Environmental Services

Engineering Services

Limited Subsurface Investigation

108 & 112 Beacon Street and
47 Oread Street
Worcester, Massachusetts

February 13, 2025

Prepared for:

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Submitted by:

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SIGNATURE OF REPORT AUTHORS

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1.0 INTRODUCTION

CMG Environmental, Inc. (CMG) conducted this Limited Subsurface Investigation (LSI) at three parcels of land identified as 108 & 112 Beacon Street and 47 Oread Street in Worcester, Massachusetts (the Site).

CMG conducted our LSI in general conformance with ASTM Standard Practice E 1903-11 ("Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process").

CMG reviewed a Phase I Environmental Site Assessment (Phase I) for 108 & 112 Beacon Street and 47 Oread Street in Worcester, Massachusetts dated November 2024.[1] This report identified the following *recognized environmental condition* (REC) as defined by ASTM:

108 BEACON STREET:

- Historical use as a fire station with 3 Fire Engine bays (circa 1890-1950), Beacon Fuel & Lumber (circa 1962-1968), and painting/restoration contractors (circa 1992-2014);
- Former No. 2 fuel oil aboveground storage tank (AST) in the basement; and
- Inactive No. 2 fuel oil AST outside the building and "crimped" supply line leading into the basement.

47 OREAD STREET:

- A fire destroyed the former residential structure, which the previous owner demolished and buried the rubble at the Site;
- Soil testing reportedly identified high levels of lead in Site soil and the owner subsequently placed a "soil cap" across the property in 2016 (CMG notes that DEP does not identify any documented releases at this property); and
- Portions of the property were used as an unpermitted dump in the 1990s-2000.

CMG reviewed the Phase I ESA report and identified the following additional RECs:

- The Site reconnaissance identified a floor drain in the basement at 108 Beacon Street that reportedly discharges outside the building. CMG considers this floor drain to be an REC because there is potential for oil from the former No. 2 fuel oil AST in the basement (or other OHM) to leak to the floor drain and discharge to the subsurface outside the building.
- A residence occupied 112 Beacon Street (circa 1890-1950). The Phase I ESA report identified no information regarding whether or not demolition debris from that building was buried at the Site as it was at 47 Oread Street. CMG considers possible buried building debris to be an REC because there is potential for OHM associated with this debris to impact the subsurface.
- A fire destroyed the building at 47 Oread Street. CMG considers the potential use of per- and polyfluoroalkylated substances (PFAS) in aqueous film-forming foam (AFFF) extinguisher at the Site to be an REC.

[1] Bowditch & Dewey provided CMG with a redacted report, which did not show who prepared it.

1.1 PURPOSE

CMG conducted this LSI to evaluate subsurface soil quality related to identified recognized environmental conditions (RECs).

1.2 SITE IDENTIFICATION

1.2.1 LOCATION

The Site is three parcels of land identified as 108 & 112 Beacon Street and 47 Oread Street, Worcester MA 01608-2216. The properties at 108 & 112 Beacon Street are contiguous parcels located on the southeasterly corner of Beacon Street and Lagrange Street. The property at 47 Oread is located on the northerly side of Oread Street.

UTM (Universal Transverse Mercator) coordinates in the approximate middle of the properties at 108 & 112 Beacon Street are 4,681,853 meters north and 268,282 meters east in Zone 19. This point is at 42º15'16.1" north latitude (42.25448 °N), 71º48'32.5" west longitude (-71.80904 °E). UTM (Universal Transverse Mercator) coordinates in the approximate middle of the property at 47 Oread Street are 4,681,857 meters north and 268,204 meters east in Zone 19. This point is at 42º15'16.2" north latitude (42.25450 °N), 71º48'36.0" west longitude (-71.80999 °E). Figure 2 (Site Plan) depicts the Site boundaries and other features.

1.2.2 LEGAL DESCRIPTION

Worcester Assessor's Map 6 identifies 108 Beacon Street as Block 28, Lot 5, which consists of 7,845 square feet (approximately 0.18 acres) of land; 112 Beacon Street as Block 28, Lot 6, which consists of 8,837 square feet (approximately 0.20 acres) of land; and 47 Oread Street as Block 28, Lot 15, which consists of 8,000 square feet (approximately 0.18 acres) of land (see Figure 2, Site Plan).

1.3 CURRENT OCCUPANTS & SITE USES

The property at 108 Beacon Street is improved with a 9,040 square foot two-story building with a full basement. A local church and community center occupy the building. The property at 112 Beacon consists of a vacant lot. The property at 47 Oread Street consists of a vacant lot with a 30×60' greenhouse structure.

1.4 CURRENT OCCUPANTS & USE OF ADJOINING PROPERTIES

CMG observed the following businesses and uses at properties adjoining the Site:

ADJOINING PROPERTY USES

ADDRESS	BUSINESS	USAGE
100 Beacon Street (northeast)	Abandoned structure	Vacant
21 Lagrange Street (north)	Warehouse	Storage
24-26 Lagrange Street (northwest)	Residential apartment building	Residential
111 Beacon Street & 43 Oread Street (west)	Residential apartment building, abandoned residence	Residential
58 Oread Street (south)	Multi-family residence	Residential
42 Lagrange Street (east)	Regional Environmental Council	Commercial

2.0 RELEVANT SITE & VICINITY HISTORY

2.1 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Ms. Samantha McDonald of Bowditch & Dewey provided CMG with a redacted copy of an ASTM Phase I for 108 & 112 Beacon Street and 47 Oread Street in Worcester, Massachusetts dated November 2024. This report identified RECs as defined by ASTM at 108 and 47 Oread Street (see Section 1.0).

2.2 SUMMARY

The following businesses occupied 108 Beacon Street: a fire Station circa 1890-1950, Beacon Fuel & Lumber circa 1962-1968, and a painting/restoration contractor circa 1992-2014. Residences previously occupied the properties at 112 Beacon Street and 47 Oread Street. The previous owner demolished the residence at 112 Beacon Street prior to 1978 and it has been vacant since that time. A fire destroyed the residence at 47 Oread Street prior to 1995 and the previous owner reportedly buried building debris on-Site. The Regional Environmental Council's Youth Grow greenhouse has occupied the property at 47 Oread Street since circa 2016.

3.0 PHYSICAL SETTING

3.1 TOPOGRAPHY

The Site is at an approximate elevation of 152 meters (498') above the North American Vertical Datum of 1988 according to the USGS Worcester North, Massachusetts topographic quadrangle (see Figure 1).

3.2 GEOLOGY

3.2.1 BEDROCK

CMG did not observe any bedrock outcrops at or in the immediate vicinity of the Site. According to the Bedrock Geological Map of Massachusetts, the Worcester formation underlies the Site. This Lower Devonian and Silurian-aged bedrock consists of carbonaceous slate and phyllite and minor metagraywacke.

CMG advanced borings to a maximum depth of 25' below grade without encountering bedrock or other refusal.

3.2.2 SOILS

According to the Soil Conservation Service "Web Soil Survey," urban land underlies the Site. This mapping unit consists of areas were impervious surfaces such as buildings, pavement, industrial parks, and railroad yards cover 75% or more of the land.

CMG observed Site soils to consist of very fine- to medium-grained sand, trace clayey silt and fine-grained gravel to a depth of 20' below grade with fine- to coarse-grained sand, trace silt, and little fine- to coarse-grained gravel from 20-25' below grade. Appendix A (Boring Logs) includes detailed subsurface soil descriptions.

3.2.3 REPORTING CATEGORY

The DEP classifies Site soils as RCS-1 per 310 CMR 40.0361(1)(a)1. because it is within 500' of residentially-zoned properties.

3.3 HYDROLOGY

3.3.1 SURFACE WATER

There is no surface water body located at the Site. The Site is in the Blackstone River Drainage Basin of the Narragansett River Drainage System, with Mill Brook located approximately 4,100' south of the Site.

Surface runoff would be to the east-southeast if unimpeded by systems such as stormwater catchbasins.

3.3.2 GROUNDWATER

CMG measured the depth to groundwater and performed surveys of monitoring well elevations at 108 & 112 Beacon Street and at 47 Oread Street on January 10, 2025. The following tables summarize these data; Figure 4 illustrates groundwater elevations and 1' contours (108 & 112 Beacon Street) and 2' contours (47 Oread Street).

GROUNDWATER ELEVATIONS (FEET) – 108 & 112 BEACON STREET

WELL ID#	WELLHEAD ELEVATION	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION
MW-1	93.59	5.89	87.70
MW-2	100.00	6.70	93.30
MW-3	98.70	9.80	88.90
MW-4	104.20	9.24	94.96
MEASUREMENTS RELATIVE TO ARBITRARY DATA OF 100.00 AT MW-2			

GROUNDWATER ELEVATIONS (FEET) – 47 OREAD STREET

WELL ID#	WELLHEAD ELEVATION	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION
MW-5	100.00	7.65	92.35
MW-6	97.93	9.93	88.00
MW-7	97.91	13.45	84.46
MEASUREMENTS RELATIVE TO ARBITRARY DATA OF 100.00 AT MW-5			

The groundwater elevation data indicate that Site groundwater flows generally easterly with a hydraulic gradient of 8.07×10^{-2} feet/foot (approximately 426 feet/mile) at the Beacon Street properties and of 1.08×10^{-1} feet/foot (approximately 794 feet/mile) at 47 Oread Street.

3.3.3 REPORTING CATEGORY

The DEP classifies Site groundwater as RCGW-2 per 310 CMR 40.0361(1)(b) because the Site is not within a designated current or potential drinking water source area.

4.0 LIMITED SUBSURFACE INVESTIGATION

4.1 SOIL BORINGS

CMG supervised advancement of 10 soil borings (designated MW-1 through MW-7, SB-1, SB-2 & SB-3) at the Site on December 11 and December 12, 2024 using direct-push (Geoprobe System™ type) equipment. Mr. Michael Coté of CMG supervised the drilling, conducted by Geosearch, Inc.

(Geosearch) of Sterling, Massachusetts. Geosearch collected continuous 5' soil samples in polyacetate liners in accordance with our standard protocols (see Appendix B).

CMG directed Geosearch to place borings MW-1 through MW-3 at 108 Beacon Street; MW-4, SB-1 & SB-2 at 112 Beacon Street; and MW-5 through MW-7 at 47 Oread Street. Figure 3 depicts our soil boring locations. We encountered refusal in borings MW-1 and MW-6 at depths of 12' and 24' below grade, respectively (see Boring Logs in Appendix A).

CMG field-screened the soil samples for total organic vapor (TOV) using a photoionization detector in accordance with our standard protocols. CMG did not observe TOV above background, see the boring logs in Appendix A.

CMG submitted 14 soil samples (identified as MW-1 [9-10'], MW-2 [12-13'], MW-3 [13-14'], MW-4 [9-10'], SB-1 [9-10'], SB-2 [9-10'], MW-5 [2-3'], MW-5 [9-10'], MW-6 [2-4'], MW-6 [19-20'], MW-7 [4-5'], MW-7 [14½-16'], SB-3 [4-5] & SB-3 [9-10']) to Phoenix Environmental Laboratories, Inc. (Phoenix) of Manchester, Connecticut for laboratory analysis of volatile organic compounds (VOCs), volatile petroleum hydrocarbon (VPH) with target VOC identifications, extractable petroleum hydrocarbon (EPH) with target polynuclear aromatic hydrocarbon (PAH) identifications and/or total metals. In addition, CMG submitted 4 soil samples (identified as MW-1 [9-10'], MW-3 [13-14'], MW-5 [9-10'] & MW-7 [14½-16']) to Alpha Analytical (Alpha) of Mansfield, Massachusetts for per- and polyfluoroalkyl substances (PFAS) analyses. CMG also submitted four soil samples (identified as SB-1 [0-5'], MW-5 [2-3'], MW-6 [2-4'] & MW-7 [4-5']) to Phoenix for asbestos analyses. Table 1 summarizes laboratory analyses and Appendix C presents Phoenix and Alpha certificates of analysis and chain of custody documentation.

Phoenix identified lead in sample MW-6 (2-4') at a concentration above its DEP RCS-1 reportable concentration. Phoenix also identified elevated arsenic concentrations in each of the soil samples tested, including concentrations above its applicable reportable concentrations in samples MW-1 (9-10'), MW-2 (12-13'), MW-3 (13-14'), MW-4 (9-10'), SB-1(9-10'), SB-2 (9-10'), MW-6 (19-20'), and SB-3 (9-10'). Soil testing also identified low concentrations of VOCs, VPH, EPH & PAHs in sample MW-7 (14½-16'), and metals in each sample tested that are below applicable reportable concentrations (see Table 1). Phoenix did not identify any other constituents above laboratory reporting limits. Testing did not identify asbestos above laboratory reporting limits in any of the samples tested. Alpha did not identify PFAS above laboratory reporting limits in any of the soil samples tested.

4.2 GROUNDWATER MONITORING WELLS

Immediately following advancement of borings MW-1 through MW-7, CMG supervised installation of a groundwater monitoring well in each (designated MW-1 through MW-7). Geosearch constructed these wells of Schedule 40, 2" diameter polyvinyl chloride casing with 0.01" slotted screen in accordance with our standard protocols. The boring logs (Appendix A) include monitoring well construction diagrams.

CMG collected groundwater samples from monitoring well MW-3 on December 24, 2024 in accordance with our standard protocols. We could not collect samples from the remaining wells because they ran dry. CMG returned to the Site on January 10, 2025 and collected groundwater samples from monitoring wells MW-1, MW-2, MW-4, MW-5 & MW-6. In addition, we collected a sample from the sump located in the basement of the building at 108 Beacon Street. We could

not collect a sample from MW-7 because it ran dry. CMG returned to the Site on January 22, 2025 to collect a groundwater sample from monitoring well MW-7. We did not observe any odors or oily sheen associated with these samples.

CMG submitted groundwater samples to Phoenix for laboratory analysis of VOCs, VPH, EPH, and dissolved RCRA8 metals. In addition, CMG submitted groundwater samples from wells MW-1, MW-4, MW-6 & MW-7 to Alpha for PFAS analyses. Tables 2 and 3 summarize laboratory analyses and Appendix C presents Phoenix and Alpha certificates of analysis and chain of custody documentation.

Phoenix identified soluble metals in groundwater samples collected from each of the wells tested and PAHs in the samples collected from the basement sump & MW-7, all at concentrations below applicable DEP RCGW-2 reportable concentrations (see Table 2). Alpha identified low concentrations of PFAS in groundwater from all the samples tested at concentrations below applicable DEP RCGW-2 reportable concentrations (see Table 3).

4.3 NOTIFICATION REQUIREMENTS

DEP regulations set forth in the Massachusetts Contingency Plan (MCP, 310 CMR 40.000), specifically 310 CMR 40.0315(2), mandate that the owner and/or operator of the Site notify DEP within 120 days of their date of knowledge of soil and groundwater exceedances (or 120 days from owner's purchase, if it has been less than 120 days since acquisition). Soil testing identified total lead in soil sample MW-6 (2-4') above applicable DEP RCS-1 reportable concentrations. Assuming owner's knowledge on February 13, 2025, then notification would be required required by June 13, 2025.

Phoenix also identified arsenic in soil samples MW-1 (9-10'), MW-2 (12-13'), MW-3 (13-14'), MW-4 (9-10'), SB-1(9-10'), SB-2 (9-10'), MW-6 (19-20'), and SB-3 (9-10') above applicable DEP RCS-1 reportable concentrations. CMG opines that elevated arsenic concentrations in soil are naturally occurring and thus exempt from DEP notification in accordance with 310 CMR 40.0317(22).

5.0 FINDINGS & CONCLUSIONS

CMG conducted our LSI in general conformance with ASTM Standard Practice E 1903-19 ("Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process").

5.1 FINDINGS

CMG supervised the advancement of 10 soil borings at the Site on December 11-12, 2024 and completed 7 boring as monitoring wells MW-1 through MW-7. We collected low-flow ground-water samples from on-Site monitoring wells on December 24, 2024, January 10 & 22, 2025. In addition, we collected one sample from the basement sump at 108 Beacon Street on January 10, 2025. CMG submitted soil and groundwater samples to Phoenix and Alpha for selected laboratory analyses. Soil testing identified total lead in soil sample MW-6 (2-4), and arsenic in soil samples MW-1 (9-10'), MW-2 (12-13'), MW-3 (13-14'), MW-4 (9-10'), SB-1(9-10'), SB-2 (9-10'), MW-6 (19-20'), and SB-3 (9-10') above applicable DEP RCS-1 reportable concentrations. CMG opines that arsenic concentrations in soil are naturally occurring and thus exempt from DEP notification in accordance with 310 CMR 40.0317(22). Groundwater testing did not identify any constituents above applicable DEP reportable concentrations.

5.2 RECOMMENDATIONS

CMG recommends DEP notification related to elevated concentration of lead in soil sample MW-6 (2-4') at 47 Oread Street. Assuming owner's knowledge on February 13, 2025, then notification would be required required by June 13, 2025. CMG recommends additional assessment to evaluate the extent of lead-contaminated soil around MW-6 and excavating impacted soil as a Release Abatement Measure (RAM) or conducting a risk assessment and possible placing an AUL on the property if feasible. CMG notes that an AUL may not be feasible for this Site since it is currently used for growing vegetables for consumption (which is normally not allowed in an AUL area). CMG further notes that since PFAS was not detected in soil we do not recommend any additional PFAS testing of soil or groundwater. In addition, we do not recommend any PFAS remediation since PFAS was non-detect in soil and well below groundwater standards in groundwater.

6.0 LIMITATIONS & CONDITIONS

6.1 METHODOLOGY

CMG Environmental, Inc. conducted this LSI of the Site in general conformance with the ASTM standard protocol E 1903-11 ("Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process").

6.2 SCOPE OF SERVICES

Mr. Steven Fischer, Executive Director of the Regional Environmental Council, Inc. authorized CMG to conduct this LSI on November 20, 2024. We performed the following scope of services between December 2024 and February 2025:

- Conducted an LSI at the Site to investigate subsurface soil and groundwater conditions at select locations throughout the Site, which entailed soil & groundwater sampling;
- Field-screened soil samples for TOV;
- Submitted select soil and groundwater samples for laboratory analysis including EPH, VPH, VOCs, metals, PFAS, and/or asbestos;
- Compared all analytical results to DEP standards set forth in the MCP; and
- Prepared this LSI report.

6.3 GENERAL LIMITATIONS

CMG prepared this Report to assess current recognized environmental conditions at the subject Site in accordance with generally accepted engineering and hydrogeologic practices. We make no other warranty, express or implied. CMG cannot provide absolute assurance that we have identified any and all recognized environmental conditions at the Site.

Where CMG included visual or other observations in this report, they represent conditions visibly and/or physically observed at the time of the inspection, or verified through interviewing or by record review, and may not be indicative of past or future Site conditions.

6.4 SPECIFIC CONDITIONS OF THE LSI REPORT

CMG based the conclusions of this report, in large part, on information provided by the client, their agents, or third parties, including state or local officials. We assume no responsibility for the accuracy and completeness of this information.

CMG's subsurface investigation included the collection and laboratory analysis of soil and groundwater samples from several locations throughout the Site. However, CMG did not intend this study to be a definitive investigation of subsurface conditions at the Site. CMG restricted the scope of services for this investigation due to time and/or cost constraints, and though we did undertake a significant amount of analytical testing, currently unrecognized subsurface conditions may exist at the Site. Increasing exploration (such as placement of test pits, completion of additional soil borings with subsequent collection of soil samples for laboratory analysis, installation of additional groundwater monitoring wells with subsequent collection of groundwater samples for laboratory analysis, and conducting surface geophysical survey techniques) may better delineate subsurface conditions.

CMG's Site inspection included observing the Site and surrounding area. However not all Site boundaries were clearly delineated, making it difficult to distinguish certain Site features from those of the surrounding area. Therefore, the location of certain Site features described in this Report and depicted on the figures may be approximate.

6.5 RELIANCE

CMG prepared this LSI for the sole use of Bowditch & Dewey, LLP, its successors and assigns in connection with assessing recognized environmental conditions at the subject Site. We do not authorize use of this information by others for any reason, except with our prior written consent.

7.0 REFERENCES

MASSACHUSETTS

Department of Environmental Protection: Massachusetts Contingency Plan regulations (310 CMR 40.0000), March 1, 2024 revision.

"Department of Environmental Protection "Guidance for Disposal Site Risk Characteristics by Support of the Massachusetts Contingency Plan" (Interim Final Policy #WSC/ORS-45-191), 1995 (updated 2002).

