 | EET BUF |
| 9012B | Cyanide, Total and/or Amenable, Distillation | SW846 | EET BUF |

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

# Sample Summary

Client: Inventum Engineering LLC
Project/Site: Bulk Soil/Concrete Analysis

Job ID: 480-224895-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 480-224895-1 | PILE1-01-10282024 | Solid | 10/28/24 13:30 | 10/29/24 16:51 |
| 480-224895-2 | PILE1-02-10282024 | Solid | 10/28/24 13:35 | 10/29/24 16:51 |
| 480-224895-3 | PILE1-03-10282024 | Solid | 10/28/24 13:40 | 10/29/24 16:51 |
| 480-224895-4 | PILE1-04-10282024 | Solid | 10/28/24 13:45 | 10/29/24 16:51 |
| 480-224895-5 | PILE1-05-10282024 | Solid | 10/28/24 13:50 | 10/29/24 16:51 |
| 480-224895-6 | PILE1-06-10282024 | Solid | 10/28/24 13:55 | 10/29/24 16:51 |
| 480-224895-7 | PILE2-01-10282024 | Solid | 10/28/24 14:00 | 10/29/24 16:51 |
| 480-224895-8 | PILE2-02-10282024 | Solid | 10/28/24 14:05 | 10/29/24 16:51 |
| 480-224895-9 | PILE2-03-10282024 | Solid | 10/28/24 14:10 | 10/29/24 16:51 |
| 480-224895-10 | PILE2-04-10282024 | Solid | 10/28/24 14:15 | 10/29/24 16:51 |
| 480-224895-11 | PILE3-01-10282024 | Solid | 10/28/24 14:20 | 10/29/24 16:51 |
| 480-224895-12 | PILE3-02-10282024 | Solid | 10/28/24 14:25 | 10/29/24 16:51 |
| 480-224895-13 | PILE3-03-10282024 | Solid | 10/28/24 14:30 | 10/29/24 16:51 |
| 480-224895-14 | PILE3-04-10282024 | Solid | 10/28/24 14:35 | 10/29/24 16:51 |
| 480-224895-15 | PILE3-05-10282024 | Solid | 10/28/24 14:40 | 10/29/24 16:51 |
| 480-224895-16 | PILE3-06-10282024 | Solid | 10/28/24 14:45 | 10/29/24 16:51 |
| 480-224895-17 | PILE3-07-10282024 | Solid | 10/28/24 14:50 | 10/29/24 16:51 |
| 480-224895-18 | PILE4-01-10282024 | Solid | 10/28/24 14:55 | 10/29/24 16:51 |
| 480-224895-19 | PILE4-02-10282024 | Solid | 10/28/24 15:00 | 10/29/24 16:51 |
| 480-224895-20 | PILE4-03-10282024 | Solid | 10/28/24 15:05 | 10/29/24 16:51 |
| 480-224895-21 | PILE4-04-10282024 | Solid | 10/28/24 15:10 | 10/29/24 16:51 |
| 480-224895-22 | PILE4-05-10282024 | Solid | 10/28/24 15:15 | 10/29/24 16:51 |
| 480-224895-23 | PILE4-06-10282024 | Solid | 10/28/24 15:20 | 10/29/24 16:51 |
| 480-224895-24 | PILE5-01-10282024 | Solid | 10/28/24 15:25 | 10/29/24 16:51 |
| 480-224895-25 | PILE6-01-10282024 | Solid | 10/28/24 15:30 | 10/29/24 16:51 |
| 480-224895-26 | PILE6-02-10282024 | Solid | 10/28/24 15:34 | 10/29/24 16:51 |
| 480-224895-27 | PILE6-03-10282024 | Solid | 10/28/24 15:40 | 10/29/24 16:51 |
| 480-224895-28 | PILE6-04-10282024 | Solid | 10/28/24 15:45 | 10/29/24 16:51 |
| 480-224895-29 | PILE6-05-10282024 | Solid | 10/28/24 15:50 | 10/29/24 16:51 |
| 480-224895-30 | PILE6-06-10282024 | Solid | 10/28/24 15:55 | 10/29/24 16:51 |
| 480-224895-31 | PILE6-07-10282024 | Solid | 10/28/24 16:00 | 10/29/24 16:51 |