Geographical Information Systems: MCP Numerical Ranking System Map, obtained online from http://maps.massgis.state.ma.us/images/dep/mcp/mcp.htm in January 8, 2025.

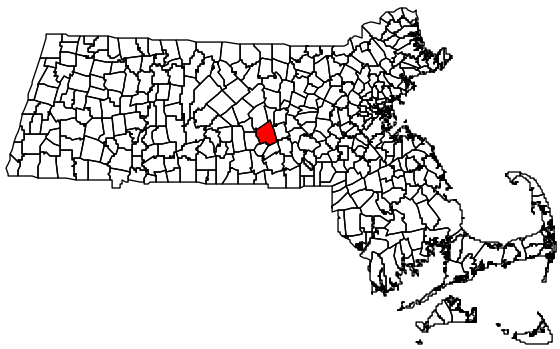
UNITED STATES

Geological Survey: "Worcester North, Massachusetts" 7.5×15-minute metric series topographic quadrangle, dated 1983.

PREVIOUS ENVIRONMENTAL REPORTS

"ASTM Phase I Environmental Site Assessment Report" for 108 & 112 Beacon Street and 47 Oread Street, Worcester, Massachusetts, dated November, 2024.

FIGURES



TOWN/CITY LOCATION – WORCESTER MA

FIGURE 1 – SITE LOCUS

108 & 112 BEACON STREET AND 47 OREAD STREET
WORCESTER, MASSACHUSETTS
CMG ID 2024-285

SCALE 1:24,000
0.5 0 0.5 Miles
N

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67 HALL ROAD, STURBRIDGE MA 01566

FIGURE 2: SITE PLAN
108 & 112 BEACON STREET AND 47 OREAD STREET
WORCESTER MA
CMG ID 2024-285

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LEGEND:

PROPERTY LINE

EDGE OF PAVEMENT

MONITORING WELL — MW-1

SOIL BORING — SB-1

BEACON STREET

#43
OREAD ST.

#114
BEACON ST.

#112
BEACON ST.

#108
BEACON ST.

#47
OREAD ST.

#42
LAGRANGE ST.

#30
LAGRANGE ST.

OREAD STREET

LAGRANGE STREET

SB-1

SB-2

SB-3

MW-1

MW-2

MW-3

MW-4

MW-5

MW-6

MW-7

SHED

GRAVEL

PAVEMENT

WALL

30 15 7.5 0 30

1"= 30'

FIGURE 3: SAMPLE LOCATIONS

108 & 112 BEACON STREET
AND 47 OREAD STREET
WORCESTER, MA
CMG ID 2024-285

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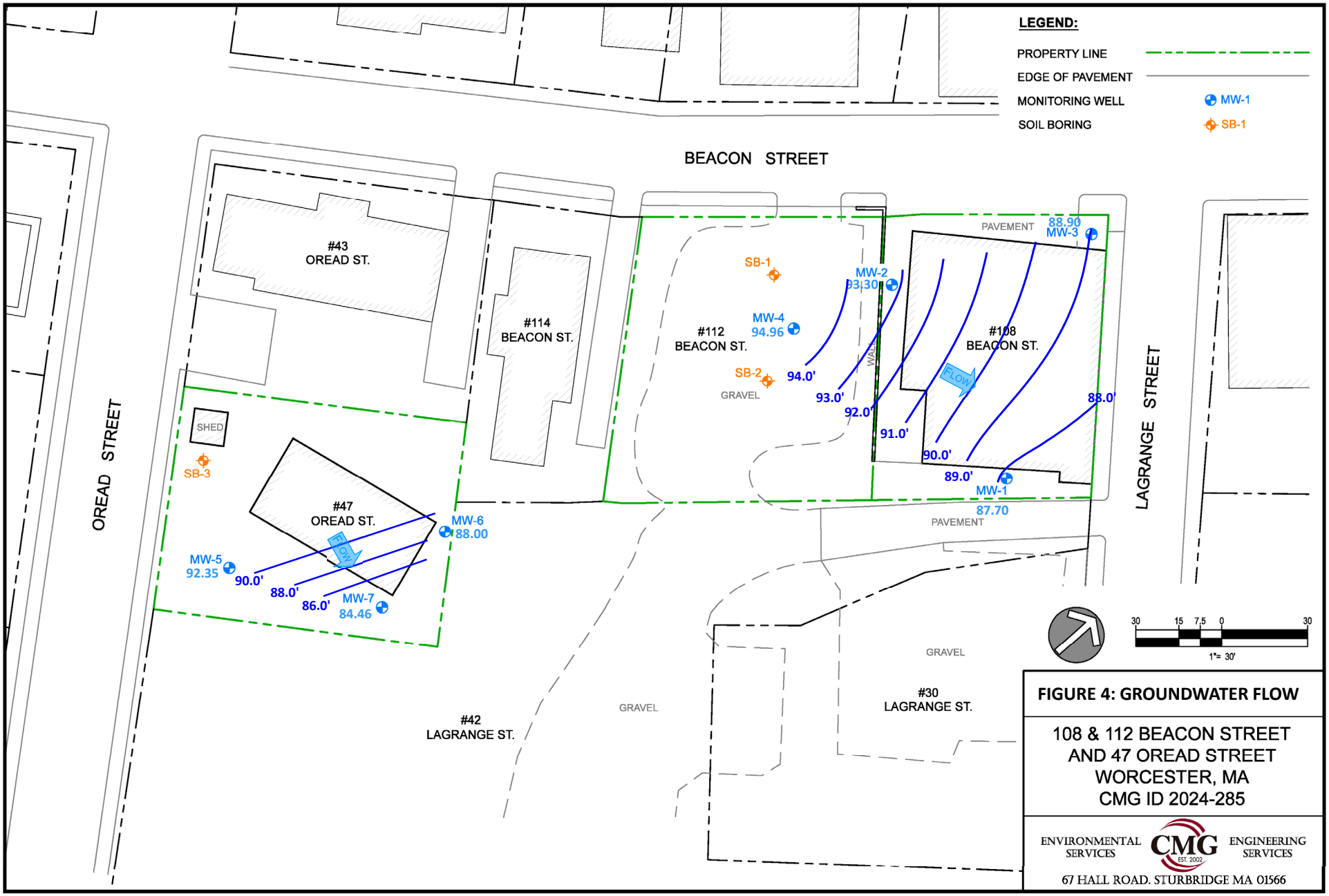

LEGEND:
PROPERTY LINE
EDGE OF PAVEMENT
MONITORING WELL
MW-1
SOIL BORING
SB-1
BEACON STREET
#43
OREAD ST.
#114
BEACON ST.
#112
BEACON ST.
#108
BEACON ST.
#47
OREAD ST.
#42
LAGRANGE ST.
#30
LAGRANGE ST.
OREAD STREET
LAGRANGE STREET
SHED
SB-3
SB-1
SB-2
MW-1
MW-2
93.30
MW-3
88.90
MW-4
94.96
MW-5
92.35
MW-6
88.00
MW-7
84.46
87.70
94.0'
93.0'
92.0'
91.0'
90.0'
89.0'
88.0'
90.0'
88.0'
86.0'
FLOW
FLOW
WALL
GRAVEL
GRAVEL
GRAVEL
PAVEMENT
PAVEMENT
30 15 7.5 0 30
1"= 30'
FIGURE 4: GROUNDWATER FLOW
108 & 112 BEACON STREET
AND 47 OREAD STREET
WORCESTER, MA
CMG ID 2024-285
ENVIRONMENTAL SERVICES
CMG
EST. 2002
ENGINEERING SERVICES
67 HALL ROAD. STURBRIDGE MA 01566

TABLES

TABLE 1

SOIL QUALITY DATA (MG/KG)

Test	Parameter	RCS-1 Reportable Concentrations	MW-1 9-10' 12/11/24	MW-2 12-13' 12/11/24	MW-3 13-14' 12/11/24	MW-4 9-10' 12/11/24	SB-1 9-10' 12/11/24	SB-2 9-10' 12/11/24	MW-5 2-3' 12/12/24	MW-5 9-10' 12/12/24	MW-6 2-4' 12/12/24	MW-6 19-20' 12/12/24	MW-7 4-5' 12/12/24	MW-7 14½-16' 12/12/24	SB-3 4-5' 12/12/24	SB-3 9-10' 12/12/24
PID	Total Organic Vapors	—	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
VOCs	*sec*-Butylbenzene	See VPH C_9-C_{10} Aromatics	*BRL<0.0061*	*BRL<0.0057*	*BRL<0.006*	*BRL<0.006*	*BRL<0.0049*	*BRL<0.0072*	NT	*BRL<0.0062*	NT	*BRL<0.0056*	NT	0.013	NT	*BRL<0.0069*
	Ethylbenzene	**40**	*BRL<0.0061*	*BRL<0.0057*	*BRL<0.006*	*BRL<0.006*	*BRL<0.0049*	*BRL<0.0072*	NT	*BRL<0.0062*	NT	*BRL<0.0056*	NT	0.12	NT	*BRL<0.0069*
	Naphthalene	**4**	*BRL<0.0061*	*BRL<0.0057*	*BRL<0.006*	*BRL<0.006*	*BRL<0.0049*	*BRL<0.0072*	NT	*BRL<0.0062*	NT	*BRL<0.0056*	NT	0.0073	NT	*BRL<0.0069*
All Other VOCs by 8260		**Varies**	*All BRL*	*All BRL*	*All BRL*	*All BRL*	*All BRL*	*All BRL*	NT	*All BRL*	NT	*All BRL*	NT	*All BRL*	NT	*All BRL*
PFAS	Total PFAS6	**NE**	*All BRL*	NT	*All BRL*	NT	NT	NT	NT	*All BRL*	NT	NT	NT	*All BRL*	NT	NT
VPH	C_5-C_8 Aliphatics	**100**	*BRL<6.2*	*BRL<6.3*	*BRL<5.7*	*BRL<6.0*	*BRL<6.5*	*BRL<5.1*	NT	*BRL<5.6*	NT	*BRL<6.3*	NT	*BRL<5.6*	NT	*BRL<5.9*
	C_9-C_{12} Aliphatics	**1,000**	*BRL<6.2*	*BRL<6.3*	*BRL<5.7*	*BRL<6.0*	*BRL<6.5*	*BRL<5.1*	NT	*BRL<5.6*	NT	*BRL<6.3*	NT	85	NT	*BRL<5.9*
	C_9-C_{10} Aromatics	**100**	*BRL<6.2*	*BRL<6.3*	*BRL<5.7*	*BRL<6.0*	*BRL<6.5*	*BRL<5.1*	NT	*BRL<5.6*	NT	*BRL<6.3*	NT	33	NT	*BRL<5.9*
EPH	C_9-C_{18} Aliphatics	**1,000**	*BRL<74*	*BRL<73*	*BRL<71*	*BRL<73*	*BRL<75*	*BRL<74*	NT	*BRL<72*	NT	*BRL<75*	NT	150	NT	*BRL<73*
	C_{19}-C_{36} Aliphatics	**3,000**	*BRL<74*	*BRL<73*	*BRL<71*	*BRL<73*	*BRL<75*	*BRL<74*	NT	*BRL<72*	NT	*BRL<75*	NT	*BRL<71*	NT	*BRL<73*
	C_{11}-C_{22} Aromatics	**1,000**	*BRL<74*	*BRL<73*	*BRL<71*	*BRL<73*	*BRL<75*	*BRL<74*	NT	*BRL<72*	NT	*BRL<75*	NT	*BRL<71*	NT	*BRL<73*
Target PAHs	Acenaphthene	**4**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Acenaphthylene	**2**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Anthracene	**1,000**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Benzo(a)anthracene	**20**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Benzo(a)pyrene	**2**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Benzo(b)fluoranthene	**20**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Benzo(g,h,i)perylene	**1,000**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Benzo(k)fluoranthene	**200**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Chrysene	**200**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Dibenzo(a,h)anthracene	**2**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Fluoranthene	**1,000**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Fluorene	**1,000**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	0.37	NT	*BRL<0.25*
	Indeno(1,2,3-cd)pyrene	**20**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	2-Methylnaphthalene	**0.7**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Naphthalene	**4**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
	Phenanthrene	**10**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	0.83	NT	*BRL<0.25*
	Pyrene	**1,000**	*BRL<0.26*	*BRL<0.25*	*BRL<0.25*	*BRL<0.26*	*BRL<0.26*	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.26*	NT	*BRL<0.25*	NT	*BRL<0.25*
Total Metals	Arsenic	**20**	26.0	21.5	28.8	34.9	26.0	23.4	NT	19.6	NT	24.6	NT	19.0	NT	25.3
	Barium	**1,000**	72.8	69.7	59.4	62.8	75.2	56.1	NT	64.7	NT	68.1	NT	74.6	NT	76.7
	Cadmium	**80**	*BRL<0.38*	*BRL<0.34*	0.39	0.43	*BRL<0.38*	0.41	NT	*BRL<0.36*	NT	*BRL<0.35*	NT	0.38	NT	0.38
	Chromium (any valence)	**100**	33.2	67.8	58.7	30.0	31.5	28.4	NT	31.3	NT	31.9	NT	38.2	NT	41.1
	Lead	**200**	8.75	8.18	7.21	9.89	8.09	8.42	31.6	8.28	1,310	7.99	156	8.4	4.66	10.3
	Mercury	**20**	*BRL<0.03*	*BRL<0.03*	*BRL<0.03*	*BRL<0.03*	*BRL<0.03*	*BRL<0.03*	NT	*BRL<0.03*	NT	*BRL<0.03*	NT	*BRL<0.03*	NT	*BRL<0.03*
	Selenium	**400**	*BRL<1.5*	*BRL<1.3*	*BRL<1.4*	*BRL<1.3*	*BRL<1.5*	*BRL<1.5*	NT	*BRL<1.4*	NT	*BRL<1.4*	NT	*BRL<1.4*	NT	*BRL<1.4*
	Silver	**100**	*BRL<0.38*	*BRL<0.34*	*BRL<0.34*	*BRL<0.33*	*BRL<0.38*	*BRL<0.39*	NT	*BRL<0.36*	NT	*BRL<0.35*	NT	*BRL<0.35*	NT	*BRL<0.35*
Other	Percent Solids	—	88%	91%	92%	89%	88%	90%	NT	91%	NT	88%	NT	93%	NT	90%

Notes *BRL = Below laboratory Reporting Limit*
NT = Not Tested (for that parameter)
M1RC = Method 1 Risk Characterization
Yellow highlight = Meets or exceeds RCS-1 standard

TABLE 2 GROUNDWATER QUALITY DATA (µG/L)

Test	Parameter	RCGW-2 Reportable Concentrations	MW-1 5.89 1/10/25	MW-2 6.70 1/10/25	MW-3 8.99 12/24/24	MW-4 9.8 1/10/25	MW-5 7.65 1/10/25	MW-6 9.93 1/10/25	Sump — 1/10/25	MW-7 12.10 1/22/25
VOCs	*sec*-Butylbenzene	**See VPH C9-C10 Aromatics**	*BRL<1.0*	*BRL<1.0*	*BRL<1.0*	*BRL<1.0*	*BRL<1.0*	*BRL<1.0*	*BRL<1.0*	2.6
All Other VOCs by 8260		**Varies**	*All BRL*	*All BRL*	*All BRL*	*All BRL*	*All BRL*	*All BRL*	*All BRL*	*All BRL*
VPH	C_5-C_8 Aliphatics	**3,000**	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*
	C_9-C_{12} Aliphatics	**5,000**	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*
	C_9-C_{10} Aromatics	**4,000**	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*	*BRL<100*
EPH	C_9-C_{18} Aliphatics	**5,000**	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<200*
	C_{19}-C_{36} Aliphatics	**50,000**	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<200*
	C_{11}-C_{22} Aromatics	**5,000**	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<190*	*BRL<200*
Target PAHs	Acenaphthene	**10,000**	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.52*	*BRL<0.47*	*BRL<0.50*	*BRL<0.57*
	Acenaphthylene	**40**	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.10*	*BRL<0.09*	*BRL<0.10*	0.12
	Anthracene	**30**	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.10*	*BRL<0.09*	*BRL<0.09*	*BRL<0.11*
	Benzo(a)anthracene	**1,000**	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.10*	*BRL<0.09*	0.17	*BRL<0.11*
	Benzo(a)pyrene	**500**	*BRL<0.19*	*BRL<0.19*	*BRL<0.19*	*BRL<0.19*	*BRL<0.20*	*BRL<0.19*	0.20	*BRL<0.20*
	Benzo(b)fluoranthene	**400**	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.10*	*BRL<0.09*	0.21	*BRL<0.11*
	Benzo(g,h,i)perylene	**20**	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	0.19	0.04
	Benzo(k)fluoranthene	**100**	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.10*	*BRL<0.09*	0.21	*BRL<0.11*
	Chrysene	**70**	*BRL<0.05*	*BRL<0.05*	*BRL<0.05*	*BRL<0.05*	*BRL<0.05*	*BRL<0.05*	0.22	0.07
	Dibenzo(a,h)anthracene	**40**	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	*BRL<0.02*	0.04	*BRL<0.02*
	Fluoranthene	**200**	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.52*	*BRL<0.47*	*BRL<0.50*	*BRL<0.57*
	Fluorene	**40**	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.10*	*BRL<0.09*	*BRL<0.10*	0.47
	Indeno(1,2,3-cd)pyrene	**100**	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.09*	*BRL<0.10*	*BRL<0.09*	0.19	*BRL<0.11*
	2-Methylnaphthalene	**2,000**	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.52*	*BRL<0.47*	*BRL<0.50*	*BRL<0.57*
	Naphthalene	**700**	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.52*	*BRL<0.47*	*BRL<0.50*	*BRL<0.57*
	Phenanthrene	**10,000**	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.47*	*BRL<0.52*	*BRL<0.47*	*BRL<0.50*	0.69
	Pyrene	**20**	*BRL<0.07*	*BRL<0.07*	*BRL<0.07*	*BRL<0.07*	*BRL<0.07*	*BRL<0.07*	0.36	0.19
Soluble Metals	Arsenic	**900**	*BRL<4*	*BRL<4*	*BRL<4*	*BRL<4*	*BRL<4*	*BRL<4*	*BRL<4*	*BRL<4*
	Barium	**50,000**	48	11	21	16	28	22	35	18
	Cadmium	**8**	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	1	*BRL<1*
	Chromium (any valence)	**300**	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	3	*BRL<1*	*BRL<1*	*BRL<1*
	Lead	**10**	*BRL<2*	*BRL<2*	*BRL<2*	*BRL<2*	*BRL<2*	*BRL<2*	*BRL<2*	*BRL<2*
	Mercury	**20**	*BRL<0.2*	*BRL<0.2*	*BRL<0.2*	*BRL<0.2*	*BRL<0.2*	*BRL<0.2*	*BRL<0.2*	*BRL<0.2*
	Selenium	**50**	*BRL<11*	*BRL<11*	*BRL<11*	*BRL<11*	*BRL<11*	*BRL<11*	*BRL<11*	*BRL<11*
	Silver	**7**	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*	*BRL<1*

Notes *BRL = Below laboratory Reporting Limit*
NT = Not Tested (for that parameter)
M1RC = Method 1 Risk Characterization
Yellow highlight = Meets or exceeds RCGW-2 standard

TABLE 3 PFAS IN GROUNDWATER (NG/L)

Test	Parameter	RCGW-2 Reportable Concentrations	MW-1 5.89 1/10/25	MW-4 9.8 1/10/25	MW-6 9.93 1/10/25	MW-7 12.10 1/22/25
Regulated PFAS	Perfluorodecanoic Acid (PFDA)	**40,000,000**	*BRL<1.78*	*0.864 (J,F)*	*BRL<1.94*	*BRL<2.13*
	Perfluoroheptanoic Acid (PFHpA)	**40,000,000**	13.7	5.83	3.29	*1.26 (J)*
	Perfluorohexanesulfonic Acid (PFHxS)	**500,000**	6.94	4.30	*2.04 (F)*	*1.27 (J)*
	Perfluorononanoic Acid (PFNA)	**40,000,000**	3.62	2.24	*BRL<1.94*	*BRL<2.13*
	Perfluorooctanesulfonic Acid (PFOS)	**500,000**	29.2	81.2	15.4	7.98
	Perfluorooctanoic Acid (PFOA)	**40,000,000**	31.0	20.0	8.65	*4.03*
	Total PFAS6	**NE**	84.5	114	27.3	12.0
	Perfluorobutanoic Acid (PFBA)	**NE**	18.4	4.25	*1.78 (J)*	*1.03 (J)*
	Perfluoropentanoic Acid (PFPeA)		26.8	9.08	3.67	*0.707 (J)*
	Perfluorobutanesulfonic Acid (PFBS)		5.53	4.12	*1.40 (J)*	*1.10 (J)*
	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluorohexanoic Acid (PFHxA)		31.4	8.99	3.45	*1.14 (J)*
	Perfluoropentanesulfonic Acid (PFPeS)		*0.729 (J)*	*0.473 (J)*	*BRL<1.94*	*BRL<2.13*
	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*1.58 (J)*
	Perfluoroheptanesulfonic (PFHpS)		*0.654 (J)*	*1.08 (J)*	*BRL<1.94*	*BRL<2.13*
	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluorononanesulfonic Acid (PFNS)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluoroundecanoic Acid (PFUnA)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluorodecanesulfonic Acid (PFDS)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluorooctanesulonamide (FOSA)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluorododecanoic Acid (PFDoA)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluorotridecanoic Acid (PFTrDA)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*
	Perfluorotetradecanoic Acid (PFTA)		*BRL<1.78*	*BRL<1.97*	*BRL<1.94*	*BRL<2.13*

Notes *BRL = Below laboratory Reporting Limit*

Yellow highlight = Meets or exceeds RCGW-1 standard

J - Used when estimating a concentration for TIC where a 1:1 response is assumed or when the result indicates the presence of a compound that meets the identification criteria, but the result is less than the quantitation limit, but greater than zero.

F - Used when the ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be anestimated maximum concentration.

APPENDIX A

BORING LOGS

ENVIRONMENTAL SERVICES

CMG EST. 2002

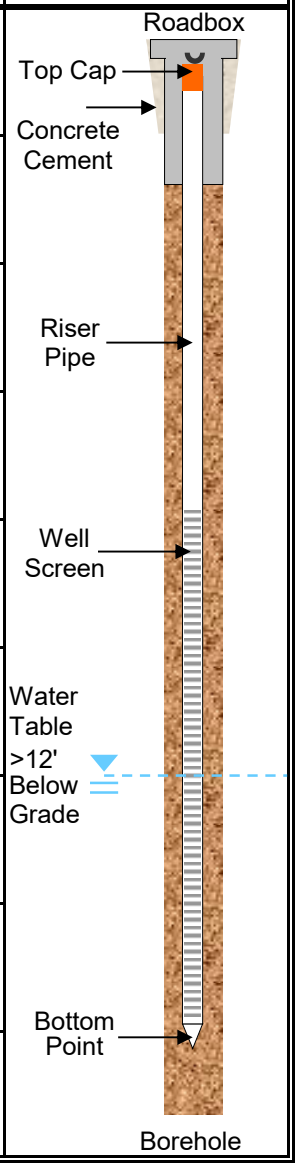
ENGINEERING SERVICES

DIRECT PUSH BORING LOG/WELL CONSTRUCTION DIAGRAM

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **MW-1**
Drilling Company: Geosearch Inc.
Date: December 11, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization
0-5	36	0.0	0-2½': Dark gray/brown, fine- to coarse-grained sand, trace silt, brick at 6-9"; 2½-3': dark gray, fine- to coarse-grained sand, trace silt; at 3': light tan/brown, very fine- to coarse-grained sand, trace clayey silt and fine-grained gravel
5-10	48	0.0	5-7': Tan/brown, very fine- to medium-grained sand, trace fine- to coarse-grained gravel; 7-9': tan/brown, very fine- to medium-grained sand, trace clayey silt and fine- to coarse-grained gravel
10-15	24	0.0	Tan/brown, very fine- to medium-grained sand, trace clayey silt and fine- to coarse-grained gravel; refusal at 12'
15-20			
20-25			
25-30			
30-35			
35-40			
40-45			

Well Diagram



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Well Construction Details

Estimated depth to water: >12 feet below grade
Bottom of boring: 12 feet below grade
Screened interval: 2 to 12 feet below grade
Well materials: 2-inch schedule 40 PVC

ENVIRONMENTAL SERVICES

CMG EST. 2002

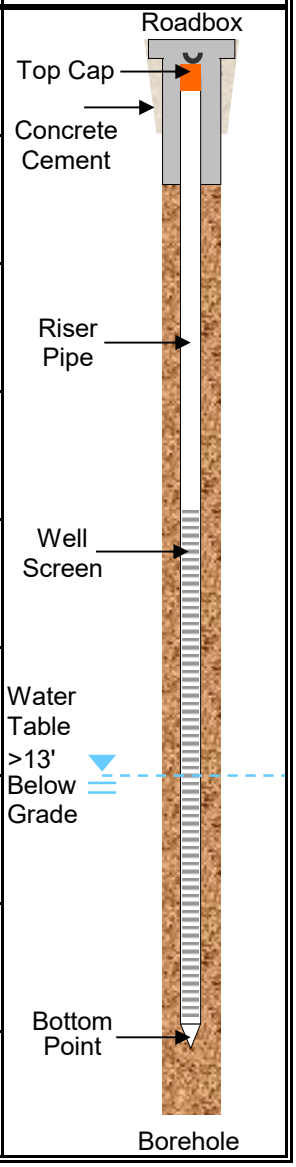
ENGINEERING SERVICES

DIRECT PUSH BORING LOG/WELL CONSTRUCTION DIAGRAM

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **MW-2**
Drilling Company: Geosearch Inc.
Date: December 11, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization
0-5	30	0.0	0-2½': Dark and light tan/brown, very fine- to medium-grained sand, trace silt and fine- to coarse-grained gravel; 2½-4': light tan/brown, very fine- to fine-grained sand; at 4': light tan/brown, very fine-to fine-grained sand, trace clayey silt
5-10	60	0.0	Light tan/brown, very fine-to fine-grained sand, trace clayey silt
10-15	36	0.0	Light tan/brown, very fine-to fine-grained sand, trace clayey silt, BOH at 13½'
15-20			
20-25			
25-30			
30-35			
35-40			
40-45			

Well Diagram



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Well Construction Details

Estimated depth to water: >13 feet below grade
Bottom of boring: 13½ feet below grade
#VALUE!
Well materials: 2-inch schedule 40 PVC

ENVIRONMENTAL SERVICES

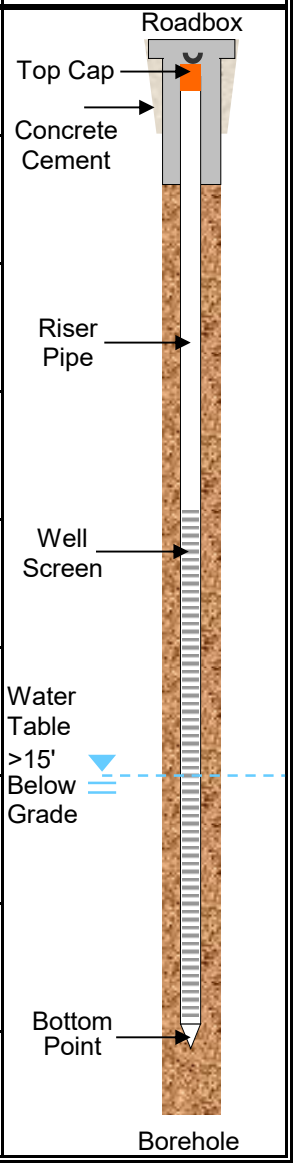
CMG EST. 2002

ENGINEERING SERVICES

DIRECT PUSH BORING LOG/WELL CONSTRUCTION DIAGRAM

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **MW-3**
Drilling Company: Geosearch Inc.
Date: December 11, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization	Well Diagram
0-5	24	0.0	0-4': Medium tan/brown, very fine- to medium-grained sand, trace silt; at 4': tan/brown, very fine- to fine-grained sand, trace clayey silt	
5-10	36	0.0	Tan/brown, very fine- to fine-grained sand, trace clayey silt	
10-15	36	0.0	Tan/brown, very fine- to fine-grained sand, trace clayey silt	
15-20				
20-25				
25-30				
30-35				
35-40				
40-45				



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Well Construction Details

Estimated depth to water: >15 feet below grade
Bottom of boring: 15 feet below grade
Screened interval: 5 to 15 feet below grade
Well materials: 2-inch schedule 40 PVC

ENVIRONMENTAL SERVICES

CMG EST. 2002

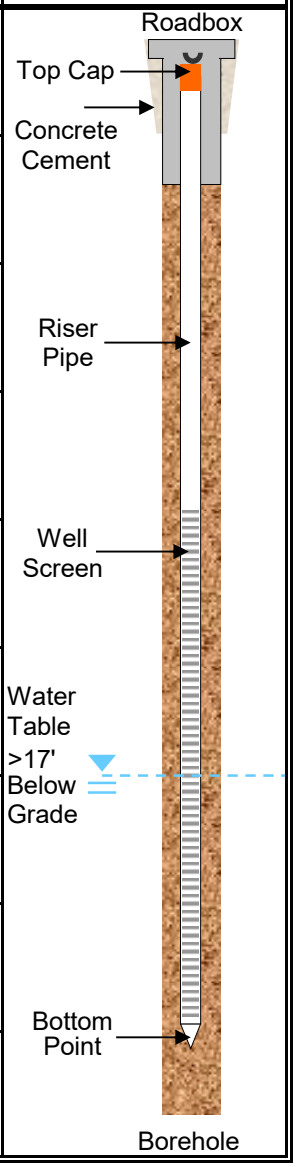
ENGINEERING SERVICES

DIRECT PUSH BORING LOG/WELL CONSTRUCTION DIAGRAM

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **MW-4**
Drilling Company: Geosearch Inc.
Date: December 11, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization
0-5	24	0.0	0-1': Dark gray, very fine- to medium-grained sand, trace silt; at 1': tan/gray, very fine- to medium-grained sand, trace clayey silt and fine- to coarse-grained gravel
5-10	48	0.0	Tan/gray, very fine- to medium-grained sand, trace clayey silt and fine- to coarse-grained gravel
10-15	48	0.0	Tan/gray, very fine- to medium-grained sand, trace clayey silt and fine- to coarse-grained gravel
15-20			BOH at 17'
20-25			
25-30			
30-35			
35-40			
40-45			

Well Diagram



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Well Construction Details

Estimated depth to water: >17 feet below grade
Bottom of boring: 17 feet below grade
Screened interval: 7 to 17 feet below grade
Well materials: 2-inch schedule 40 PVC

ENVIRONMENTAL SERVICES

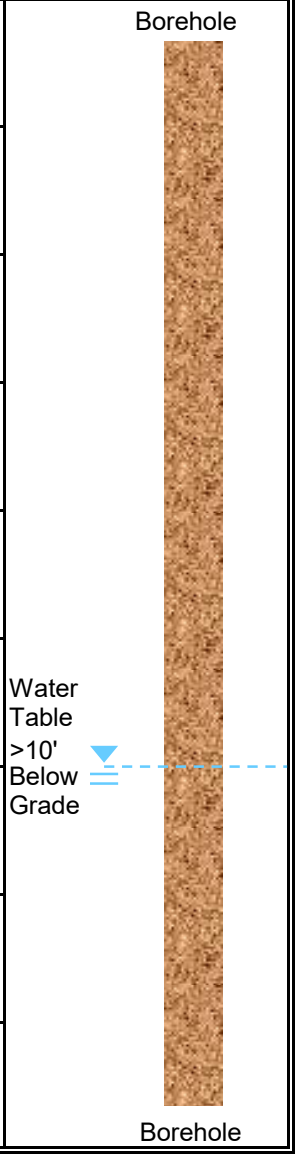
CMG EST. 2002

ENGINEERING SERVICES

DIRECT PUSH BORING LOG

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **SB-1**
Drilling Company: Geosearch Inc.
Date: December 11, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization	Well Diagram
0-5	30	0.0	0-2': Dark gray/brown, fine- to medium-grained sand, some brick fragments; 2-2½: very light to white, fine- to medium-grained sand; at 4½': red/tan/gray, very fine- to medium-grained sand, trace clayey silt and fine- to coarse-grained gravel	
5-10	54	0.0	Red/tan/gray, very fine- to medium-grained sand, trace clayey silt and fine- to coarse-grained gravel	
10-15				
15-20				
20-25				
25-30				
30-35				
35-40				
40-45				



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Boring Observations

Estimated depth to water: >10 feet below grade
Bottom of boring: 10 feet below grade

ENVIRONMENTAL SERVICES

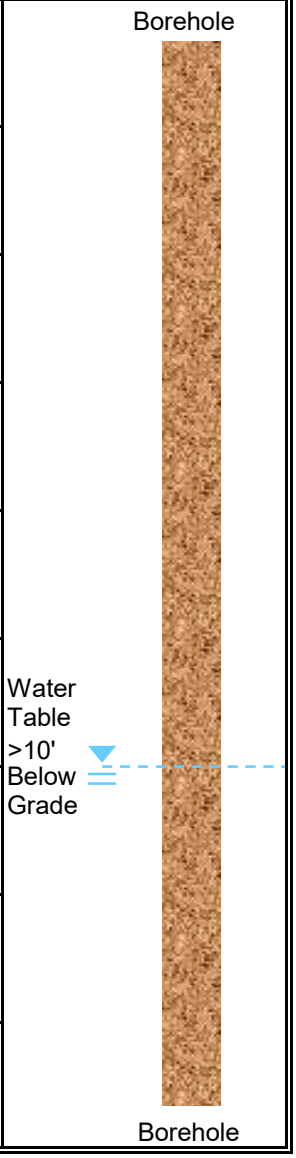
CMG EST. 2002

ENGINEERING SERVICES

DIRECT PUSH BORING LOG

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **SB-2**
Drilling Company: Geosearch Inc.
Date: December 11, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization	Well Diagram
0-5	24	0.0	0-2½': Dark brown/gray, fine- to medium-grained sand, trace fine- to coarse-grained gravel; at 2½': tan/gray, very fine- to medium-grained sand, trace clayey silt, trace fine- to coarse-grained gravel	
5-10	48	0.0	Tan/gray, very fine- to medium-grained sand, trace clayey silt, trace fine- to coarse-grained gravel	
10-15				
15-20				
20-25				
25-30				
30-35				
35-40				
40-45				



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Boring Observations

Estimated depth to water: >10 feet below grade
Bottom of boring: 10 feet below grade

ENVIRONMENTAL SERVICES

CMG EST. 2002

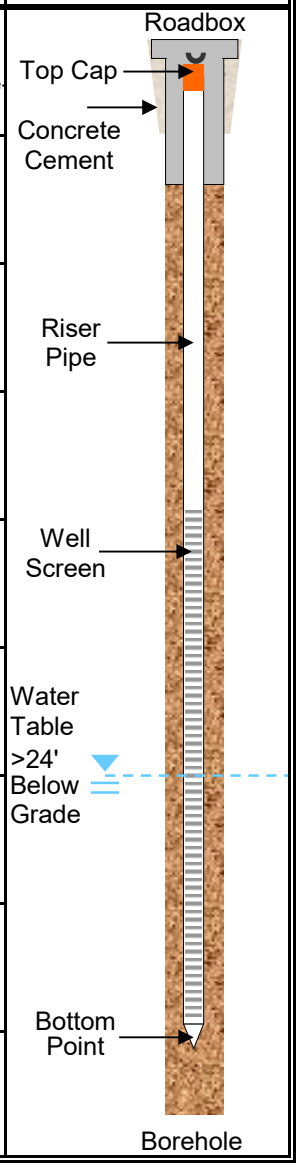
ENGINEERING SERVICES

DIRECT PUSH BORING LOG/WELL CONSTRUCTION DIAGRAM

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **MW-5**
Drilling Company: Geosearch Inc.
Date: December 12, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization
0-5	42	0.0	0-2': Dark brown, very fine- to medium-grained sand, trace silt, organincs; 2-4': medium tan/brown, very fine- to medium-grained sand, trace fine-grained gravel and silt; at 4': light tan/brown, very fine- to fine-grained sand, trace silt and gravel with a dark brown layer
5-10	48	0.0	Tan/gray, very fine- to coarse-grained sand, trace clayey silt and fine- to coarse-grained gravel
10-15	60	0.0	Tan/gray, very fine- to coarse-grained sand, trace clayey silt and fine- to coarse-grained gravel
15-20	60	0.0	Tan/gray, very fine- to coarse-grained sand, trace clayey silt and fine- to coarse-grained gravel
20-25	48	0.0	Tan/gray, very fine- to coarse-grained sand, trace clayey silt and fine- to coarse-grained gravel
25-30			
30-35			
35-40			
40-45			

Well Diagram



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Well Construction Details

Estimated depth to water: >24 feet below grade
Bottom of boring: 24 feet below grade
Screened interval: 14 to 24 feet below grade
Well materials: 2-inch schedule 40 PVC

ENVIRONMENTAL SERVICES

CMG EST. 2002

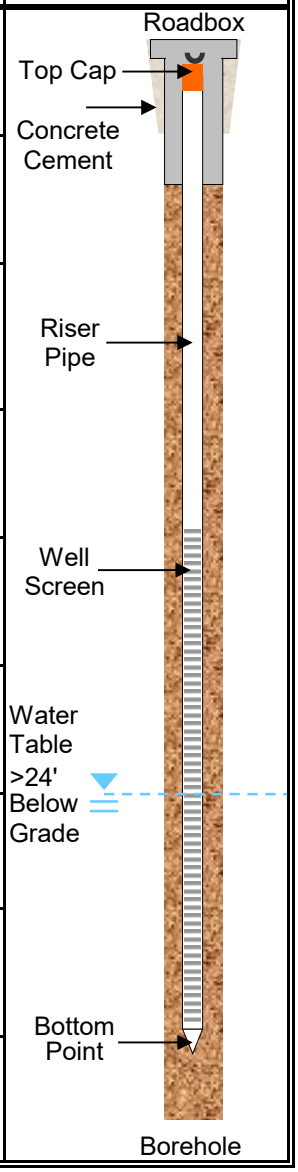
ENGINEERING SERVICES

DIRECT PUSH BORING LOG/WELL CONSTRUCTION DIAGRAM

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **MW-6**
Drilling Company: Geosearch Inc.
Date: December 12, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization
0-5	18	0.0	Dark brown/gray, very fine- to coarse-grained sand, trace silt and fine-grained gravel
5-10	36	0.0	Tan/gray, very fine- to coarse-grained sand, trace clayey silt and fine- to coarse-grained gravel
10-15	48	0.0	10-13': Tan/gray, very fine- to coarse-grained sand, trace clayey silt and fine- to coarse-grained gravel; 13-14': tan/gray, fine- to coarse-grained sand; at 14½: tan/gray very fine- to medium-grained sand, trace silt and fine- to coarse-grained gravel
15-20	42	0.0	Tan/gray, fine- to coarse-grained sand, little fine- to coarse-grained gravel; at 19': tan/gray, very fine- to fine-grained sand, trace silt
20-25	48	0.0	Tan/gray, fine- to coarse-grained sand,trace silt, little fine- to coarse-grained gravel; refusal at 24'
25-30			
30-35			
35-40			
40-45			

Well Diagram



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Well Construction Details

Estimated depth to water: >24 feet below grade
Bottom of boring: 24 feet below grade
Screened interval: 9 to 24 feet below grade
Well materials: 2-inch schedule 40 PVC

ENVIRONMENTAL SERVICES

CMG EST. 2002

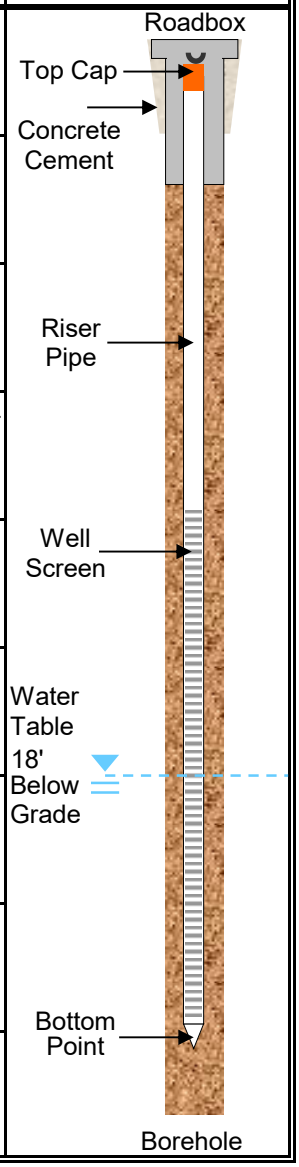
ENGINEERING SERVICES

DIRECT PUSH BORING LOG/WELL CONSTRUCTION DIAGRAM

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **MW-7**
Drilling Company: Geosearch Inc.
Date: December 12, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization
0-5	18	33.5	Dark brown, very fine- to coarse-grained sand, little fine- to coarse-grained gravel, trace silt
5-10	42	0.0	Tan/gray, very fine- to fine-grained sand, trace clayey silt and fine-grained gravel
10-15	48	0.0	Tan/gray, very fine- to fine-grained sand, trace clayey silt and fine-grained gravel, odor at 14½'
15-20	60	0.0	15-17½': Tan/gray, very fine- to fine-grained sand, trace clayey silt and fine-grained gravel, odor; 17½-19': tan/gray, very fine- to medium-grained sand, trace silt; at 19': tan/gray, very fine- to fine-grained sand, trace clayey silt and fine-grained gravel, GW at 18-19'
20-25			
25-30			
30-35			
35-40			
40-45			