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

# Chain of Custody Record

eurofins | Environment Testing

| Client Information | Sampler: PZ/CB | Lab PM: Fischer, Brian J | Carrier Tracking No(s): | COC No: 480-200511-41335.4 |
|---|---|---|---|---|
| Client Contact: Mr. Peter Zaffram | Phone: (716)553-5129 | E-Mail: Brian.Fischer@et.eurofinsus.com | State of Origin: NY | Page: Page 1 of 3 |
| Company: Inventum Engineering LLC | PWSID: | | | Job #: |
| Address: 441 Carlisle Drive Suite C | Due Date Requested: | Analysis Requested | | |
| City: Herndon | TAT Requested (days): Standard | | | Preservation Codes: N - None |
| State, Zip: VA, 20170 | Compliance Project: Δ Yes Δ No | | | |
| Phone: | PO #: Purchase Order not required | | | |
| Email: peter.zaffram@inventumeng.com | WO #: | | | 480-224895 Chain of Custody |
| Project Name: Bulk Soil Analysis | Project #: 48028162 | | | |
| Site: 3821 River Road | SSOW#: | | | |

james.edwards@inventumeng.com

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - TCL list vocs | PFAS | 6010C, 7471B, 9012B, | 8081B, 8082A, 8151A, 8270D | Total Numb | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation Code: | | | | | | | N | N | N | N | | |
| PILE1-01-10282024 | 10/28/24 | 13:30 | G | Solid | | | X | X | X | X | 5 | |
| PILE1-02-10282024 | | 13:35 | G | Solid | | | X | X | X | X | 5 | |
| PILE1-03-10282024 | | 13:40 | G | Solid | | | X | | | | 1 | |
| PILE1-04-10282024 | | 13:45 | G | Solid | | | X | | | | 1 | |
| PILE1-05-10282024 | | 13:50 | G | Solid | | | X | | | | 1 | |
| ~~PILE~~ PILE1-06-10282024 | | 13:55 | G | Solid | | | X | | | | 1 | |
| PILE2-01-10282024 | | 14:00 | G | Solid | | | X | X | X | X | 5 | |
| PILE2-02-10282024 | | 14:05 | G | Solid | | | X | | | | 1 | |
| PILE2-03-10282024 | | 14:10 | G | | | | X | | | | 1 | |
| PILE2-04-10282024 | | 14:15 | G | | | | X | | | | 1 | |
| PILE3-01-10282024 | ↓ | 14:20 | G | | | | X | X | X | X | 5 | |

**Possible Hazard Identification**
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) NYSDEC CATB / EQuIS 1

Special Instructions/QC Requirements:

| | | | | | | |
|---|---|---|---|---|---|---|
| Empty Kit Relinquished by: | | Date: | Time: | Method of Shipment: | | |
| Relinquished by: | Date/Time: 10/28/2024 1650 | Company | Received by: | Date/Time: 10/28/24 1650 | Company EETNJ3 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company | |

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.8 4.4 IR#SC1LE

Ver: 10/10/2024

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

# Chain of Custody Record

eurofins | Environment Testing

| Client Information | Sampler: PZ/CB | Lab PM: Fischer, Brian J | Carrier Tracking No(s): | COC No: 480-200511-41335.3 |
|---|---|---|---|---|
| Client Contact: Mr. Peter Zaffram | Phone: (716) 553-5129 | E-Mail: Brian.Fischer@et.eurofinsus.com | State of Origin: NY | Page: ~~Page 2 of 4~~ 2 of 3 |
| Company: Inventum Engineering LLC | PWSID: | | | Job #: |
| Address: 441 Carlisle Drive Suite C | Due Date Requested: | | | |
| City: Herndon | TAT Requested (days): Standard | | | |
| State, Zip: VA, 20170 | Compliance Project: Δ Yes Δ No | | | |
| Phone: | PO #: Purchase Order not required | | | |
| Email: peter.zaffram@inventumeng.com | WO #: | | | |
| Project Name: Bulk Soil Analysis | Project #: 48028162 | | | |
| Site: 3821 River Road | SSOW#: | | | |

james.edwards@inventumeng.com

**Analysis Requested**

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - TCL list vocs | PFAS | 6010C, 7471B, 9012B | 8081B, 8082A, 8151A, 8270D | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation Code: | | | | | | | N | N | N | N | | |
| ~~PILE3~~ PILE3-02-10282024 | 10/28/24 | 14:25 | G | Solid | | | X | X | X | X | 5 | |
| PILE3-03-10282024 | | 14:30 | G | Solid | | | X | | | | 1 | |
| PILE3-04-10282024 | | 14:35 | G | Solid | | | X | | | | 1 | |
| PILE3-05-10282024 | | 14:40 | G | Solid | | | X | | | | 1 | |
| PILE3-06-10282024 | | 14:45 | G | Solid | | | X | | | | 1 | |
| PILE3-07-10282024 | | 14:50 | G | Solid | | | X | | | | 1 | |
| PILE4-01-10282024 | | 14:55 | G | Solid | | | X | X | X | X | 5 | |
| PILE4-02-10282024 | | 15:00 | G | Solid | | | X | X | X | X | 5 | |
| PILE4-03-10282024 | | 15:05 | G | Solid | | | X | | | | 1 | |
| PILE4-04-10282024 | | 15:10 | G | Solid | | | X | | | | 1 | |
| PILE4-05-10282024 | | 15:15 | G | Solid | | | X | | | | 1 | |