Well Diagram



Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Well Construction Details

Estimated depth to water: 18 feet below grade
Bottom of boring: 24 feet below grade
Screened interval: 4 to 24 feet below grade
Well materials: 2-inch schedule 40 PVC

ENVIRONMENTAL SERVICES

CMG EST. 2002

ENGINEERING SERVICES

DIRECT PUSH BORING LOG

Location: 108 & 112 Beacon St. and 47 Oread St., Worcester MA
Boring Designation: **SB-3**
Drilling Company: Geosearch Inc.
Date: December 12, 2024
Field supervisor: Mike Cote
Project ID: 2024-285

Direct-Push Sampling Interval (feet)	Sample Recovery (inches)	PID Reading (ppmv)	Soil Characterization	Well Diagram
0-5	30	0.0	0-1½': Brown organics and very fine- medium-grained sand; 1½-3': black and light gray rock and fine- to coarse-grained sand; 3-4½': tan/gray, very fine- to fine-grained sand, trace silt and fine- to coarse-grained gravel; at 4½': fine- to medium-grained sand, trace silt, little fine- to coarse-grained gravel	Borehole
5-10	36	0.0	Tan/gray, very fine- to medium-grained sand, trace clayey silt and fine-grained gravel	
10-15	24	0.0	Tan/gray, very fine- to medium-grained sand, trace clayey silt and fine-grained gravel	
15-20	60	0.0	Tan/gray, very fine- to medium-grained sand, trace clayey silt and fine-grained gravel	
20-25				
25-30				Water Table >20' Below Grade
30-35				
35-40				
40-45				Borehole

Soil Classification

Particles <0.075 mm = silt (rounded) or clay (laminar)
0.075 to 0.25 mm = fine-grained sand
0.25 to 0.60 mm = medium-grained sand
0.60 to 2.0 mm = coarse-grained sand
2.0 to 76 mm = gravel
Particles >76 mm = cobbles
"and" = 30 to 50% by volume in sample
"some" = 20 to 35% by volume in sample
"little" = 10 to 20% by volume in sample
"trace" = 0 to 10% by volume in sample

Boring Observations

Estimated depth to water: >20 feet below grade
Bottom of boring: 20 feet below grade

APPENDIX B

STANDARD PROTOCOLS

Standard Protocols

Soil Sampling Procedure

Put on a new pair of latex gloves for each soil sample collected. Use precleaned sample scoop (such as a garden spade) to fill precleaned (or new) glass sample jar with soil. Alternatively you can use gloved hand to manually place soil into jar. Avoid placing stones or plant debris (e.g., roots, branches, leaves, or blades of grass) in sample jar insofar as practical to avoid these.

Brush any residual soil off the jar threads and screw the lid on tightly. Label the sample jar with the sample ID, soil depth, time & date of collection, and project ID. Place filled sample jar in cooler on ice.

Decontaminate sample scoop and properly discard latex gloves after collecting each sample.

67 Hall Road
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747 Farmington Avenue
New Britain, CT 06053
Phone (866) 304-7625

Standard Protocols

Soil Sampling for Volatile Organics (VOCs & VPH)

Use volatile organic analysis (VOA) vials containing 15 mL of laboratory pure methanol to collect soil with elevated total organic vapor concentrations (TOV >100 ppmv); use two VOA vials containing laboratory pure water and a stir bar to collect soil that exhibits low volatiles (TOV <100 ppmv). Employ one methanol VOA vial and two water vials to collect soil samples with unknown TOV concentrations.

Open the precleaned VOA vial and use field scale to weigh vial to the nearest 0.1 gram. Record this weight in your field book. Place approximately 5 grams of soil in the weighed VOA vial (this will be about 2-3 cm of soil). Avoid adding pebbles, gravel, or plant debris (e.g., roots, branches, leaves, or blades of grass) to the vial if possible. Brush any soil off the vial threads and reweigh the vial; add more soil if necessary to reach 5 grams. Quickly screw the septum cap on tightly. Record the weight of the filled VOA vial in your field book. Label the VOA vial with the sample ID, soil depth, time & date of collection, and project ID. Place filled vial in cooler on ice and repeat this procedure with any other VOA vials for this sample location.

You will also need to collect an unpreserved soil sample from each location for percent moisture analysis. This sample can be one run for other tests. If you are not conducting any other tests at this sampling location, then collect a separate soil sample in a precleaned soil jar (minimum 4 oz. size) and label this as “Sample for % Moisture Testing.” Ensure that you record this sample on the same chain of custody form as the sample(s) for volatile organic testing and keep VOA vials and percent moisture sample containers together in the same sample cooler.

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STANDARD PROTOCOLS

SOIL BORINGS IN UNCONSOLIDATED SEDIMENTS

CMG requires our drilling subcontractors to have their downhole equipment (e.g. augers, drilling rods, and split-spoon) cleaned in accordance with our "Decontamination Protocols for Non-Disposable Sampling and Field Equipment" before starting work at the Site.

CMG collects soil samples from the surface and at five-foot intervals below the surface unless otherwise specified. We may collect additional soil samples at observed strata changes. We field-screen soil samples for total volatile organic vapors (TVOVs) with a portable photoionization detector photoionization detector (PID) in accordance with our "Soil Headspace Screening" protocol.

CMG typically advances soil borings between 5 and 10 feet below the observed groundwater table. However, we may elect to install borings at lesser or greater depths based on known, observed, or inferred soil and hydrological characteristics.

In the case of soil borings only (no monitoring well installation), CMG directs the drilling subcontractor to backfill the entire borehole with soil cuttings upon completion, compacting it as necessary. We will direct the drilling subcontractor to use additional clean soil, sand, bentonite, or concrete as backfill material if additional fill is necessary.

CMG separates out soil that we do not deem prudent to use as backfill (such as contaminated or polluted soil) for eventual off-Site recycling or disposal. CMG will place this soil in 55-gallon soil drums if we encounter a limited amount of such soil (less than a few cubic yards) and clearly indicate the contents on such drums. CMG will stockpile such soil on plastic sheeting if we encounter a larger amount of, cover the stockpile with more sheeting, and secure the sheeting in place.

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Standard Protocols

Well Installation in Unconsolidated Sediments

CMG typically directs the drilling subcontractor to construct monitoring wells from two-inch diameter, threaded, Schedule 40 polyvinyl chloride (PVC) casing and 0.01-inch PVC slotted screen. However, we may use larger or smaller diameter casing as Site conditions warrant. We generally install a ten-foot section of well screen at the bottom of the well, set so that the center of the screen intersects the average annual water table elevation. CMG places a threaded or slip-on plug on the bottom of the well screen and with a watertight locking well cap on the top of the well casing. Boring logs (typically included as appendices to our reports) provide specific details regarding each monitoring well we install.

CMG directs the drilling subcontractor to advance soil borings in accordance with our "Soil Borings in Unconsolidated Sediments" standard protocol. We then direct them to filter-pack the annular space around the well to approximately one to two feet above the screen with clean sand. We generally use No. 2 (less than 0.01-inch grain size) silica sand for this purpose but may use other types of filter pack as appropriate for the well screen slot size. We then seal each well with six to twelve inches of bentonite clay above the sand pack, and backfill the annular space above the bentonite seal with clean soil cuttings or clean sand.

CMG usually installs a flush-mounted roadway box, sealed in place with concrete, to protect the top of each well from damage, surface water infiltration, tampering, and vandalism. However, we may elect to use a lockable steel standpipe to protect monitoring wells that we install in open fields or heavily vegetated areas.

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Standard Protocols

Small-Diameter Driven Well Installation

CMG requires the drilling subcontractor to arrive on-Site with all of their equipment pre-cleaned and serviceable. The drilling subcontractor uses a two-inch diameter, two- or four-foot long stainless steel sampling spoon equipped with an acetate sleeve to collect soil samples. Following advancement of each two- or four-foot section, the drilling subcontractor removes the spoon from the ground, removes the acetate sleeve, and replaces it with a new sleeve. CMG cuts the acetate sleeve open to examine soil properties and to collect soil samples for photoionization detector (PID) screening and/or laboratory analyses. We collect continuous soil samples from the ground surface unless otherwise specified.

Following the advancement of the boring, CMG may direct the drilling subcontractor to insert a one-inch diameter polyvinyl chloride well. We follow our "Well Installations in Unconsolidated Sediments" protocol when installing groundwater monitoring wells in driven borings. However, we may elect to install a temporary groundwater sampling well in the boring without filter pack, bentonite seal, or sand backfill.

CMG generally develops small diameter driven wells immediately following installation to remove sediment and enhance the hydraulic connection between the well and the local aquifer. We do this using a peristaltic or inertial pump and dedicated polyethylene tubing in accordance with our "Groundwater Sampling" protocol.

If we do not install a permanent well in the boring, CMG directs the drilling subcontractor to backfill the entire boring to original grade with soil cuttings.

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Standard Protocols

Sampling & Field Equipment Decontamination

Where appropriate, CMG uses dedicated or single-use sampling equipment to obviate the need for field decontamination. Where such equipment is not available or appropriate, we use the following decontamination procedures for reusable equipment.

CMG or its subcontractors decontaminate all non-disposable sampling and field equipment that encounter water or soil before sample collection, before re-use, and at the end of each field sampling event. We store decontaminated equipment in clean environments, appropriate protective casings, or carefully wrap it in aluminum foil at the end of each field-sampling event.

Unless we have access to steam-cleaning equipment (which is our preferred method when possible), CMG observes the following four-step minimum decontamination procedure for all non-disposable soil and groundwater sampling equipment:

- Scrub using tap or distilled water and a non-phosphate detergent (such as Alconox®),
- Second rinse with tap or distilled water,
- Third rinse with methanol, and
- Final rinse with distilled water.

We use the following three-step decontamination procedure to clean the water-level meter prior to each use:

- First rinse with tap or distilled water,
- Second rinse with methanol, and
- Final rinse with distilled water.

67 Hall Road
Sturbridge, MA 01566
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STANDARD PROTOCOLS

SOIL HEADSPACE SCREENING

CMG field-screens soils for total volatile organic vapors (TVOVs) using a field-portable photoionization detector (PID) equipped with a 10.6 eV bulb. We program the PID with the isobutylene response factor (0.6), then calibrate it using a 100 parts per million (ppm) isobutylene gas standard to yield "total ionizable organic vapors" in ppmv (parts-per-million by volume), as benzene. We re-calibrate the PID in this way every 10 to 25 analyses thereafter. We operate and maintain the PID according to the manufacturer's specifications.

Upon sample collection, CMG partially fills either glass sampling jars (8-ounce or greater) or dedicated disposable Ziplock® plastic-freezer bags between one-half to one third with soil. We then seal the jars with aluminum foil or zip up plastic bags, taking care to ensure the threads cover the jar or the zipper of the plastic bag is free of soil. We shake the sample vigorously for 15 seconds, allowing the headspace to develop for at least one minute, then shake the sample vigorously for 15 seconds again.

CMG then inserts the PID probe through the aluminum foil (jar method) or into a small opening in the bag's seal (bag method) to a point approximately one-half of the headspace depth, taking care to avoid water droplets or soil particles. When ambient air temperatures are below approximately 10ºC (45ºF), we conduct headspace development inside a heated vehicle or building. We record the highest PID response following probe insertion as the specific headspace concentration for that individual soil sample.

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Standard Protocols

Groundwater Sampling

Prior to sampling each selected groundwater monitoring well, CMG gauges depth to groundwater to the nearest one hundredth of a foot from the top of the riser pipe or road box using an electronic water level indicator. Using depth to water information, diameter of the well, and total depth, we calculate the volume of standing water in the well. We then generally lower the bailer half its length past the top of the water table and collect a water sample for visual and olfactory examination. We specifically check for product odor, sheen, emulsion, and separate-phase product.

CMG typically uses either a dedicated disposable polyethylene bailer or a peristaltic pump with dedicated polyethylene tubing to remove three to five well volumes of water from the well, collecting the purge water into a dedicated sample collection bucket or similar container. However, we may use a larger capacity down-hole well pump if Site conditions warrant, as is the case with unusually large diameter or deep wells. We may also use a dedicated or pre-cleaned inertial pump (check valve) and dedicated polyethylene tubing in unusually small diameter wells. Provided the well has a sufficiently fast recharge rate, we wait until the water column recharges to 80 to 90% of its original volume before obtaining samples from the monitoring well.

CMG collects groundwater samples in appropriate containers as specified by the selected method of analysis using the same dedicated bailer, peristaltic pump and tubing, or inertial pump and tubing. We do not use centrifugal pumps for sampling. We collect samples in new or pre-cleaned sample containers, pre-preserved if required. We clearly label each container and keep it chilled between 0 and 4 ºC (32 to 39 ºF) in a sample cooler until its delivery to the laboratory under standard chain-of-custody procedures.

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STANDARD PROTOCOLS

LOW-FLOW GROUNDWATER SAMPLING

Prior to sampling each selected groundwater monitoring well, CMG gauges depth to groundwater to the nearest one hundredth of a foot from the top of the riser pipe or road box using an electronic water level indicator. Using depth to water information, diameter of the well, and total depth, we calculate the volume of standing water in the well. CMG then purges three to five well volumes of water at a rate of approximately 0.25 L/min using a peristaltic pump with dedicated ¾-inch polyethylene tubing, to minimize suspension of solids in the well. We wait until the water column recharges to at least 80 to 90% of its original volume before obtaining samples from the well.

Alternatively, CMG may field-screen groundwater during low-flow purging for pH, temperature, and conductivity using a flow-through cell. When appropriate, we may also screen groundwater for oxidation-reduction potential (ORP) and dissolved oxygen (DO). Low-flow purging should continue until field parameters stabilize. To determine stabilization, take at least three sequential measurements:

- pH is stable when readings are within 0.1 Standard Units
- Temperature is stable when readings are within 0.3 °C
- Conductivity is stable when readings are within 3%
- ORP is stable when readings are within 10 mV
- DO is stable when readings are within 10% if >0.5 mg/L, or when 3 sequential readings are <0.5 mg/L

To obtain non-volatile samples (such as EPH), CMG uses low-flow sampling techniques to minimize suspended solids from the sample. We lower dedicated polyethylene tubing into the well and collect water samples at a rate of approximately 0.25 L/min directly into preserved containers. CMG uses dedicated polyethylene bailers to obtain groundwater samples for volatile compound analyses (VOCs or VPH), since the peristaltic pump may create a negative pressure that could strip volatiles (depending on the groundwater depth).

Upon stabilization (or removal of at least three well volumes), we place the sample to be analyzed into an appropriate container. We clearly label the sample container, pre-preserve it if required, and chill it until its delivery to the laboratory under an appropriate chain of custody. We take care throughout the sampling procedure not to cross-contaminate any sampling equipment.

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APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS & CHAIN-OF-CUSTODY DOCUMENTATION

PHOENIX
Environmental Laboratories, Inc.

Tuesday, January 07, 2025

Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Project ID: 2024-285
SDG ID: GCS26589
Sample ID#s: CS26589 - CS26596

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 07, 2025

SDG I.D.: GCS26589

Project ID: 2024-285

Client Id	Lab Id	Matrix
MW-5, 2-3`	CS26589	SOIL
MW-5, 9-10`	CS26590	SOIL
MW-6, 2-4`	CS26591	SOIL
MW-6, 9-20`	CS26592	SOIL
MW-7, 4-5`	CS26593	SOIL
MW-7, 14.5-16`	CS26594	SOIL
SB-3, 4-5`	CS26595	SOIL
SB-3, 9-10`	CS26596	SOIL

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	8:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26589

Project ID: 2024-285
Client ID: MW-5, 2-3`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Lead	31.6	0.30	mg/Kg	1	12/14/24	CPP	SW6010D
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Asbestos	ND		%		12/30/24	*	40CFR 763 Sub. E APP

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

Asbestos analysis was analyzed by EMSL Analytical, Inc. Cinnaminson, NJ, accredited under the National Voluntary Laboratory Accreditation Program (NJ NVLAP); Lab Code 101048-0.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
January 07, 2025
Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	8:35
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26590

Project ID: 2024-285
Client ID: MW-5, 9-10`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.36	0.36	mg/Kg	1	12/14/24	CPP	SW6010D
Arsenic	19.6	0.71	mg/Kg	1	12/14/24	CPP	SW6010D
Barium	64.7	0.36	mg/Kg	1	12/14/24	CPP	SW6010D
Cadmium	< 0.36	0.36	mg/Kg	1	12/14/24	CPP	SW6010D
Chromium	31.3	0.36	mg/Kg	1	12/14/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	8.28	0.36	mg/Kg	1	12/14/24	CPP	SW6010D
Selenium	< 1.4	1.4	mg/Kg	1	12/14/24	CPP	SW6010D
Percent Solid	91		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/12/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/12/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	R/H/U	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-5, 9-10`

Phoenix I.D.: CS26590

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.62	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	31	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	31	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	310	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	3.7	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	37	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-5, 9-10`

Phoenix I.D.: CS26590

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	95		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	98		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	98		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	90		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	120	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	6.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Chrysene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluorene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	50		%	1	12/19/24	MR	30 - 130 %
% Nitrobenzene-d5	55		%	1	12/19/24	MR	30 - 130 %
% Terphenyl-d14	63		%	1	12/19/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Acenaphthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Naphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Phenanthrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004

Project ID: 2024-285
Client ID: MW-5, 9-10`

Phoenix I.D.: CS26590

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	72	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	72	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	72	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	72	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	69		%	1	12/13/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	77		%	1	12/13/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	81		%	1	12/13/24	AW	40 - 140 %
% o-terphenyl (aromatic)	71		%	1	12/13/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.028	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.28	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	89		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	87		%	50	12/16/24	V	70 - 130 %

Project ID: 2024-285
Client ID: MW-5, 9-10`

Phoenix I.D.: CS26590

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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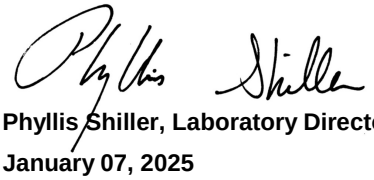

Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	9:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26591

Project ID: 2024-285
Client ID: MW-6, 2-4`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Lead	1310	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Asbestos	ND		%		12/30/24	*	40CFR 763 Sub. E APP

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

Asbestos analysis was analyzed by EMSL Analytical, Inc. Cinnaminson, NJ, accredited under the National Voluntary Laboratory Accreditation Program (NJ NVLAP); Lab Code 101048-0.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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Phyllis Shiller, Laboratory Director
January 07, 2025
Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	9:40
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26592

Project ID: 2024-285
Client ID: MW-6, 9-20`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.35	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Arsenic	24.6	0.69	mg/Kg	1	12/14/24	CPP	SW6010D
Barium	68.1	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Cadmium	< 0.35	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Chromium	31.9	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	7.99	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Selenium	< 1.4	1.4	mg/Kg	1	12/14/24	CPP	SW6010D
Percent Solid	88		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/12/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/12/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	R/H/U	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.3	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-6, 9-20`

Phoenix I.D.: CS26592

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.56	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	28	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	28	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	280	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	3.3	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	33	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-6, 9-20`

Phoenix I.D.: CS26592

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	95		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	98		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	99		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	91		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	110	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	5.6	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Anthracene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Chrysene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluoranthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluorene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Pyrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	51		%	1	12/19/24	MR	30 - 130 %
% Nitrobenzene-d5	55		%	1	12/19/24	MR	30 - 130 %
% Terphenyl-d14	63		%	1	12/19/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Acenaphthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Naphthalene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Phenanthrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004

Project ID: 2024-285
Client ID: MW-6, 9-20`

Phoenix I.D.: CS26592

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	75	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	75	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	75	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	75	mg/Kg	1	12/13/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	76		%	1	12/13/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	83		%	1	12/13/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	89		%	1	12/13/24	AW	40 - 140 %
% o-terphenyl (aromatic)	77		%	1	12/13/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.032	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.32	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	93		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	91		%	50	12/16/24	V	70 - 130 %

Project ID: 2024-285
Client ID: MW-6, 9-20`

Phoenix I.D.: CS26592

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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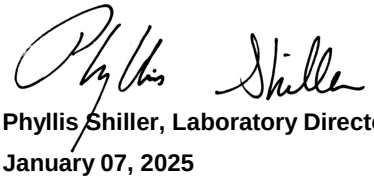

Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	10:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26593

Project ID: 2024-285
Client ID: MW-7, 4-5`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Lead	156	0.32	mg/Kg	1	12/14/24	CPP	SW6010D
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Asbestos	ND		%		12/30/24	*	40CFR 763 Sub. E APP

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

Asbestos analysis was analyzed by EMSL Analytical, Inc. Cinnaminson, NJ, accredited under the National Voluntary Laboratory Accreditation Program (NJ NVLAP); Lab Code 101048-0.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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Phyllis Shiller, Laboratory Director
January 07, 2025
Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
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Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	10:40
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26594

Project ID: 2024-285
Client ID: MW-7, 14.5-16`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.35	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Arsenic	19.0	0.71	mg/Kg	1	12/14/24	CPP	SW6010D
Barium	74.6	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Cadmium	0.38	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Chromium	38.2	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	8.40	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Selenium	< 1.4	1.4	mg/Kg	1	12/14/24	CPP	SW6010D
Percent Solid	93		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/12/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	R/H/U	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	4.4	ug/Kg	1	12/18/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,1-Dichloroethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,1-Dichloroethene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,1-Dichloropropene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-7, 14.5-16`

Phoenix I.D.: CS26594

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.73	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dichloroethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dichloropropane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,3-Dichloropropane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
2,2-Dichloropropane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
2-Chlorotoluene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
2-Hexanone	ND	37	ug/Kg	1	12/18/24	JLI	SW8260D
2-Isopropyltoluene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
4-Chlorotoluene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	37	ug/Kg	1	12/18/24	JLI	SW8260D
Acetone	ND	370	ug/Kg	1	12/18/24	JLI	SW8260D
Acrylonitrile	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Benzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Bromobenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Bromochloromethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Bromodichloromethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Bromoform	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Bromomethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Carbon Disulfide	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Carbon tetrachloride	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Chlorobenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Chloroethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Chloroform	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Chloromethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Dibromochloromethane	ND	4.4	ug/Kg	1	12/18/24	JLI	SW8260D
Dibromomethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Dichlorodifluoromethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Ethylbenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Hexachlorobutadiene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Isopropylbenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
m&p-Xylene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	44	ug/Kg	1	12/18/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	15	ug/Kg	1	12/18/24	JLI	SW8260D
Methylene chloride	ND	15	ug/Kg	1	12/18/24	JLI	SW8260D
Naphthalene	7.3	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
n-Butylbenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
n-Propylbenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
o-Xylene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
p-Isopropyltoluene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
sec-Butylbenzene	13	7.3	ug/Kg	1	12/18/24	JLI	SW8260D

Project ID: 2024-285 Phoenix I.D.: CS26594

Client ID: MW-7, 14.5-16`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
tert-Butylbenzene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Tetrachloroethene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	15	ug/Kg	1	12/18/24	JLI	SW8260D
Toluene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Total Xylenes	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	15	ug/Kg	1	12/18/24	JLI	SW8260D
Trichloroethene	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Trichlorofluoromethane	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	15	ug/Kg	1	12/18/24	JLI	SW8260D
Vinyl chloride	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	94		%	1	12/18/24	JLI	70 - 130 %
% Bromofluorobenzene	99		%	1	12/18/24	JLI	70 - 130 %
% Dibromofluoromethane	88		%	1	12/18/24	JLI	70 - 130 %
% Toluene-d8	95		%	1	12/18/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	150	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
Diethyl ether	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	7.3	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Chrysene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluorene	370	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	66		%	1	12/19/24	MR	30 - 130 %
% Nitrobenzene-d5	61		%	1	12/19/24	MR	30 - 130 %
% Terphenyl-d14	77		%	1	12/19/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Acenaphthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Naphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Phenanthrene	830	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004

Project ID: 2024-285 Phoenix I.D.: CS26594

Client ID: MW-7, 14.5-16`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	150	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	83		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	107		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	112		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	90		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	120	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	85	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	33	5.6	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.028	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	0.12	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.28	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.056	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	93		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	90		%	50	12/16/24	V	70 - 130 %

Project ID: 2024-285 Phoenix I.D.: CS26594

Client ID: MW-7, 14.5-16`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	11:40
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26595

Project ID: 2024-285
Client ID: SB-3, 4-5`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Lead	4.66	0.30	mg/Kg	1	12/14/24	CPP	SW6010D
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
January 07, 2025
Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/12/24	11:50
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	OREAD				

Laboratory Data

SDG ID: GCS26589
Phoenix ID: CS26596

Project ID: 2024-285
Client ID: SB-3, 9-10`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.35	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Arsenic	25.3	0.70	mg/Kg	1	12/14/24	CPP	SW6010D
Barium	76.7	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Cadmium	0.38	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Chromium	41.1	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	10.3	0.35	mg/Kg	1	12/14/24	CPP	SW6010D
Selenium	< 1.4	1.4	mg/Kg	1	12/14/24	CPP	SW6010D
Percent Solid	90		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/12/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	R/H/U	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	4.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: SB-3, 9-10`

Phoenix I.D.: CS26596

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.69	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	35	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	35	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	350	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	4.2	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	42	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
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Phoenix I.D.: CS26596

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	95		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	98		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	99		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	91		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	140	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	6.9	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Chrysene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluorene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	52		%	1	12/19/24	MR	30 - 130 %
% Nitrobenzene-d5	57		%	1	12/19/24	MR	30 - 130 %
% Terphenyl-d14	65		%	1	12/19/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Acenaphthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Naphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Phenanthrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	80		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	63		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	77		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	75		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	5.9	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	5.9	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	5.9	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	5.9	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	5.9	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.029	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.059	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.059	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.29	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.059	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.059	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.059	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	95		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	91		%	50	12/16/24	V	70 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

QA/QC Report

January 07, 2025

QA/QC Data

SDG I.D.: GCS26589

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 763304 (mg/kg), QC Sample No: CS12593 2X (CS26590, CS26592, CS26594, CS26596)													
Mercury - Soil	BRL	0.03	0.06	0.06	NC	95.6	85.7	10.9	109	120	9.6	75 - 125	30
Comment: Additional Mercury Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range is 75-125% for aqueous and 80-120% for soils.													
QA/QC Batch 762477 (mg/kg), QC Sample No: CS25642 (CS26589, CS26590, CS26591, CS26592, CS26593, CS26594, CS26595, CS26596)													
ICP Metals - Soil													
Arsenic	BRL	0.67	0.84	1.05	NC	98.7	104	5.2	95.7			75 - 125	30
Barium	BRL	0.33	14.5	19.2	27.9	100	103	3.0	105			75 - 125	30
Cadmium	BRL	0.33	<0.41	<0.39	NC	103	107	3.8	101			75 - 125	30
Chromium	BRL	0.33	4.18	4.01	4.20	104	111	6.5	103			75 - 125	30
Lead	BRL	0.33	3.73	4.51	18.9	98.1	103	4.9	100			75 - 125	30
Selenium	BRL	1.3	<1.6	<1.6	NC	89.0	98.1	9.7	86.0			75 - 125	30
Silver	BRL	0.33	<0.41	<0.39	NC	103	108	4.7	97.9			75 - 125	30
Comment: Additional Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range 75-125%.													

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QA/QC Report

January 07, 2025

QA/QC Data

SDG I.D.: GCS26589

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 762334 (mg/kg), QC Sample No: CS23981 (CS26590, CS26592)											
Extractable Petroleum Hydrocarbons - Soil											
C11-C22 Aromatic Hydrocarbons U	ND	3.3							40 - 140	25	
C9-C18 Aliphatic Hydrocarbons 1*	ND	3.3	62	60	3.3	59	60	1.7	40 - 140	25	
C19-C36 Aliphatic Hydrocarbons 1*	ND	3.3	72	72	0.0	68	72	5.7	40 - 140	25	
C11-C22 Aromatic Hydrocarbons 1	ND	3.3	68	66	3.0	64	65	1.6	40 - 140	25	
C9 - Nonane	ND	0.67	38	36	5.4	37	35	5.6	40 - 140	25	l,m
C-10 Decane	ND	0.67	50	48	4.1	49	48	2.1	40 - 140	25	
C12 - Dodecane	ND	0.67	58	56	3.5	56	56	0.0	40 - 140	25	
C14 - Tetradecane	ND	0.67	64	62	3.2	61	62	1.6	40 - 140	25	
C16 - Hexadecane	ND	0.67	69	67	2.9	65	67	3.0	40 - 140	25	
C18 - Octadecane	ND	0.67	95	90	5.4	89	92	3.3	40 - 140	25	
C19 - Nonadecane	ND	0.67	75	74	1.3	72	74	2.7	40 - 140	25	
C20 - Eicosane	ND	0.67	79	77	2.6	75	78	3.9	40 - 140	25	
C22 - Docosane	ND	0.67	85	80	6.1	80	83	3.7	40 - 140	25	
C24 - Tetracosane	ND	0.67	75	74	1.3	72	75	4.1	40 - 140	25	
C26 - Hexacosane	ND	0.67	73	72	1.4	70	74	5.6	40 - 140	25	
C28 - Octacosane	ND	0.67	70	69	1.4	66	70	5.9	40 - 140	25	
C30 - Tricotane	ND	0.67	69	70	1.4	66	70	5.9	40 - 140	25	
C36 - Hexatriacontane	ND	0.67	47	62	27.5	46	51	10.3	40 - 140	25	r
% 1-chlorooctadecane (aliphatic)	69	%	73	72	1.4	70	73	4.2	40 - 140	25	
% o-terphenyl (aromatic)	76	%	80	77	3.8	74	76	2.7	40 - 140	25	
% 2-Fluorobiphenyl (Fractionation)	84	%	101	92	9.3	95	93	2.1	40 - 140	25	
% 2-Bromonaphthalene (Fractionati	63	%	72	70	2.8	63	70	10.5	40 - 140	25	
% 2-Methylnaphthalene BT		%	0	0	NC				0 - 5		
% Naphthalene BT		%	0	0	NC				0 - 5		
Comment:											
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%											
QA/QC Batch 762578 (mg/kg), QC Sample No: CS26670 (CS26594, CS26596)											
Extractable Petroleum Hydrocarbons - Soil											
C11-C22 Aromatic Hydrocarbons U	ND	3.3							40 - 140	25	
C9-C18 Aliphatic Hydrocarbons 1*	ND	3.3	54	51	5.7	66	64	3.1	40 - 140	25	
C19-C36 Aliphatic Hydrocarbons 1*	ND	3.3	66	63	4.7	75	70	6.9	40 - 140	25	
C11-C22 Aromatic Hydrocarbons 1	ND	3.3	72	68	5.7	71	75	5.5	40 - 140	25	
C9 - Nonane	ND	0.67	32	32	0.0	34	35	2.9	40 - 140	25	l,m
C-10 Decane	ND	0.67	42	42	0.0	44	44	0.0	40 - 140	25	
C12 - Dodecane	ND	0.67	48	47	2.1	55	52	5.6	40 - 140	25	
C14 - Tetradecane	ND	0.67	55	50	9.5	74	67	9.9	40 - 140	25	
C16 - Hexadecane	ND	0.67	61	58	5.0	96	82	15.7	40 - 140	25	
C18 - Octadecane	ND	0.67	85	79	7.3	90	105	15.4	40 - 140	25	
C19 - Nonadecane	ND	0.67	67	64	4.6	92	86	6.7	40 - 140	25	
C20 - Eicosane	ND	0.67	73	69	5.6	95	82	14.7	40 - 140	25	

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
C22 - Docosane	ND	0.67	78	73	6.6	82	78	5.0	40 - 140	25
C24 - Tetracosane	ND	0.67	69	66	4.4	74	71	4.1	40 - 140	25
C26 - Hexacosane	ND	0.67	67	64	4.6	71	69	2.9	40 - 140	25
C28 - Octacosane	ND	0.67	66	64	3.1	71	67	5.8	40 - 140	25
C30 - Tricotane	ND	0.67	67	63	6.2	70	67	4.4	40 - 140	25
C36 - Hexatriacontane	ND	0.67	41	41	0.0	44	41	7.1	40 - 140	25
% 1-chlorooctadecane (aliphatic)	62	%	69	65	6.0	79	74	6.5	40 - 140	25
% o-terphenyl (aromatic)	80	%	82	76	7.6	80	83	3.7	40 - 140	25
% 2-Fluorobiphenyl (Fractionation)	97	%	96	90	6.5	98	104	5.9	40 - 140	25
% 2-Bromonaphthalene (Fractionati	84	%	80	74	7.8	83	84	1.2	40 - 140	25
% 2-Methylnaphthalene BT		%	0.60	0.50	18.2				0 - 5	
% Naphthalene BT		%	0	0	NC				0 - 5	

Comment:

Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%

QA/QC Batch 763131 (ug/kg), QC Sample No: CS25896 (CS26590, CS26592, CS26594, CS26596)

Polynuclear Aromatic HC - Soil

2-Methylnaphthalene	ND	230	61	68	10.9	69	80	14.8	40 - 140	30
Acenaphthene	ND	230	55	62	12.0	62	71	13.5	40 - 140	30
Acenaphthylene	ND	230	49	54	9.7	54	61	12.2	40 - 140	30
Anthracene	ND	230	58	66	12.9	65	78	18.2	40 - 140	30
Benz(a)anthracene	ND	230	63	70	10.5	72	84	15.4	40 - 140	30
Benzo(a)pyrene	ND	230	63	72	13.3	71	84	16.8	40 - 140	30
Benzo(b)fluoranthene	ND	230	55	67	19.7	66	75	12.8	40 - 140	30
Benzo(ghi)perylene	ND	230	63	68	7.6	69	83	18.4	40 - 140	30
Benzo(k)fluoranthene	ND	230	55	64	15.1	66	74	11.4	40 - 140	30
Chrysene	ND	230	56	64	13.3	64	74	14.5	40 - 140	30
Dibenz(a,h)anthracene	ND	230	67	72	7.2	73	87	17.5	40 - 140	30
Fluoranthene	ND	230	59	69	15.6	67	76	12.6	40 - 140	30
Fluorene	ND	230	58	65	11.4	65	75	14.3	40 - 140	30
Indeno(1,2,3-cd)pyrene	ND	230	64	69	7.5	69	84	19.6	40 - 140	30
Naphthalene	ND	230	54	60	10.5	61	69	12.3	40 - 140	30
Phenanthrene	ND	230	58	66	12.9	66	77	15.4	40 - 140	30
Pyrene	ND	230	56	67	17.9	64	73	13.1	40 - 140	30
% 2-Fluorobiphenyl	57	%	52	58	10.9	58	67	14.4	30 - 130	30
% Nitrobenzene-d5	62	%	56	63	11.8	63	70	10.5	30 - 130	30
% Terphenyl-d14	59	%	54	67	21.5	64	72	11.8	30 - 130	30

Comment:

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 763410 (ug/kg), QC Sample No: CS27838 (CS26594)

Volatiles - Soil (Low Level)

1,1,1,2-Tetrachloroethane	ND	5.0	103	107	3.8				70 - 130	20
1,1,1-Trichloroethane	ND	5.0	93	95	2.1				70 - 130	20
1,1,2,2-Tetrachloroethane	ND	3.0	111	116	4.4				70 - 130	20
1,1,2-Trichloroethane	ND	5.0	107	108	0.9				70 - 130	20
1,1-Dichloroethane	ND	5.0	89	92	3.3				70 - 130	20
1,1-Dichloroethene	ND	5.0	99	100	1.0				70 - 130	20
1,1-Dichloropropene	ND	5.0	100	104	3.9				70 - 130	20
1,2,3-Trichlorobenzene	ND	5.0	102	102	0.0				70 - 130	20
1,2,3-Trichloropropane	ND	5.0	96	100	4.1				70 - 130	20
1,2,4-Trichlorobenzene	ND	5.0	99	100	1.0				70 - 130	20
1,2,4-Trimethylbenzene	ND	1.0	101	103	2.0				70 - 130	20

QA/QC Data

SDG I.D.: GCS26589

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,2-Dibromo-3-chloropropane	ND	5.0	110	113	2.7				70 - 130	20
1,2-Dibromoethane	ND	5.0	105	107	1.9				70 - 130	20
1,2-Dichlorobenzene	ND	5.0	102	104	1.9				70 - 130	20
1,2-Dichloroethane	ND	5.0	84	84	0.0				70 - 130	20
1,2-Dichloropropane	ND	5.0	108	109	0.9				70 - 130	20
1,3,5-Trimethylbenzene	ND	1.0	103	105	1.9				70 - 130	20
1,3-Dichlorobenzene	ND	5.0	104	106	1.9				70 - 130	20
1,3-Dichloropropane	ND	5.0	104	105	1.0				70 - 130	20
1,4-Dichlorobenzene	ND	5.0	102	104	1.9				70 - 130	20
1,4-dioxane	ND	100	88	99	11.8				40 - 160	20
2,2-Dichloropropane	ND	5.0	90	95	5.4				70 - 130	20
2-Chlorotoluene	ND	5.0	109	111	1.8				70 - 130	20
2-Hexanone	ND	25	106	110	3.7				40 - 160	20
2-Isopropyltoluene	ND	5.0	107	108	0.9				70 - 130	20
4-Chlorotoluene	ND	5.0	104	107	2.8				70 - 130	20
4-Methyl-2-pentanone	ND	25	102	106	3.8				40 - 160	20
Acetone	ND	10	80	84	4.9				40 - 160	20
Acrylonitrile	ND	5.0	97	100	3.0				70 - 130	20
Benzene	ND	1.0	106	108	1.9				70 - 130	20
Bromobenzene	ND	5.0	106	108	1.9				70 - 130	20
Bromochloromethane	ND	5.0	104	104	0.0				70 - 130	20
Bromodichloromethane	ND	5.0	93	94	1.1				70 - 130	20
Bromoform	ND	5.0	101	104	2.9				70 - 130	20
Bromomethane	ND	5.0	87	87	0.0				40 - 160	20
Carbon Disulfide	ND	5.0	98	98	0.0				70 - 130	20
Carbon tetrachloride	ND	5.0	93	94	1.1				70 - 130	20
Chlorobenzene	ND	5.0	104	106	1.9				70 - 130	20
Chloroethane	ND	5.0	97	96	1.0				70 - 130	20
Chloroform	ND	5.0	95	97	2.1				70 - 130	20
Chloromethane	ND	5.0	124	126	1.6				40 - 160	20
cis-1,2-Dichloroethene	ND	5.0	110	112	1.8				70 - 130	20
cis-1,3-Dichloropropene	ND	5.0	107	109	1.9				70 - 130	20
Dibromochloromethane	ND	3.0	100	102	2.0				70 - 130	20
Dibromomethane	ND	5.0	98	101	3.0				70 - 130	20
Dichlorodifluoromethane	ND	5.0	96	99	3.1				40 - 160	20
Diethyl ether	ND	5.0	86	91	5.6				70 - 130	20
Di-isopropyl ether	ND	5.0	92	94	2.2				70 - 130	20
Ethyl tert-butyl ether	ND	5.0	89	93	4.4				70 - 130	20
Ethylbenzene	ND	1.0	106	107	0.9				70 - 130	20
Hexachlorobutadiene	ND	5.0	95	93	2.1				70 - 130	20
Isopropylbenzene	ND	1.0	109	112	2.7				70 - 130	20
m&p-Xylene	ND	2.0	105	106	0.9				70 - 130	20
Methyl ethyl ketone	ND	5.0	92	98	6.3				40 - 160	20
Methyl t-butyl ether (MTBE)	ND	1.0	84	86	2.4				70 - 130	20
Methylene chloride	ND	5.0	92	93	1.1				70 - 130	20
Naphthalene	ND	5.0	113	116	2.6				70 - 130	20
n-Butylbenzene	ND	1.0	107	108	0.9				70 - 130	20
n-Propylbenzene	ND	1.0	110	111	0.9				70 - 130	20
o-Xylene	ND	2.0	106	108	1.9				70 - 130	20
p-Isopropyltoluene	ND	1.0	105	106	0.9				70 - 130	20
sec-Butylbenzene	ND	1.0	109	110	0.9				70 - 130	20
Styrene	ND	5.0	108	110	1.8				70 - 130	20
tert-amyl methyl ether	ND	5.0	98	102	4.0				70 - 130	20