**Possible Hazard Identification**
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) NYSDEC CATB/EQUIS 1

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| | | 10/28/24 1650 | | | 10/28/24 1651 | TNB |
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

# Chain of Custody Record

eurofins | Environment Testing

| Client Information | Sampler: PZ/CB | Lab PM: Fischer, Brian J | Carrier Tracking No(s): | COC No: 480-200511-41335.1 |
|---|---|---|---|---|
| Client Contact: Mr. Peter Zaffram | Phone: (716) 553-5129 | E-Mail: Brian.Fischer@et.eurofinsus.com | State of Origin: NY | Page: Page 2 of 4 → 3 of 3 |
| Company: Inventum Engineering LLC | PWSID: | | | Job #: |
| Address: 441 Carlisle Drive Suite C | Due Date Requested: | | | |
| City: Herndon | TAT Requested (days): standard | | | |
| State, Zip: VA, 20170 | Compliance Project: Δ Yes Δ No | | | |
| Phone: | PO #: Purchase Order not required | | | |
| Email: peter.zaffram@inventumeng.com | WO #: | | | |
| Project Name: Bulk Soil Analysis | Project #: 48028162 | | | |
| Site: 3821 River Road | SSOW#: | | | |

James.edwards@inventumeng.com

Analysis Requested

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - TCL list vocs | [redacted] PFAS | 6010C, 7471B, 9012B, [redacted] | 8081B, 8082A, 8151A, 8270D | Total Number of containers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation Code: | | | | | | | N | N | N | N | |
| PILE4-06-10282024 | 10/28/24 | 15:20 | G | Solid | | | X | | | | 1 |
| PILE5-01-10282024 | | 15:25 | G | Solid | | | X | X | X | X | 5 |
| PILE6-01-10[redacted]2820 24 | | 15:30 | G | Solid | | | X | X | X | X | 5 |
| PILE6-02-10282024 | | 15:35 | G | Solid | | | X | X | X | X | 5 |
| PILE6-03-10282024 | | 15:40 | G | Solid | | | X | | | | 1 |
| PILE6-04-10282024 | | 15:45 | G | Solid | | | X | | | | 1 |
| PILE6-05-10282024 | | 15:50 | G | Solid | | | X | | | | 1 |
| PILE[redacted]6-06-10282024 | | 15:55 | G | Solid | | | X | | | | 1 |
| PILE6-07-10282024 | | 16:00 | G | Solid | | | X | | | | 1 |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |

Preservation Codes: N - None

Other:

Special Instructions/Note:

**Possible Hazard Identification**
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) NYSDEC CAT B/EQUIS 1

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| | [signature] | 10/28/24 1650 | | [signature] | 10/28/24 1651 | BRINB |
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: IR S 19.8 NO ICE #IR SC

Ver: 10/10/2024

**Eurofins Buffalo**
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691 7991

# Chain of Custody Record

eurofins
Environment Testing

| Client Information (Sub Contract Lab) | Sampler: N/A | Lab PM: Fischer Brian J | Carrier Tracking No(s): N/A | COC No: 480-90115.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: N/A | E-Mail: Brian.Fischer@et.eurofinsus.com | State of Origin: New York | Page: Page 1 of 2 |
| Company: Eurofins Environment Testing North Centr | | Accreditations Required (See note): NELAP New York | | Job #: 480-224895-1 |
| Address: 180 S. Van Buren Avenue, | Due Date Requested: 11/11/2024 | | | Preservation Codes: |
| City: Barberton | TAT Requested (days): N/A | | | |
| State, Zip: OH, 44203 | | | | |
| Phone: 330-497-9396(Tel) 330-497-0772(Fax) | PO #: N/A | | | |
| Email: N/A | WO #: N/A | | | |
| Project Name: Bulk Soil/Concrete Analysis | Project #: 48028162 | | | Other: N/A |
| Site: N/A | SSOW#: N/A | | | 84-30 |

| Sample Identification Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=wastefoil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 1633/1633_Shake 1633 Standard List of 40 | Total Number of Containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | |
| PILE1-01 10282024 (480-224895-1) | 10/28/24 | 13:30 Eastern | G | Solid | | | X | 1 | |
| PILE1-02-10282024 (480-224895-2) | 10/28/24 | 13:35 Eastern | G | Solid | | | X | 1 | |
| PILE2-01-10282024 (480-224895-7) | 10/28/24 | 14:00 Eastern | G | Solid | | | X | 1 | |
| PILE3-01-10282024 (480-224895-11) | 10/28/24 | 14:20 Eastern | G | Solid | | | X | 1 | |
| PILE3-02-10282024 (480-224895-12) | 10/28/24 | 14:25 Eastern | G | Solid | | | X | 1 | |
| PILE4-01-10282024 (480-224895-18) | 10/28/24 | 14:55 Eastern | G | Solid | | | X | 1 | |
| PILE4-02-10282024 (480-224895-19) | 10/28/24 | 15:00 Eastern | G | Solid | | | X | 1 | |
| PILE5-01 10282024 (480-224895-24) | 10/28/24 | 15:25 Eastern | G | Solid | | | X | 1 | |
| PILE6-01 10282024 (480-224895-25) | 10/28/24 | 15:30 Eastern | G | Solid | | | X | 1 | |

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northeast, LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2 | Special Instructions/QC Requirements. |
| Empty Kit Relinquished by: | Date: Time: Method of Shipment: |

| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|
| Relinquished by: | 10/29/24 1500 | TAS | MALISSA LOAR | 10-30-24 9:45 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: ∆ Yes ∆ No | Custody Seal No. | Cooler Temperature(s) °C and Other Remarks: |
|---|---|---|

**Eurofins Buffalo**
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691 7991

# Chain of Custody Record

eurofins
Environment Testing

| Client Information (Sub Contract Lab) | Sampler: N/A | Lab PM: Fischer Brian J | Carrier Tracking No(s): N/A | COC No: 480-90115.2 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: N/A | E-Mail: Brian.Fischer@et.eurofinsus.com | State of Origin: New York | Page: Page 2 of 2 |
| Company: Eurofins Environment Testing North Centr | | Accreditations Required (See note): NELAP New York | | Job #: 480-224895-1 |
| Address: 180 S. Van Buren Avenue, | Due Date Requested: 11/11/2024 | | | Preservation Codes: |
| City: Barberton | TAT Requested (days): N/A | | | |
| State, Zip: OH, 44203 | | | | |
| Phone: 330-497-9396(Tel) 330-497-0772(Fax) | PO #: N/A | | | |
| Email: N/A | WO #: N/A | | | |
| Project Name: Bulk Soil/Concrete Analysis | Project #: 48028162 | | | |
| Site: N/A | SSOW#: N/A | | | Other: N/A |

| Sample Identification Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 1633/1633_Shake 1633 Standard List of 40 | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | |
| PILE6-02-10282024 (480-224895-26) | 10/28/24 | 15:34 Eastern | G | Solid | | | X | 1 | |

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Northeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Northeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Northeast, LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested: I II, III IV Other (specify) Primary Deliverable Rank: 2 | Special Instructions/QC Requirements: |

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| | Relinquished by: | Date/Time: | Company | Received | Date/Time: | Company |
|---|---|---|---|---|---|---|
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No. | Cooler Temperature(s) °C and Other Remarks: |
|---|---|---|

**Eurofins – Cleveland Sample Receipt Form/Narrative** **Login # :** _____
**Barberton Facility**

Client Cle Buffalo Site Name _____ Cooler unpacked by: [illegible]

Cooler Received on 10-30-24 Opened on 10-30-24

FedEx: 1st Grd Expl UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

**Receipt After-hours** Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 8C Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 2.2 °C Corrected Cooler Temp. 2.3 °C