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
tert-Butylbenzene	ND	1.0	105	105	0.0				70 - 130	20	
Tetrachloroethene	ND	5.0	104	106	1.9				70 - 130	20	
Tetrahydrofuran (THF)	ND	5.0	102	106	3.8				70 - 130	20	
Toluene	ND	1.0	105	107	1.9				70 - 130	20	
trans-1,2-Dichloroethene	ND	5.0	97	99	2.0				70 - 130	20	
trans-1,3-Dichloropropene	ND	5.0	105	106	0.9				70 - 130	20	
trans-1,4-dichloro-2-butene	ND	5.0	132	135	2.2				70 - 130	20	l
Trichloroethene	ND	5.0	102	104	1.9				70 - 130	20	
Trichlorofluoromethane	ND	5.0	79	81	2.5				70 - 130	20	
Trichlorotrifluoroethane	ND	5.0	93	99	6.3				70 - 130	20	
Vinyl chloride	ND	5.0	107	107	0.0				70 - 130	20	
% 1,2-dichlorobenzene-d4	99	%	99	99	0.0				70 - 130	20	
% Bromofluorobenzene	92	%	95	94	1.1				70 - 130	20	
% Dibromofluoromethane	94	%	96	94	2.1				70 - 130	20	
% Toluene-d8	99	%	101	101	0.0				70 - 130	20	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

QA/QC Batch 763117 (ug/kg), QC Sample No: CS28161 (CS26590, CS26592, CS26596)

Volatiles - Soil (Low Level)

1,1,1,2-Tetrachloroethane	ND	5.0	98	100	2.0	86	95	9.9	70 - 130	20	
1,1,1-Trichloroethane	ND	5.0	96	100	4.1	85	92	7.9	70 - 130	20	
1,1,2,2-Tetrachloroethane	ND	3.0	98	100	2.0	91	99	8.4	70 - 130	20	
1,1,2-Trichloroethane	ND	5.0	100	102	2.0	91	98	7.4	70 - 130	20	
1,1-Dichloroethane	ND	5.0	95	97	2.1	83	91	9.2	70 - 130	20	
1,1-Dichloroethene	ND	5.0	100	102	2.0	87	94	7.7	70 - 130	20	
1,1-Dichloropropene	ND	5.0	99	101	2.0	87	95	8.8	70 - 130	20	
1,2,3-Trichlorobenzene	ND	5.0	102	103	1.0	63	68	7.6	70 - 130	20	m
1,2,3-Trichloropropane	ND	5.0	89	89	0.0	84	92	9.1	70 - 130	20	
1,2,4-Trichlorobenzene	ND	5.0	97	99	2.0	62	68	9.2	70 - 130	20	m
1,2,4-Trimethylbenzene	ND	1.0	96	99	3.1	81	88	8.3	70 - 130	20	
1,2-Dibromo-3-chloropropane	ND	5.0	105	106	0.9	91	102	11.4	70 - 130	20	
1,2-Dibromoethane	ND	5.0	101	101	0.0	88	97	9.7	70 - 130	20	
1,2-Dichlorobenzene	ND	5.0	101	103	2.0	79	86	8.5	70 - 130	20	
1,2-Dichloroethane	ND	5.0	98	99	1.0	88	94	6.6	70 - 130	20	
1,2-Dichloropropane	ND	5.0	96	97	1.0	86	92	6.7	70 - 130	20	
1,3,5-Trimethylbenzene	ND	1.0	96	99	3.1	82	89	8.2	70 - 130	20	
1,3-Dichlorobenzene	ND	5.0	97	98	1.0	75	82	8.9	70 - 130	20	
1,3-Dichloropropane	ND	5.0	98	98	0.0	87	94	7.7	70 - 130	20	
1,4-Dichlorobenzene	ND	5.0	100	102	2.0	77	84	8.7	70 - 130	20	
1,4-dioxane	ND	100	114	120	5.1	115	104	10.0	40 - 160	20	
2,2-Dichloropropane	ND	5.0	97	98	1.0	81	88	8.3	70 - 130	20	
2-Chlorotoluene	ND	5.0	98	101	3.0	82	90	9.3	70 - 130	20	
2-Hexanone	ND	25	94	94	0.0	82	90	9.3	40 - 160	20	
2-Isopropyltoluene	ND	5.0	100	102	2.0	83	91	9.2	70 - 130	20	
4-Chlorotoluene	ND	5.0	98	101	3.0	79	86	8.5	70 - 130	20	
4-Methyl-2-pentanone	ND	25	98	99	1.0	90	99	9.5	40 - 160	20	
Acetone	ND	10	91	90	1.1	84	94	11.2	40 - 160	20	
Acrylonitrile	ND	5.0	95	94	1.1	85	91	6.8	70 - 130	20	
Benzene	ND	1.0	96	99	3.1	87	94	7.7	70 - 130	20	
Bromobenzene	ND	5.0	102	104	1.9	86	93	7.8	70 - 130	20	

QA/QC Data

SDG I.D.: GCS26589

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Bromochloromethane	ND	5.0	100	100	0.0	88	95	7.7	70 - 130	20	
Bromodichloromethane	ND	5.0	96	98	2.1	86	93	7.8	70 - 130	20	
Bromoform	ND	5.0	98	98	0.0	84	93	10.2	70 - 130	20	
Bromomethane	ND	5.0	99	100	1.0	83	87	4.7	40 - 160	20	
Carbon Disulfide	ND	5.0	99	99	0.0	82	89	8.2	70 - 130	20	
Carbon tetrachloride	ND	5.0	95	102	7.1	83	91	9.2	70 - 130	20	
Chlorobenzene	ND	5.0	99	101	2.0	84	91	8.0	70 - 130	20	
Chloroethane	ND	5.0	104	107	2.8	88	99	11.8	70 - 130	20	
Chloroform	ND	5.0	93	95	2.1	83	90	8.1	70 - 130	20	
Chloromethane	ND	5.0	108	110	1.8	93	100	7.3	40 - 160	20	
cis-1,2-Dichloroethene	ND	5.0	96	99	3.1	85	93	9.0	70 - 130	20	
cis-1,3-Dichloropropene	ND	5.0	100	101	1.0	85	93	9.0	70 - 130	20	
Dibromochloromethane	ND	3.0	99	101	2.0	88	96	8.7	70 - 130	20	
Dibromomethane	ND	5.0	101	103	2.0	91	98	7.4	70 - 130	20	
Dichlorodifluoromethane	ND	5.0	129	133	3.1	107	114	6.3	40 - 160	20	
Diethyl ether	ND	5.0	96	95	1.0	84	91	8.0	70 - 130	20	
Di-isopropyl ether	ND	5.0	91	93	2.2	82	88	7.1	70 - 130	20	
Ethyl tert-butyl ether	ND	5.0	92	94	2.2	83	91	9.2	70 - 130	20	
Ethylbenzene	ND	1.0	98	100	2.0	84	91	8.0	70 - 130	20	
Hexachlorobutadiene	ND	5.0	100	104	3.9	63	66	4.7	70 - 130	20	m
Isopropylbenzene	ND	1.0	98	101	3.0	86	94	8.9	70 - 130	20	
m&p-Xylene	ND	2.0	95	98	3.1	82	89	8.2	70 - 130	20	
Methyl ethyl ketone	ND	5.0	93	94	1.1	83	93	11.4	40 - 160	20	
Methyl t-butyl ether (MTBE)	ND	1.0	94	101	7.2	84	94	11.2	70 - 130	20	
Methylene chloride	ND	5.0	95	96	1.0	85	90	5.7	70 - 130	20	
Naphthalene	ND	5.0	103	105	1.9	71	77	8.1	70 - 130	20	
n-Butylbenzene	ND	1.0	98	102	4.0	75	80	6.5	70 - 130	20	
n-Propylbenzene	ND	1.0	99	102	3.0	84	91	8.0	70 - 130	20	
o-Xylene	ND	2.0	98	100	2.0	85	92	7.9	70 - 130	20	
p-Isopropyltoluene	ND	1.0	97	100	3.0	78	85	8.6	70 - 130	20	
sec-Butylbenzene	ND	1.0	97	100	3.0	79	86	8.5	70 - 130	20	
Styrene	ND	5.0	95	96	1.0	77	84	8.7	70 - 130	20	
tert-amyl methyl ether	ND	5.0	94	96	2.1	86	93	7.8	70 - 130	20	
tert-Butylbenzene	ND	1.0	98	102	4.0	84	93	10.2	70 - 130	20	
Tetrachloroethene	ND	5.0	101	104	2.9	88	92	4.4	70 - 130	20	
Tetrahydrofuran (THF)	ND	5.0	95	95	0.0	90	99	9.5	70 - 130	20	
Toluene	ND	1.0	99	102	3.0	88	94	6.6	70 - 130	20	
trans-1,2-Dichloroethene	ND	5.0	98	100	2.0	85	93	9.0	70 - 130	20	
trans-1,3-Dichloropropene	ND	5.0	100	101	1.0	84	92	9.1	70 - 130	20	
trans-1,4-dichloro-2-butene	ND	5.0	103	104	1.0	88	99	11.8	70 - 130	20	
Trichloroethene	ND	5.0	101	104	2.9	90	97	7.5	70 - 130	20	
Trichlorofluoromethane	ND	5.0	105	106	0.9	90	98	8.5	70 - 130	20	
Trichlorotrifluoroethane	ND	5.0	103	106	2.9	91	97	6.4	70 - 130	20	
Vinyl chloride	ND	5.0	105	108	2.8	91	99	8.4	70 - 130	20	
% 1,2-dichlorobenzene-d4	97	%	100	102	2.0	102	101	1.0	70 - 130	20	
% Bromofluorobenzene	99	%	100	99	1.0	98	97	1.0	70 - 130	20	
% Dibromofluoromethane	101	%	98	100	2.0	97	97	0.0	70 - 130	20	
% Toluene-d8	90	%	100	100	0.0	99	98	1.0	70 - 130	20	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

QA/QC Data

SDG I.D.: GCS26589

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 762888 (mg/Kg), QC Sample No: CS26590 50X (CS26590 (50X) , CS26592 (50X) , CS26594 (50X) , CS26596 (50X))										
Volatile Petroleum Hydrocarbons - Soil										
Benzene	ND	13	95	94	1.1	93	93	0.0	70 - 130	25
C5-C8 Aliphatic Hydrocarbons *1,2	ND	250	101	99	2.0	102	101	1.0	70 - 130	25
C9-C10 Aromatic Hydrocarbons *1	ND	83	103	103	0.0	101	103	2.0	70 - 130	25
C9-C12 Aliphatic Hydrocarbons *1,	ND	250	108	104	3.8	110	107	2.8	70 - 130	25
Ethyl Benzene	ND	13	97	95	2.1	94	95	1.1	70 - 130	25
m,p-Xylenes	ND	13	101	100	1.0	99	99	0.0	70 - 130	25
MTBE	ND	2.5	106	103	2.9	118	121	2.5	70 - 130	25
Naphthalene	ND	13	104	104	0.0	99	99	0.0	70 - 130	25
o-Xylene	ND	13	96	95	1.0	93	94	1.1	70 - 130	25
Toluene	ND	13	101	99	2.0	98	98	0.0	70 - 130	25
Unadjusted C5-C8 Aliphatics (*1)	ND	250	101	99	2.0	102	101	1.0	70 - 130	25
Unadjusted C9-C12 Aliphatics (*1)	ND	250	108	104	3.8	110	107	2.8	70 - 130	25
% 2,5-Dibromotoluene (FID)	96	%	100	104	3.9	103	104	1.0	70 - 130	25
% 2,5-Dibromotoluene (PID)	94	%	99	103	4.0	101	102	1.0	70 - 130	25

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.
m = This parameter is outside laboratory MS/MSD specified recovery limits.
r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference
(ISO) - Isotope Dilution

Phyllis Shiller, Laboratory Director
January 07, 2025

Tuesday, January 07, 2025

Criteria: MA: S1

State: MA

Sample Criteria Exceedances Report

GCS26589 - CMGENV

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CS26591	PB-SM	Lead	MA / CMR 310.40.1600 / S1 (mg/kg)	1310	0.34	200	200	mg/Kg
CS26591	PB-SM	Lead	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	1310	0.34	200	200	mg/Kg
CS26592	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	24.6	0.69	20	20	mg/Kg
CS26592	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	24.6	0.69	20	20	mg/Kg
CS26596	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	25.3	0.70	20	20	mg/Kg
CS26596	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	25.3	0.70	20	20	mg/Kg

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Comments

January 07, 2025 SDG I.D.: GCS26589

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report:

VOA Narration

CHEM14 12/17/24-1: CS26590, CS26592, CS26596

The following Initial Calibration compounds did not meet RSD% criteria: 1,4-Dioxane 22% (20%)
The following Initial Calibration compounds did not meet maximum RSD% criteria: None.

Up to eight compounds can be outside of ICAL %RSD criteria and up to sixteen compounds can be outside of CCAL %Dev criteria if less than 40%.

CHEM31 12/18/24-1: CS26594

The following Initial Calibration compounds did not meet RSD% criteria: 1,2-Dibromo-3-chloropropane 27% (20%), 2,2-Dichloropropane 22% (20%), trans-1,3-Dichloropropene 25% (20%), trans-1,4-dichloro-2-butene 36% (20%)
The following Initial Calibration compounds did not meet maximum RSD% criteria: None.
The following Initial Calibration compounds did not meet recommended response factors: 1,1,2-Trichloroethane 0.144 (0.2), 1,2-Dibromoethane 0.157 (0.2), 1,2-Dichloropropane 0.172 (0.2), Bromodichloromethane 0.246 (0.3), cis-1,3-Dichloropropene 0.267 (0.3), Dibromochloromethane 0.198 (0.2), Ethylbenzene 0.352 (0.4), trans-1,3-Dichloropropene 0.221 (0.3)
The following Initial Calibration compounds did not meet minimum response factors: None.

The following Continuing Calibration compounds did not meet % deviation criteria: trans-1,4-dichloro-2-butene 39%H (20%)
The following Continuing Calibration compounds did not meet Maximum % deviation criteria: None.
The following Continuing Calibration compounds did not meet recommended response factors: 1,1,2-Trichloroethane 0.161 (0.2), 1,2-Dibromoethane 0.174 (0.2), 1,2-Dichloropropane 0.190 (0.2), Bromodichloromethane 0.234 (0.3), cis-1,3-Dichloropropene 0.294 (0.3), Ethylbenzene 0.386 (0.4), trans-1,3-Dichloropropene 0.239 (0.3)
The following Continuing Calibration compounds did not meet minimum response factors: Acetone 0.052 (0.05)

Up to eight compounds can be outside of ICAL %RSD criteria and up to sixteen compounds can be outside of CCAL %Dev criteria if less than 40%.

Coolant: IPK ☒ ICE ☐ Cooler: Yes ☒ No ☐ No ☐

CT/MA/RI CHAIN OF CUSTODY RECORD

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Temp 4.3 °C Pg of

Data Delivery/Contact Options:
☐ Fax:
☐ Phone: N Schwenker @ CMG
☒ Email: [illegible]

Customer: CMG
Address: 67 Hall Rd, Sturbridge, MA

Project: 2024-285
Report to: CMG
Invoice to: CMG
Quote #

Project P.O: Blend

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature ______ Date: ______

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
B=Bulk L=Liquid X = ______(Other)

Bottle-type column headings (not filled in): GL Amber 8 oz. [ ] w/H$_3$PO$_4$ [ ] NAHSO$_4$; Soil VOA Vials [X] methanol [4] H$_2$O; GL Soil container ( )oz; GL Soil container (4)oz; 40 ml VOA Vial [ ] As is [ ] HCl; GL Amber 1000ml [ ] As is [ ] H$_2$SO$_4$; PL As is [ ] 250ml [ ] 500ml [ ] 1000ml; PL H$_2$SO$_4$ [ ] 250ml [ ] 500ml; PL HNO$_3$ 250ml; PL NaOH 250ml; Bacteria Bottle w/thio; Bacteria Bottle as is

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD (May be billable at analysis unit rate)	Total Lead	Asbestos in soil	Please Run for Asbestos	8260 VOCs	VPH	EPH	RCRA 8 Metals	Soil VOA Vials	GL Soil container (4)oz
26587	MW-5, 2-3'	S	12/12/24	8:30		✓								1
26590	MW-5, 9-10'			8:35					✓	✓	✓	✓	4	2
26591	MW-6, 2-4'			9:30		✓	✓							1
26592	MW-6, 19-20'			9:40					✓	✓	✓	✓	4	2
26593	MW-7, 4-5'			10:30		✓	✓							1
26594	MW-7, 14.5-16'			10:40					✓	✓	✓	✓	4	2
26595	SB-3, 4-5'			11:40		✓								1
26596	SB-3, 9-10			11:50					✓	✓	✓	✓	4	2

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	12/12/24	2:30
[signature]	[signature]	12/12/24	15:30

Comments, Special Requirements or Regulations:

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ 4 Days*
☐ 5 Days*
☒ Standard
☐ Other ______

RI
☐ RES DEC
☐ I/C DEC
☐ GA Leachability
☐ GB Leachability
☐ GA -GW Objectives
☐ GB -GW Objectives
☐ Other

CT
☐ RCP Cert
☐ GWPC
☐ SWPC
☐ GA PMC
☐ GB PMC
☐ SWPC
☐ RES DEC
☐ I/C DEC

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ SW Protection
☒ RCS-1 / RCGW-1
☐ RCS-2 / RCGW-2
☐ S-1 Calc.
☐ ______

Data Format
☐ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist*
☐ Full Data Package*
☒ Phoenix Std
☐ Other

***MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.**

* SURCHARGES MAY APPLY

State where samples were collected: MA

* SURCHARGE APPLIES

EMSL ANALYTICAL, INC.

Attention: Helen Geoghegan
Phoenix Environmental Laboratories, Inc.
587 East Middle Turnpike
Manchester, CT 06040

Samples analyzed by: EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Tel (800) 220-3675
CinnAsblab@EMSL.com

NVLAP Lab Code: 101048-0
AIHA-LAP, LLC-IHPAT Lab: 100194
NYS ELAP: 10872
NJ DEP: 3036
PA ID: 68-00367

Sample Date: 12/12/2024
Submitted Date: 12/16/2024
Analysis Date: 12/30/2024
Report Date: 1/3/2025

Project: GCS26589 **EMSL ID:** 04-144

Summary Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Sub E App E supplemented with EPA 600/R-93/116

This is page one of the analytical report; data found on subsequent pages.

Samples in this report were submitted to EMSL Analytical Inc. for Asbestos Analysis of Bulk materials via EPA methods and may contain analytical results by PLM friable, PLM 400 Point count or gravimetric reduction of samples by PLM NOB, TEM NOB,PLM NOB 400 PTCT.

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. A combination of PLM and TEM analysis may be necessary to ensure consistently reliable detection of asbestos. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Measurement of uncertainty is available upon request. NOB = Non-friable Organically Bound; N/A = Not Applicable; PTCT = Point Count.

Laboratory Comments: Of the six regulated asbestos types only those reported above were detected. Samples milled prior to analysis.

Samantha Rundstrom, Laboratory Manager
or other approved Signatory

Project: GCS26589 **EMSL Order ID:** 04-144

Summary Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Sub E App E supplemented with EPA 600/R-93/116

Sample	Description	Type of Analysis	Color/Fibrous/ Homogeneity	Non-Asbestos Fibers	%	% Non-Fibrous	Asbestos Type	Asbestos Percentage	Final Asbestos %	Comment
1		PLM 400 PTCT	Brown			100.0	**None Detected**			
			Non-Fibrous							
			Homogeneous							
			--	--	--		**Total Asbestos**	--	--	
2		PLM 400 PTCT	Gray			100.0	**None Detected**			
			Non-Fibrous							
			Homogeneous							
			--	--	--		**Total Asbestos**	--	--	
3		PLM 400 PTCT	Brown			100.0	**None Detected**			
			Non-Fibrous							
			Homogeneous							
			--	--	--		**Total Asbestos**	--	--	
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		

PHOENIX
Environmental Laboratories, Inc.