| | | |
|---|---|---|
| 2. | Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ | Yes No |
| | -Were the seals on the outside of the cooler(s) signed & dated? | Yes No NA |
| | -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? | Yes No |
| | -Were tamper/custody seals intact and uncompromised? | Yes No NA |
| 3 | Shippers' packing slip attached to the cooler(s)? | Yes No |
| 4 | Did custody papers accompany the sample(s)? | Yes No |
| 5 | Were the custody papers relinquished & signed in the appropriate place? | Yes No |
| 6 | Was/were the person(s) who collected the samples clearly identified on the COC? | Yes No |
| 7 | Did all bottles arrive in good condition (Unbroken)? | Yes No |
| 8 | Could all bottle labels (ID/Date/Time) be reconciled with the COC? | Yes No |
| 9 | For each sample, does the COC specify preservatives (Y/N)# of containers (Y/N), and sample type of grab/comp(Y/N)? | |
| 10 | Were correct bottle(s) used for the test(s) indicated? | Yes No |
| 11 | Sufficient quantity received to perform indicated analyses? | Yes No |
| 12 | Are these work share samples and all listed on the COC? | Yes No |
| | If yes, Questions 13-17 have been checked at the originating laboratory | |
| 13 | Were all preserved sample(s) at the correct pH upon receipt? | Yes No NA pH Strip Lot# HC339814 |
| 14 | Were VOAs on the COC? | Yes No |
| 15 | Were air bubbles >6 mm in any VOA vials? ● ← Larger than this | Yes No NA |
| 16 | Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ | Yes No |
| 17 | Was a LL Hg or Me Hg trip blank present? _____ | Yes No |

***Tests that are not checked for pH by Receiving.***

***VOAs***
***Oil and Grease***
***TOC***

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

**18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES** ☐ additional next page

Samples processed 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 - Date/Time VOAs Frozen. _____

SAMPLE CONTROL
EUROFINS ENVIRONMENT TESTING
10 HAZELWOOD DRIVE

BUFFALO, NY 142282223
UNITED STATES US

ACTWGT: 34.45 LB
CAD 0759273/CAFE3855
DIMS 19x19x11 IN

BILL RECIPIENT

TO SAMPLE RECEIPT
EUROFINS CLEVELAND
180 S VAN BUREN AVE

BARBERTON OH 442033543
(330) 497-9396
REF. CLEVELAND

FedEx Express

TRK# 0201 7463 0660 3183

WED - 30 OCT 10:30A
PRIORITY OVERNIGHT

NX CAKA

44203
OH-US CLE

Part # 156945-MTW EXP 06/25

11/5/2024

# Login Sample Receipt Checklist

Client: Inventum Engineering LLC

Job Number: 480-224895-1

**Login Number: 224895**

**List Source: Eurofins Buffalo**

**List Number: 1**

**Creator: Kolb, Chris M**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity either was not measured or, if measured, is at or below background | True | |
| The cooler's custody seal, if present, 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. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | |
| Samples are received within Holding Time (Excluding tests with immediate HTs).. | 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 | |
| Sample Preservation Verified | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | True | |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | inventum |
| Sampling Company provided. | True | |
| Samples received within 48 hours of sampling. | True | |
| Samples requiring field filtration have been filtered in the field. | True | |
| Chlorine Residual checked. | N/A | |

Appendix D – Community Air Monitoring Plan

INVENTUM ENGINEERING, P.C.

# Community Air Monitoring Plan

3821 River Road, Inc.

Brownfield Cleanup Program (BCP) Site

NYSDEC Site #C915003

3821 River Road

Tonawanda, NY 14150

July 14, 2023

441 CARLISLE DRIVE
SUITE C
HERNDON, VA 20170
WWW.INVENTUMENG.COM



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3 VOC Monitoring, Response Levels, and Actions ..... 2
4 Particulate Monitoring, Response Levels, and Actions ..... 3
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# 1 Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required.

- *The 3821 River Road, Inc. (3821 River Road) Site will have a perimeter air monitoring program before and during the Remedial Investigation (RI). If there are detections at the property line, additional monitoring requirements will be considered*[1].
- *Three (3) perimeter air monitoring station units (1 Upwind and 2 Downwind) will be mobile and moved as the work area(s) change at the 3821 River Road BCP Site. Example monitoring locations are shown on Figure 10 provided in Appendix A-2.*

Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

- *There are no sensitive receptors on the property. The closest residence is more than 0.25 miles away from the property boundary.*

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

# 2 Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

[1] The text in *italic font* are comments inserted by 3821 River Road, Inc. in addition to the standard CAMP Template.

- *VOC and particulate monitoring will be incorporated into the RI and Interim Remedial Measure (IRM) activities.*

**Continuous monitoring** will be required for all ground intrusive activities during the demolition of contaminated or potentially contaminated structures, installing groundwater conveyance trenches, operation of a groundwater treatment system when housed indoors, and during the decontamination and deconstruction of Above Ground Storage Tanks (ASTs). Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells. Decontamination and deconstruction of ASTs include, but are not limited to, removal of residual products, decontamination of ASTs and ancillary piping and equipment, and emptying and decontamination of secondary containment structures.

**Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

- *During sampling periodic monitoring will be implemented with hand-held instruments.*

# 3 VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

5. The NYSDEC and NYSDOH project managers for the Site will be notified within 24-hours by phone or email if there is an exceedance of the VOC action level of 25 ppm at the perimeter of the work area as described within Section 3. The notification shall include a description of the control measures implemented to prevent further exceedances.

# 4 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($mcg/m^3$ ) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $mcg/m^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $mcg/m^3$ of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for New York State (DEC and NYSDOH) and County Health personnel to review.

4. Should the action level of 150 mcg/m3 above the upwind monitoring concentration be exceeded after corrective actions are taken, work must stop and NYDEC and NYSDOH project managers for the Site must be notified within 24-hours by phone or email. The notification shall include a description of the control measures implemented to prevent further exceedances.

# Appendix A-1
# Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;

(b) Measurement Ranges: 0.001 to 400 $mg/m^3$ (1 to 400,000 :$ug/m^3$);

(c) Precision (2-sigma) at constant temperature: +/- 10 :$g/m^3$ for one second averaging; and +/- 1.5 $g/m^3$ for sixty second averaging;

(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);

(e) Resolution: 0.1% of reading or $1g/m^3$, whichever is larger;

(f) Particle Size Range of Maximum Response: 0.1-10;

(g) Total Number of Data Points in Memory: 10,000;

(h) Logged Data: Each data point with average concentration, time/date and data point number

(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;

(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;

(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;

(l) Operating Temperature: -10 to 50° C (14 to 122° F);

(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/$m^3$ (15 minutes average). While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/$m^3$, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/$m^3$ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/$m^3$ above the upwind monitoring concentration be exceeded after corrective actions are taken, work must stop and DER and DOH must be notified within one hour. The notification shall include a description of the control measures implemented to prevent further exceedances..

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential-- such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads and demolitions;

(b) Wetting equipment and excavation faces;

(c) Spraying water on buckets during excavation and dumping;

(d) Hauling materials in properly tarped or watertight containers;

(e) Restricting vehicle speeds to 10 mph;

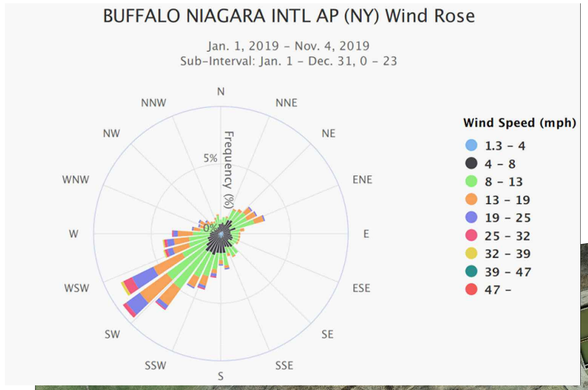
(f) Covering excavated areas and material after excavation activity ceases; and