Tuesday, January 07, 2025

Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Project ID: 2024-285
SDG ID: GCS26597
Sample ID#s: CS26597 - CS26603

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 07, 2025

SDG I.D.: GCS26597

Project ID: 2024-285

Client Id	Lab Id	Matrix
MW-1, 9-10`	CS26597	SOIL
MW-2, 12-13`	CS26598	SOIL
MW-3, 13-14`	CS26599	SOIL
MW-4, 9-10`	CS26600	SOIL
SB-1, 0-5`	CS26601	SOIL
SB-1, 9-10`	CS26602	SOIL
SB-2, 9-10`	CS26603	SOIL

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/11/24	8:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS26597
Phoenix ID: CS26597

Project ID: 2024-285
Client ID: MW-1, 9-10`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.38	0.38	mg/Kg	1	12/14/24	CPP	SW6010D
Arsenic	26.0	0.76	mg/Kg	1	12/14/24	CPP	SW6010D
Barium	72.8	0.38	mg/Kg	1	12/14/24	CPP	SW6010D
Cadmium	< 0.38	0.38	mg/Kg	1	12/14/24	CPP	SW6010D
Chromium	33.2	0.38	mg/Kg	1	12/14/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	8.75	0.38	mg/Kg	1	12/14/24	CPP	SW6010D
Selenium	< 1.5	1.5	mg/Kg	1	12/14/24	CPP	SW6010D
Percent Solid	88		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/11/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	R/H/U	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-1, 9-10`

Phoenix I.D.: CS26597

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.61	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	31	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	31	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	310	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	3.7	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	37	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-1, 9-10`

Phoenix I.D.: CS26597

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	95		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	98		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	96		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	90		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	120	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	6.1	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Anthracene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Chrysene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluoranthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluorene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Pyrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	62		%	1	12/19/24	MR	30 - 130 %
% Nitrobenzene-d5	58		%	1	12/19/24	MR	30 - 130 %
% Terphenyl-d14	77		%	1	12/19/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Acenaphthene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Naphthalene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Phenanthrene	ND	260	ug/Kg	1	12/19/24	MR	MA EPH 5/2004

Project ID: 2024-285
Client ID: MW-1, 9-10`

Phoenix I.D.: CS26597

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	80		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	67		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	80		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	74		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	6.2	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	6.2	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	6.2	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	6.2	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	6.2	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.031	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.062	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.062	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.31	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.062	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.062	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.062	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	92		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	89		%	50	12/16/24	V	70 - 130 %

Project ID: 2024-285
Client ID: MW-1, 9-10`

Phoenix I.D.: CS26597

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

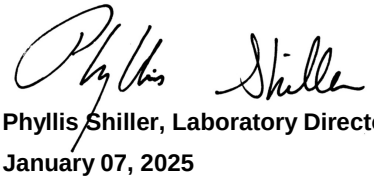
Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/11/24	9:15
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS26597
Phoenix ID: CS26598

Project ID: 2024-285
Client ID: MW-2, 12-13`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.34	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Arsenic	21.5	0.67	mg/Kg	1	12/14/24	CPP	SW6010D
Barium	69.7	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Cadmium	< 0.34	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Chromium	67.8	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	8.18	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Selenium	< 1.3	1.3	mg/Kg	1	12/14/24	CPP	SW6010D
Percent Solid	91		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/11/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	R/H/U	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.4	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.57	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	29	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	29	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	290	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	3.4	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	34	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	11	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	97		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	96		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	101		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	90		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	110	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	5.7	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Chrysene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluoranthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Fluorene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Pyrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	48		%	1	12/19/24	MR	30 - 130 %
% Nitrobenzene-d5	50		%	1	12/19/24	MR	30 - 130 %
% Terphenyl-d14	57		%	1	12/19/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Acenaphthene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Naphthalene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004
Phenanthrene	ND	250	ug/Kg	1	12/19/24	MR	MA EPH 5/2004

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	79		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	65		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	75		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	73		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	6.3	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.032	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.31	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.063	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	90		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	88		%	50	12/16/24	V	70 - 130 %

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Client ID: MW-2, 12-13`

Phoenix I.D.: CS26598

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

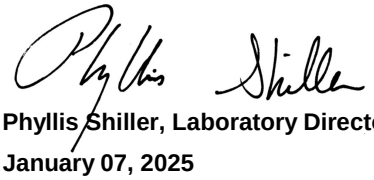
Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/11/24	9:45
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS26597
Phoenix ID: CS26599

Project ID: 2024-285
Client ID: MW-3, 13-14`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.34	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Arsenic	28.8	0.68	mg/Kg	1	12/14/24	CPP	SW6010D
Barium	59.4	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Cadmium	0.39	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Chromium	58.7	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	7.21	0.34	mg/Kg	1	12/14/24	CPP	SW6010D
Selenium	< 1.4	1.4	mg/Kg	1	12/14/24	CPP	SW6010D
Percent Solid	92		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/11/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	H/T	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-3, 13-14`

Phoenix I.D.: CS26599

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.60	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	30	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	30	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	300	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	3.6	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	36	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D

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Client ID: MW-3, 13-14`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	95		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	97		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	99		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	88		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	120	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Anthracene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Chrysene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluoranthene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluorene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Pyrene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	80		%	1	12/18/24	MR	30 - 130 %
% Nitrobenzene-d5	81		%	1	12/18/24	MR	30 - 130 %
% Terphenyl-d14	84		%	1	12/18/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Acenaphthene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Naphthalene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Phenanthrene	ND	250	ug/Kg	1	12/18/24	MR	MA EPH 5/2004

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	71	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	79		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	70		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	78		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	74		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	5.7	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	5.7	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	5.7	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	5.7	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	5.7	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.029	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.058	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.058	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.29	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.058	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.058	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.058	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	91		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	88		%	50	12/16/24	V	70 - 130 %

Project ID: 2024-285
Client ID: MW-3, 13-14`

Phoenix I.D.: CS26599

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/11/24	10:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS26597
Phoenix ID: CS26600

Project ID: 2024-285
Client ID: MW-4, 9-10`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.33	0.33	mg/Kg	1	12/16/24	TH	SW6010D
Arsenic	34.9	0.67	mg/Kg	1	12/16/24	TH	SW6010D
Barium	62.8	0.33	mg/Kg	1	12/16/24	TH	SW6010D
Cadmium	0.43	0.33	mg/Kg	1	12/16/24	TH	SW6010D
Chromium	30.0	0.33	mg/Kg	1	12/16/24	TH	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	9.89	0.33	mg/Kg	1	12/16/24	TH	SW6010D
Selenium	< 1.3	1.3	mg/Kg	1	12/16/24	TH	SW6010D
Percent Solid	89		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/11/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	H/T	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.6	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-4, 9-10`

Phoenix I.D.: CS26600

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.60	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	30	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	30	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	300	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	3.6	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	36	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D

Project ID: 2024-285
Client ID: MW-4, 9-10`

Phoenix I.D.: CS26600

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	12	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	96		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	98		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	104		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	90		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	120	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	6.0	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Chrysene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluorene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	73		%	1	12/18/24	MR	30 - 130 %
% Nitrobenzene-d5	74		%	1	12/18/24	MR	30 - 130 %
% Terphenyl-d14	80		%	1	12/18/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Acenaphthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Naphthalene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Phenanthrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004

Project ID: 2024-285
Client ID: MW-4, 9-10`

Phoenix I.D.: CS26600

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	73	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	88		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	60		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	80		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	81		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	6.0	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	6.0	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	6.0	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	6.0	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	6.0	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.030	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.060	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.060	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.30	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.060	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.060	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.060	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	90		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	87		%	50	12/16/24	V	70 - 130 %

Project ID: 2024-285
Client ID: MW-4, 9-10`

Phoenix I.D.: CS26600

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

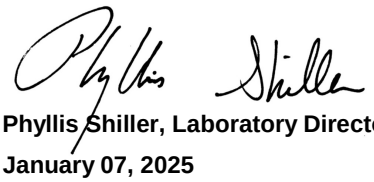
Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/11/24	11:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS26597
Phoenix ID: CS26601

Project ID: 2024-285
Client ID: SB-1, 0-5`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Asbestos	ND	1	%		12/30/24	*	40CFR 763 Sub. E APP

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

Asbestos analysis was analyzed by EMSL Analytical, Inc. Cinnaminson, NJ, accredited under the National Voluntary Laboratory Accreditation Program (NJ NVLAP); Lab Code 101048-0.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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Phyllis Shiller, Laboratory Director
January 07, 2025
Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/11/24	11:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS26597
Phoenix ID: CS26602

Project ID: 2024-285
Client ID: SB-1, 9-10`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.38	0.38	mg/Kg	1	12/16/24	TH	SW6010D
Arsenic	26.0	0.77	mg/Kg	1	12/16/24	TH	SW6010D
Barium	75.2	0.38	mg/Kg	1	12/16/24	TH	SW6010D
Cadmium	< 0.38	0.38	mg/Kg	1	12/16/24	TH	SW6010D
Chromium	31.5	0.38	mg/Kg	1	12/16/24	TH	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	8.09	0.38	mg/Kg	1	12/16/24	TH	SW6010D
Selenium	< 1.5	1.5	mg/Kg	1	12/16/24	TH	SW6010D
Percent Solid	88		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/11/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	H/T	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	3.0	ug/Kg	1	12/18/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,1-Dichloroethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,1-Dichloroethene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,1-Dichloropropene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D

Project ID: 2024-285
Client ID: SB-1, 9-10`

Phoenix I.D.: CS26602

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.49	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dichloroethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,2-Dichloropropane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,3-Dichloropropane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
2,2-Dichloropropane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
2-Chlorotoluene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
2-Hexanone	ND	25	ug/Kg	1	12/18/24	JLI	SW8260D
2-Isopropyltoluene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
4-Chlorotoluene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	25	ug/Kg	1	12/18/24	JLI	SW8260D
Acetone	ND	250	ug/Kg	1	12/18/24	JLI	SW8260D
Acrylonitrile	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Benzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Bromobenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Bromochloromethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Bromodichloromethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Bromoform	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Bromomethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Carbon Disulfide	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Carbon tetrachloride	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Chlorobenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Chloroethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Chloroform	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Chloromethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Dibromochloromethane	ND	3.0	ug/Kg	1	12/18/24	JLI	SW8260D
Dibromomethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Dichlorodifluoromethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Ethylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Hexachlorobutadiene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Isopropylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
m&p-Xylene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	30	ug/Kg	1	12/18/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	9.9	ug/Kg	1	12/18/24	JLI	SW8260D
Methylene chloride	ND	9.9	ug/Kg	1	12/18/24	JLI	SW8260D
Naphthalene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
n-Butylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
n-Propylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
o-Xylene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
p-Isopropyltoluene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
sec-Butylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D

Project ID: 2024-285
Client ID: SB-1, 9-10`

Phoenix I.D.: CS26602

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
tert-Butylbenzene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Tetrachloroethene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	9.9	ug/Kg	1	12/18/24	JLI	SW8260D
Toluene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Total Xylenes	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	9.9	ug/Kg	1	12/18/24	JLI	SW8260D
Trichloroethene	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Trichlorofluoromethane	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	9.9	ug/Kg	1	12/18/24	JLI	SW8260D
Vinyl chloride	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	98		%	1	12/18/24	JLI	70 - 130 %
% Bromofluorobenzene	92		%	1	12/18/24	JLI	70 - 130 %
% Dibromofluoromethane	90		%	1	12/18/24	JLI	70 - 130 %
% Toluene-d8	100		%	1	12/18/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	99	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
Diethyl ether	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	4.9	ug/Kg	1	12/18/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Chrysene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluorene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	72		%	1	12/18/24	MR	30 - 130 %
% Nitrobenzene-d5	71		%	1	12/18/24	MR	30 - 130 %
% Terphenyl-d14	80		%	1	12/18/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Acenaphthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Naphthalene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Phenanthrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004

Project ID: 2024-285
Client ID: SB-1, 9-10`

Phoenix I.D.: CS26602

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	75	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	75	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	75	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	75	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	70		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	93		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	90		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	79		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	6.5	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	6.5	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	6.5	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	6.5	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	6.5	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.033	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.066	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.066	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.33	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.066	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.066	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.066	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	93		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	89		%	50	12/16/24	V	70 - 130 %

Project ID: 2024-285
Client ID: SB-1, 9-10`

Phoenix I.D.: CS26602

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

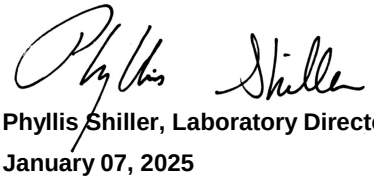
Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 07, 2025

FOR: Attn: Gary Magnuson
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SOIL	Collected by:		12/11/24	12:30
Location Code:	CMGENV	Received by:	SR1	12/12/24	15:30
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS26597
Phoenix ID: CS26603

Project ID: 2024-285
Client ID: SB-2, 9-10`

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.39	0.39	mg/Kg	1	12/16/24	TH	SW6010D
Arsenic	23.4	0.77	mg/Kg	1	12/16/24	TH	SW6010D
Barium	56.1	0.39	mg/Kg	1	12/16/24	TH	SW6010D
Cadmium	0.41	0.39	mg/Kg	1	12/16/24	TH	SW6010D
Chromium	28.4	0.39	mg/Kg	1	12/16/24	TH	SW6010D
Mercury	< 0.03	0.03	mg/Kg	2	12/19/24	ZT	SW7471B
Lead	8.42	0.39	mg/Kg	1	12/16/24	TH	SW6010D
Selenium	< 1.5	1.5	mg/Kg	1	12/16/24	TH	SW6010D
Percent Solid	90		%		12/12/24	CV	SW846-%Solid
Field Extraction	Completed				12/11/24		SW5035A
Mercury Digestion	Completed				12/19/24	AC1/AC1	SW7471B
EPH Extraction	Completed				12/14/24	H/K/K	SW3546
Soil Extraction for SVOA PAH	Completed				12/18/24	H/T	SW3546
Total Metals Digest	Completed				12/13/24	P/AG	SW3050B
Ext. Petroleum Hydrocarbons	Completed				12/12/24		MADEP EPH-19
MA Petroleum Hydrocarbon (VPH)	Completed				12/16/24	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,1-Trichloroethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2,2-Tetrachloroethane	ND	4.3	ug/Kg	1	12/17/24	JLI	SW8260D
1,1,2-Trichloroethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloroethene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,1-Dichloropropene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichlorobenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,3-Trichloropropane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trichlorobenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2,4-Trimethylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromo-3-chloropropane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dibromoethane	ND	0.72	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichlorobenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloroethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,2-Dichloropropane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,3,5-Trimethylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichlorobenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,3-Dichloropropane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
1,4-Dichlorobenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
2,2-Dichloropropane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
2-Chlorotoluene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
2-Hexanone	ND	36	ug/Kg	1	12/17/24	JLI	SW8260D
2-Isopropyltoluene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
4-Chlorotoluene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
4-Methyl-2-pentanone	ND	36	ug/Kg	1	12/17/24	JLI	SW8260D
Acetone	ND	360	ug/Kg	1	12/17/24	JLI	SW8260D
Acrylonitrile	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Benzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromobenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromochloromethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromodichloromethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromoform	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Bromomethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon Disulfide	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Carbon tetrachloride	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chlorobenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chloroform	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Chloromethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,2-Dichloroethene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
cis-1,3-Dichloropropene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromochloromethane	ND	4.3	ug/Kg	1	12/17/24	JLI	SW8260D
Dibromomethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Dichlorodifluoromethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Ethylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Hexachlorobutadiene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Isopropylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
m&p-Xylene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl Ethyl Ketone	ND	43	ug/Kg	1	12/17/24	JLI	SW8260D
Methyl t-butyl ether (MTBE)	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Methylene chloride	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Naphthalene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
n-Butylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
n-Propylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
o-Xylene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
p-Isopropyltoluene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
sec-Butylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Styrene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
tert-Butylbenzene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrachloroethene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Tetrahydrofuran (THF)	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Toluene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Total Xylenes	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,2-Dichloroethene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,3-Dichloropropene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
trans-1,4-dichloro-2-butene	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Trichloroethene	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorofluoromethane	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
Trichlorotrifluoroethane	ND	14	ug/Kg	1	12/17/24	JLI	SW8260D
Vinyl chloride	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	95		%	1	12/17/24	JLI	70 - 130 %
% Bromofluorobenzene	99		%	1	12/17/24	JLI	70 - 130 %
% Dibromofluoromethane	101		%	1	12/17/24	JLI	70 - 130 %
% Toluene-d8	92		%	1	12/17/24	JLI	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	140	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Diethyl ether	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Di-isopropyl ether	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
Ethyl tert-butyl ether	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
tert-amyl methyl ether	ND	7.2	ug/Kg	1	12/17/24	JLI	SW8260D (OXY)
EPH Other PAH Target Analytes							
Acenaphthylene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benz(a)anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(a)pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(b)fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(ghi)perylene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Benzo(k)fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Chrysene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Dibenz(a,h)anthracene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluoranthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Fluorene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Indeno(1,2,3-cd)pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Pyrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
QA/QC Surrogates							
% 2-Fluorobiphenyl	73		%	1	12/18/24	MR	30 - 130 %
% Nitrobenzene-d5	74		%	1	12/18/24	MR	30 - 130 %
% Terphenyl-d14	83		%	1	12/18/24	MR	30 - 130 %
EPH Diesel PAH Target Analytes							
2-Methylnaphthalene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Acenaphthene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Naphthalene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004
Phenanthrene	ND	260	ug/Kg	1	12/18/24	MR	MA EPH 5/2004

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	74	mg/Kg	1	12/17/24	AW	MA EPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	99		%	1	12/17/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	89		%	1	12/17/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	97		%	1	12/17/24	AW	40 - 140 %
% o-terphenyl (aromatic)	91		%	1	12/17/24	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	5.1	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Unadjusted C9-C12 Aliphatics (*1)	ND	5.1	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C5-C8 Aliphatic Hydrocarbons *1,2	ND	5.1	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C12 Aliphatic Hydrocarbons *1,3	ND	5.1	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
C9-C10 Aromatic Hydrocarbons *1	ND	5.1	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Benzene	ND	0.026	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Ethyl Benzene	ND	0.051	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
MTBE	ND	0.051	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Naphthalene	ND	0.26	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
Toluene	ND	0.051	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
m,p-Xylenes	ND	0.051	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
o-Xylene	ND	0.051	mg/Kg	50	12/16/24	V	MA VPH2.1, 2018
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	94		%	50	12/16/24	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	92		%	50	12/16/24	V	70 - 130 %

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Client ID: SB-2, 9-10`

Phoenix I.D.: CS26603

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

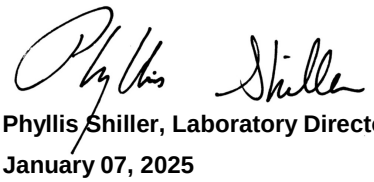
Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude concentrations of any surrogate(s) and/or Internal stds eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbons.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

January 07, 2025

Reviewed and Released by: Alejandro Paredes, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

QA/QC Report

January 07, 2025

QA/QC Data

SDG I.D.: GCS26597

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 763304 (mg/kg), QC Sample No: CS12593 2X (CS26597)													
Mercury - Soil	BRL	0.03	0.06	0.06	NC	95.6	85.7	10.9	109	120	9.6	75 - 125	30
Comment: Additional Mercury Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range is 75-125% for aqueous and 80-120% for soils.													
QA/QC Batch 763307 (mg/kg), QC Sample No: CS27226 2X (CS26598, CS26599, CS26600, CS26602, CS26603)													
Mercury - Soil	BRL	0.02	<0.03	<0.03	NC	104	108	3.8	102	116	12.8	75 - 125	30
Comment: Additional Mercury Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range is 75-125% for aqueous and 80-120% for soils.													
QA/QC Batch 762477 (mg/kg), QC Sample No: CS25642 (CS26597, CS26598, CS26599)													
ICP Metals - Soil													
Arsenic	BRL	0.67	0.84	1.05	NC	98.7	104	5.2	95.7			75 - 125	30
Barium	BRL	0.33	14.5	19.2	27.9	100	103	3.0	105			75 - 125	30
Cadmium	BRL	0.33	<0.41	<0.39	NC	103	107	3.8	101			75 - 125	30
Chromium	BRL	0.33	4.18	4.01	4.20	104	111	6.5	103			75 - 125	30
Lead	BRL	0.33	3.73	4.51	18.9	98.1	103	4.9	100			75 - 125	30
Selenium	BRL	1.3	<1.6	<1.6	NC	89.0	98.1	9.7	86.0			75 - 125	30
Silver	BRL	0.33	<0.41	<0.39	NC	103	108	4.7	97.9			75 - 125	30
Comment: Additional Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range 75-125%.													
QA/QC Batch 762478 (mg/kg), QC Sample No: CS26600 (CS26600, CS26602, CS26603)													
ICP Metals - Soil													
Arsenic	BRL	0.67	34.9	34.0	2.60	97.1	101	3.9	92.7			75 - 125	30
Barium	BRL	0.33	62.8	63.2	0.60	92.0	97.8	6.1	100			75 - 125	30
Cadmium	BRL	0.33	0.43	0.44	NC	95.3	104	8.7	92.7			75 - 125	30
Chromium	BRL	0.33	30.0	30.5	1.70	101	106	4.8	97.8			75 - 125	30
Lead	BRL	0.33	9.89	9.27	6.50	97.8	102	4.2	98.5			75 - 125	30
Selenium	BRL	1.3	<1.3	<1.4	NC	88.3	92.3	4.4	80.2			75 - 125	30
Silver	BRL	0.33	<0.33	<0.34	NC	102	106	3.8	95.9			75 - 125	30
Comment: Additional Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range 75-125%.													