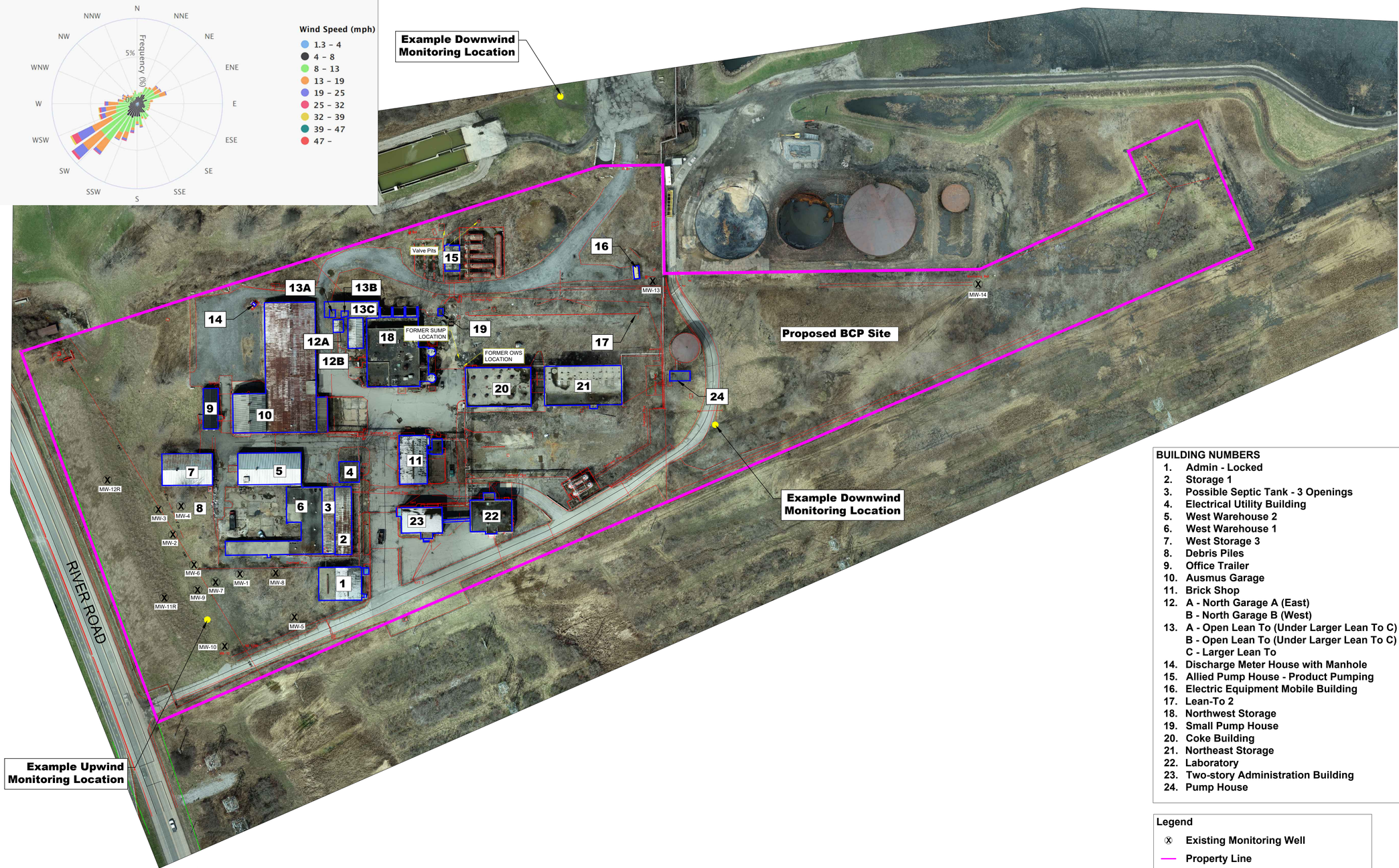
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/$m^3$ action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

# Appendix A-2
# Perimeter Air Monitoring Locations




N

**BUILDING NUMBERS**

1. Admin - Locked
2. Storage 1
3. Possible Septic Tank - 3 Openings
4. Electrical Utility Building
5. West Warehouse 2
6. West Warehouse 1
7. West Storage 3
8. Debris Piles
9. Office Trailer
10. Ausmus Garage
11. Brick Shop
12. A - North Garage A (East)
    B - North Garage B (West)
13. A - Open Lean To (Under Larger Lean To C)
    B - Open Lean To (Under Larger Lean To C)
    C - Larger Lean To
14. Discharge Meter House with Manhole
15. Allied Pump House - Product Pumping
16. Electric Equipment Mobile Building
17. Lean-To 2
18. Northwest Storage
19. Small Pump House
20. Coke Building
21. Northeast Storage
22. Laboratory
23. Two-story Administration Building
24. Pump House

**Legend**

- Existing Monitoring Well
- Property Line
- Building
- Site Features (Utilities & Structures

Note:
1. Downwind and upwind monitoring locations will be moved and relocated as necessary to account for active work areas.

References:
1. Parsons, 2021, Tonawanda Plastics Site NYSDEC ID 915003 Draft Site Investigation Summary Report
2. Niagara Boundary and Mapping Services, 2022, Site Aerial of 3821 River Road Tonawanda

1" = 80'
80' 40' 0' 80'

D

| | | |
|---|---|---|
| DRAWING BY | RB | |
| CHECKED | | |
| APPROVED | | |

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# COMMUNITY AIR MONITORING PLAN (CAMP)

*3821 RIVER ROAD*
*TONAWANDA NEW YORK, 14150*
*NYSDEC BCP SITE #C915003*

**INVENTUM ENGINEERING**
441 CARLISLE DRIVE
SUITE C
HERNDON, VIRGINIA 20170
(703) 722-6049
www.InventumEng.com

FIGURE 10

DRAWING NUMBER
RI WORKPLAN

Appendix E - Historical Figure: Semet Solvay Division, Niagara River Petrochemical Plant, Underground Piping, Sheet No: 1, 60053. T-M-41-N, August 8, 1953

14327-72

WAX PRODUCTION BLDG.

COMPRESSOR BLDG.

PUMP HOUSE

BATTERY LIMIT

STORAGE & MACHINE SHOP

SUBSTATION

SEPTIC TANK DRW. 58935

OFFICE

LABORATORY

LOCKER BUILDING

CONSTRUCTION SHED

PILOT PLANT BUILDING

FUTURE BATTERY LIMITS

CURB LINE

FENCE LINE

℄ PRIVATE ROAD

PROPERTY LINE

ROCKWOOD SPRINKLER CO. CONNECT. HERE.

SECTION 23-23

SECTION 24-24

SECTION 22-22

SECTION 21-21

FOR DETAILS SEE DWG G0056

NOTE:
FOR SECTIONS 1-1 TO 20-20 SEE DWG G0056

(REV 4) MINIMUM COVER ON PIPING SHALL BE MAINTAINED AS FOLLOWS (EXCEPT AS NOTED ON PLANS OR REQUIRED BY FIELD CONDITIONS):
6" FIRE LINE : 5'-0" BELOW YARD ELEV. = ELEV. 4.00 TOP OF PIPE
20" MILL WATER LINE : 3'-9" " " " = 15.25 " " "
2" CITY WATER LINE : 3'-0" " " " = 16.00 " " "
FOR LOCATION & INVERT ELEVATIONS OF STORM SEWERS SEE DWG G0245

REFERENCE DRAWINGS

| | |
|---|---|
| UNDERGROUND DUCT SYSTEM - NEW WAX PLT. | DRW G0254 |
| ELECTRICAL DISTRIBUTION SYSTEM - NEW WAX PLT. | DRW G0061 |
| FIRE PUMP HOUSE FOUNDATION PLAN | DRW. G0337 |
| GENERAL PLAN AT GRADE | DRW. 58930 |
| SEWER & WATER PIPING | DRW. 58925 |
| ROADS PAVED AREAS & STORM SEWERS | DRW. G0243 |
| LOCKER BUILDING FOUNDATION | DRW. G0030 |
| STORE & MACH. SHOP FOUNDATION | DRW. G0031 |
| OFFICE BUILDING FOUNDATION | DRW. G0032 |
| LABORATORY BUILDING FOUNDATION | DRW. 58943 |
| UNDERGROUND PIPE DETAILS | DRW G0055 |
| DETAILS OF WATER UNDERGROUND PIPING | DRW G0056 |
| UNDERGROUND PIPING - SHEET #2 | DRW G0054 |
| FIRE PROTECTION | DWG G0050 |
| CITY WATER | DWG 58925 |
| LOCKER BUILDING PLUMBING | DWG G0041 |
| MACHINE SHOP " | " G0042 |
| OFFICE BUILDING " | " G0043 |
| LABORATORY BLDG. " | " G0044 |

LEGEND

| | |
|---|---|
| STORM SEWER | |
| SANITARY SEWER | |
| RIVER SEWER | |
| MILL WATER | |
| CITY WATER | W |
| FIRE LINE | F |
| GAS LINE | G |
| ELECTRIC CABLE | |

REV. 1 NO. 1 — 2" CITY WATER CONN ADDED — DATE 3-16-53 BY CRD O.K. LK

REV. 2 NO. — DATE — BY — O.K.

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REV. 1 NO. 1 — NOTE ADDED — DATE 8-11-52 BY R O.K. LK

REV. 6 NO. 6 — DATE 7-2-52 BY R O.K.

REV. 7 NO. 7 — MANHOLE S-7 REMOVED UNDERGROUND PIPING FROM WAX PUMP HOUSE EXCAVATED FOR NEW WAX PUMP HOUSE ADDED — DATE 1-21-52 BY CKD O.K.

REV. 8 NO. 8 — SEWER FROM WEST SIDE OF LAB. BLDG. REVISED — DATE 11-20-51 BY R O.K.

REV. 10 NO. 10 — PIPE FOR FUTURE EXTENSION REMOVED — DATE 10-31-51 BY R O.K.

REV. 31 NO. 31 — DATE 9-26-51 BY R O.K.

SEMET-SOLVAY ENGINEERING DIVISION
ALLIED CHEMICAL & DYE CORPORATION NEW YORK, N.Y.
DRAWN R.H. TRACED — CHECKED — DATE STARTED 7-29-52
SCALE 1/16 = 1'-0" — APPROVED — APPROVED
DESIGNED FOR SALE SO. C.S. 3300 SPEC. 16.21.W.111

SEMET SOLVAY DIVISION, TONAWANDA N.Y.
NIAGARA RIVER PETROCHEMICAL PLANT
UNDERGROUND PIPING - (SHEET NO. 1)
DATE DRAWING APPROVED 8-15-52
PRINTS ISSUED FOR SALE NO.
60053