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QA/QC Report

January 07, 2025

QA/QC Data

SDG I.D.: GCS26597

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 762578 (mg/kg), QC Sample No: CS26670 (CS26597, CS26598, CS26599, CS26600, CS26602, CS26603)											
Extractable Petroleum Hydrocarbons - Soil											
C11-C22 Aromatic Hydrocarbons U	ND	3.3							40 - 140	25	
C9-C18 Aliphatic Hydrocarbons 1*	ND	3.3	54	51	5.7	66	64	3.1	40 - 140	25	
C19-C36 Aliphatic Hydrocarbons 1*	ND	3.3	66	63	4.7	75	70	6.9	40 - 140	25	
C11-C22 Aromatic Hydrocarbons 1	ND	3.3	72	68	5.7	71	75	5.5	40 - 140	25	
C9 - Nonane	ND	0.67	32	32	0.0	34	35	2.9	40 - 140	25	l,m
C-10 Decane	ND	0.67	42	42	0.0	44	44	0.0	40 - 140	25	
C12 - Dodecane	ND	0.67	48	47	2.1	55	52	5.6	40 - 140	25	
C14 - Tetradecane	ND	0.67	55	50	9.5	74	67	9.9	40 - 140	25	
C16 - Hexadecane	ND	0.67	61	58	5.0	96	82	15.7	40 - 140	25	
C18 - Octadecane	ND	0.67	85	79	7.3	90	105	15.4	40 - 140	25	
C19 - Nonadecane	ND	0.67	67	64	4.6	92	86	6.7	40 - 140	25	
C20 - Eicosane	ND	0.67	73	69	5.6	95	82	14.7	40 - 140	25	
C22 - Docosane	ND	0.67	78	73	6.6	82	78	5.0	40 - 140	25	
C24 - Tetracosane	ND	0.67	69	66	4.4	74	71	4.1	40 - 140	25	
C26 - Hexacosane	ND	0.67	67	64	4.6	71	69	2.9	40 - 140	25	
C28 - Octacosane	ND	0.67	66	64	3.1	71	67	5.8	40 - 140	25	
C30 - Tricotane	ND	0.67	67	63	6.2	70	67	4.4	40 - 140	25	
C36 - Hexatriacontane	ND	0.67	41	41	0.0	44	41	7.1	40 - 140	25	
% 1-chlorooctadecane (aliphatic)	62	%	69	65	6.0	79	74	6.5	40 - 140	25	
% o-terphenyl (aromatic)	80	%	82	76	7.6	80	83	3.7	40 - 140	25	
% 2-Fluorobiphenyl (Fractionation)	97	%	96	90	6.5	98	104	5.9	40 - 140	25	
% 2-Bromonaphthalene (Fractionati	84	%	80	74	7.8	83	84	1.2	40 - 140	25	
% 2-Methylnaphthalene BT		%	0.60	0.50	18.2				0 - 5		
% Naphthalene BT		%	0	0	NC				0 - 5		
Comment:											
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%											
QA/QC Batch 763131 (ug/kg), QC Sample No: CS25896 (CS26597, CS26598)											
Polynuclear Aromatic HC - Soil											
2-Methylnaphthalene	ND	230	61	68	10.9	69	80	14.8	40 - 140	30	
Acenaphthene	ND	230	55	62	12.0	62	71	13.5	40 - 140	30	
Acenaphthylene	ND	230	49	54	9.7	54	61	12.2	40 - 140	30	
Anthracene	ND	230	58	66	12.9	65	78	18.2	40 - 140	30	
Benz(a)anthracene	ND	230	63	70	10.5	72	84	15.4	40 - 140	30	
Benzo(a)pyrene	ND	230	63	72	13.3	71	84	16.8	40 - 140	30	
Benzo(b)fluoranthene	ND	230	55	67	19.7	66	75	12.8	40 - 140	30	
Benzo(ghi)perylene	ND	230	63	68	7.6	69	83	18.4	40 - 140	30	
Benzo(k)fluoranthene	ND	230	55	64	15.1	66	74	11.4	40 - 140	30	
Chrysene	ND	230	56	64	13.3	64	74	14.5	40 - 140	30	
Dibenz(a,h)anthracene	ND	230	67	72	7.2	73	87	17.5	40 - 140	30	
Fluoranthene	ND	230	59	69	15.6	67	76	12.6	40 - 140	30	

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Fluorene	ND	230	58	65	11.4	65	75	14.3	40 - 140	30
Indeno(1,2,3-cd)pyrene	ND	230	64	69	7.5	69	84	19.6	40 - 140	30
Naphthalene	ND	230	54	60	10.5	61	69	12.3	40 - 140	30
Phenanthrene	ND	230	58	66	12.9	66	77	15.4	40 - 140	30
Pyrene	ND	230	56	67	17.9	64	73	13.1	40 - 140	30
% 2-Fluorobiphenyl	57	%	52	58	10.9	58	67	14.4	30 - 130	30
% Nitrobenzene-d5	62	%	56	63	11.8	63	70	10.5	30 - 130	30
% Terphenyl-d14	59	%	54	67	21.5	64	72	11.8	30 - 130	30

Comment:

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 763133 (ug/kg), QC Sample No: CS26670 (CS26599, CS26600, CS26602, CS26603)

Polynuclear Aromatic HC - Soil

2-Methylnaphthalene	ND	230	74	72	2.7	65	71	8.8	40 - 140	30
Acenaphthene	ND	230	75	72	4.1	65	72	10.2	40 - 140	30
Acenaphthylene	ND	230	66	67	1.5	60	66	9.5	40 - 140	30
Anthracene	ND	230	75	79	5.2	72	80	10.5	40 - 140	30
Benz(a)anthracene	ND	230	82	85	3.6	76	84	10.0	40 - 140	30
Benzo(a)pyrene	ND	230	81	84	3.6	77	85	9.9	40 - 140	30
Benzo(b)fluoranthene	ND	230	75	79	5.2	72	79	9.3	40 - 140	30
Benzo(ghi)perylene	ND	230	79	82	3.7	74	81	9.0	40 - 140	30
Benzo(k)fluoranthene	ND	230	75	79	5.2	71	78	9.4	40 - 140	30
Chrysene	ND	230	76	80	5.1	72	80	10.5	40 - 140	30
Dibenz(a,h)anthracene	ND	230	82	86	4.8	78	85	8.6	40 - 140	30
Fluoranthene	ND	230	78	83	6.2	74	81	9.0	40 - 140	30
Fluorene	ND	230	77	78	1.3	70	77	9.5	40 - 140	30
Indeno(1,2,3-cd)pyrene	ND	230	78	81	3.8	74	81	9.0	40 - 140	30
Naphthalene	ND	230	66	67	1.5	58	64	9.8	40 - 140	30
Phenanthrene	ND	230	75	78	3.9	70	79	12.1	40 - 140	30
Pyrene	ND	230	74	78	5.3	72	79	9.3	40 - 140	30
% 2-Fluorobiphenyl	73	%	70	71	1.4	63	69	9.1	30 - 130	30
% Nitrobenzene-d5	75	%	70	66	5.9	60	66	9.5	30 - 130	30
% Terphenyl-d14	81	%	75	78	3.9	72	79	9.3	30 - 130	30

Comment:

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 763410 (ug/kg), QC Sample No: CS27838 (CS26602)

Volatiles - Soil (Low Level)

1,1,1,2-Tetrachloroethane	ND	5.0	103	107	3.8				70 - 130	20
1,1,1-Trichloroethane	ND	5.0	93	95	2.1				70 - 130	20
1,1,2,2-Tetrachloroethane	ND	3.0	111	116	4.4				70 - 130	20
1,1,2-Trichloroethane	ND	5.0	107	108	0.9				70 - 130	20
1,1-Dichloroethane	ND	5.0	89	92	3.3				70 - 130	20
1,1-Dichloroethene	ND	5.0	99	100	1.0				70 - 130	20
1,1-Dichloropropene	ND	5.0	100	104	3.9				70 - 130	20
1,2,3-Trichlorobenzene	ND	5.0	102	102	0.0				70 - 130	20
1,2,3-Trichloropropane	ND	5.0	96	100	4.1				70 - 130	20
1,2,4-Trichlorobenzene	ND	5.0	99	100	1.0				70 - 130	20
1,2,4-Trimethylbenzene	ND	1.0	101	103	2.0				70 - 130	20
1,2-Dibromo-3-chloropropane	ND	5.0	110	113	2.7				70 - 130	20
1,2-Dibromoethane	ND	5.0	105	107	1.9				70 - 130	20
1,2-Dichlorobenzene	ND	5.0	102	104	1.9				70 - 130	20

QA/QC Data

SDG I.D.: GCS26597

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,2-Dichloroethane	ND	5.0	84	84	0.0				70 - 130	20
1,2-Dichloropropane	ND	5.0	108	109	0.9				70 - 130	20
1,3,5-Trimethylbenzene	ND	1.0	103	105	1.9				70 - 130	20
1,3-Dichlorobenzene	ND	5.0	104	106	1.9				70 - 130	20
1,3-Dichloropropane	ND	5.0	104	105	1.0				70 - 130	20
1,4-Dichlorobenzene	ND	5.0	102	104	1.9				70 - 130	20
1,4-dioxane	ND	100	88	99	11.8				40 - 160	20
2,2-Dichloropropane	ND	5.0	90	95	5.4				70 - 130	20
2-Chlorotoluene	ND	5.0	109	111	1.8				70 - 130	20
2-Hexanone	ND	25	106	110	3.7				40 - 160	20
2-Isopropyltoluene	ND	5.0	107	108	0.9				70 - 130	20
4-Chlorotoluene	ND	5.0	104	107	2.8				70 - 130	20
4-Methyl-2-pentanone	ND	25	102	106	3.8				40 - 160	20
Acetone	ND	10	80	84	4.9				40 - 160	20
Acrylonitrile	ND	5.0	97	100	3.0				70 - 130	20
Benzene	ND	1.0	106	108	1.9				70 - 130	20
Bromobenzene	ND	5.0	106	108	1.9				70 - 130	20
Bromochloromethane	ND	5.0	104	104	0.0				70 - 130	20
Bromodichloromethane	ND	5.0	93	94	1.1				70 - 130	20
Bromoform	ND	5.0	101	104	2.9				70 - 130	20
Bromomethane	ND	5.0	87	87	0.0				40 - 160	20
Carbon Disulfide	ND	5.0	98	98	0.0				70 - 130	20
Carbon tetrachloride	ND	5.0	93	94	1.1				70 - 130	20
Chlorobenzene	ND	5.0	104	106	1.9				70 - 130	20
Chloroethane	ND	5.0	97	96	1.0				70 - 130	20
Chloroform	ND	5.0	95	97	2.1				70 - 130	20
Chloromethane	ND	5.0	124	126	1.6				40 - 160	20
cis-1,2-Dichloroethene	ND	5.0	110	112	1.8				70 - 130	20
cis-1,3-Dichloropropene	ND	5.0	107	109	1.9				70 - 130	20
Dibromochloromethane	ND	3.0	100	102	2.0				70 - 130	20
Dibromomethane	ND	5.0	98	101	3.0				70 - 130	20
Dichlorodifluoromethane	ND	5.0	96	99	3.1				40 - 160	20
Diethyl ether	ND	5.0	86	91	5.6				70 - 130	20
Di-isopropyl ether	ND	5.0	92	94	2.2				70 - 130	20
Ethyl tert-butyl ether	ND	5.0	89	93	4.4				70 - 130	20
Ethylbenzene	ND	1.0	106	107	0.9				70 - 130	20
Hexachlorobutadiene	ND	5.0	95	93	2.1				70 - 130	20
Isopropylbenzene	ND	1.0	109	112	2.7				70 - 130	20
m&p-Xylene	ND	2.0	105	106	0.9				70 - 130	20
Methyl ethyl ketone	ND	5.0	92	98	6.3				40 - 160	20
Methyl t-butyl ether (MTBE)	ND	1.0	84	86	2.4				70 - 130	20
Methylene chloride	ND	5.0	92	93	1.1				70 - 130	20
Naphthalene	ND	5.0	113	116	2.6				70 - 130	20
n-Butylbenzene	ND	1.0	107	108	0.9				70 - 130	20
n-Propylbenzene	ND	1.0	110	111	0.9				70 - 130	20
o-Xylene	ND	2.0	106	108	1.9				70 - 130	20
p-Isopropyltoluene	ND	1.0	105	106	0.9				70 - 130	20
sec-Butylbenzene	ND	1.0	109	110	0.9				70 - 130	20
Styrene	ND	5.0	108	110	1.8				70 - 130	20
tert-amyl methyl ether	ND	5.0	98	102	4.0				70 - 130	20
tert-Butylbenzene	ND	1.0	105	105	0.0				70 - 130	20
Tetrachloroethene	ND	5.0	104	106	1.9				70 - 130	20
Tetrahydrofuran (THF)	ND	5.0	102	106	3.8				70 - 130	20

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Toluene	ND	1.0	105	107	1.9				70 - 130	20	
trans-1,2-Dichloroethene	ND	5.0	97	99	2.0				70 - 130	20	
trans-1,3-Dichloropropene	ND	5.0	105	106	0.9				70 - 130	20	
trans-1,4-dichloro-2-butene	ND	5.0	132	135	2.2				70 - 130	20	l
Trichloroethene	ND	5.0	102	104	1.9				70 - 130	20	
Trichlorofluoromethane	ND	5.0	79	81	2.5				70 - 130	20	
Trichlorotrifluoroethane	ND	5.0	93	99	6.3				70 - 130	20	
Vinyl chloride	ND	5.0	107	107	0.0				70 - 130	20	
% 1,2-dichlorobenzene-d4	99	%	99	99	0.0				70 - 130	20	
% Bromofluorobenzene	92	%	95	94	1.1				70 - 130	20	
% Dibromofluoromethane	94	%	96	94	2.1				70 - 130	20	
% Toluene-d8	99	%	101	101	0.0				70 - 130	20	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

QA/QC Batch 763117 (ug/kg), QC Sample No: CS28161 (CS26597, CS26598, CS26599, CS26600, CS26603)

Volatiles - Soil (Low Level)

1,1,1,2-Tetrachloroethane	ND	5.0	98	100	2.0	86	95	9.9	70 - 130	20	
1,1,1-Trichloroethane	ND	5.0	96	100	4.1	85	92	7.9	70 - 130	20	
1,1,2,2-Tetrachloroethane	ND	3.0	98	100	2.0	91	99	8.4	70 - 130	20	
1,1,2-Trichloroethane	ND	5.0	100	102	2.0	91	98	7.4	70 - 130	20	
1,1-Dichloroethane	ND	5.0	95	97	2.1	83	91	9.2	70 - 130	20	
1,1-Dichloroethene	ND	5.0	100	102	2.0	87	94	7.7	70 - 130	20	
1,1-Dichloropropene	ND	5.0	99	101	2.0	87	95	8.8	70 - 130	20	
1,2,3-Trichlorobenzene	ND	5.0	102	103	1.0	63	68	7.6	70 - 130	20	m
1,2,3-Trichloropropane	ND	5.0	89	89	0.0	84	92	9.1	70 - 130	20	
1,2,4-Trichlorobenzene	ND	5.0	97	99	2.0	62	68	9.2	70 - 130	20	m
1,2,4-Trimethylbenzene	ND	1.0	96	99	3.1	81	88	8.3	70 - 130	20	
1,2-Dibromo-3-chloropropane	ND	5.0	105	106	0.9	91	102	11.4	70 - 130	20	
1,2-Dibromoethane	ND	5.0	101	101	0.0	88	97	9.7	70 - 130	20	
1,2-Dichlorobenzene	ND	5.0	101	103	2.0	79	86	8.5	70 - 130	20	
1,2-Dichloroethane	ND	5.0	98	99	1.0	88	94	6.6	70 - 130	20	
1,2-Dichloropropane	ND	5.0	96	97	1.0	86	92	6.7	70 - 130	20	
1,3,5-Trimethylbenzene	ND	1.0	96	99	3.1	82	89	8.2	70 - 130	20	
1,3-Dichlorobenzene	ND	5.0	97	98	1.0	75	82	8.9	70 - 130	20	
1,3-Dichloropropane	ND	5.0	98	98	0.0	87	94	7.7	70 - 130	20	
1,4-Dichlorobenzene	ND	5.0	100	102	2.0	77	84	8.7	70 - 130	20	
1,4-dioxane	ND	100	114	120	5.1	115	104	10.0	40 - 160	20	
2,2-Dichloropropane	ND	5.0	97	98	1.0	81	88	8.3	70 - 130	20	
2-Chlorotoluene	ND	5.0	98	101	3.0	82	90	9.3	70 - 130	20	
2-Hexanone	ND	25	94	94	0.0	82	90	9.3	40 - 160	20	
2-Isopropyltoluene	ND	5.0	100	102	2.0	83	91	9.2	70 - 130	20	
4-Chlorotoluene	ND	5.0	98	101	3.0	79	86	8.5	70 - 130	20	
4-Methyl-2-pentanone	ND	25	98	99	1.0	90	99	9.5	40 - 160	20	
Acetone	ND	10	91	90	1.1	84	94	11.2	40 - 160	20	
Acrylonitrile	ND	5.0	95	94	1.1	85	91	6.8	70 - 130	20	
Benzene	ND	1.0	96	99	3.1	87	94	7.7	70 - 130	20	
Bromobenzene	ND	5.0	102	104	1.9	86	93	7.8	70 - 130	20	
Bromochloromethane	ND	5.0	100	100	0.0	88	95	7.7	70 - 130	20	
Bromodichloromethane	ND	5.0	96	98	2.1	86	93	7.8	70 - 130	20	
Bromoform	ND	5.0	98	98	0.0	84	93	10.2	70 - 130	20	

QA/QC Data

SDG I.D.: GCS26597

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Bromomethane	ND	5.0	99	100	1.0	83	87	4.7	40 - 160	20	
Carbon Disulfide	ND	5.0	99	99	0.0	82	89	8.2	70 - 130	20	
Carbon tetrachloride	ND	5.0	95	102	7.1	83	91	9.2	70 - 130	20	
Chlorobenzene	ND	5.0	99	101	2.0	84	91	8.0	70 - 130	20	
Chloroethane	ND	5.0	104	107	2.8	88	99	11.8	70 - 130	20	
Chloroform	ND	5.0	93	95	2.1	83	90	8.1	70 - 130	20	
Chloromethane	ND	5.0	108	110	1.8	93	100	7.3	40 - 160	20	
cis-1,2-Dichloroethene	ND	5.0	96	99	3.1	85	93	9.0	70 - 130	20	
cis-1,3-Dichloropropene	ND	5.0	100	101	1.0	85	93	9.0	70 - 130	20	
Dibromochloromethane	ND	3.0	99	101	2.0	88	96	8.7	70 - 130	20	
Dibromomethane	ND	5.0	101	103	2.0	91	98	7.4	70 - 130	20	
Dichlorodifluoromethane	ND	5.0	129	133	3.1	107	114	6.3	40 - 160	20	
Diethyl ether	ND	5.0	96	95	1.0	84	91	8.0	70 - 130	20	
Di-isopropyl ether	ND	5.0	91	93	2.2	82	88	7.1	70 - 130	20	
Ethyl tert-butyl ether	ND	5.0	92	94	2.2	83	91	9.2	70 - 130	20	
Ethylbenzene	ND	1.0	98	100	2.0	84	91	8.0	70 - 130	20	
Hexachlorobutadiene	ND	5.0	100	104	3.9	63	66	4.7	70 - 130	20	m
Isopropylbenzene	ND	1.0	98	101	3.0	86	94	8.9	70 - 130	20	
m&p-Xylene	ND	2.0	95	98	3.1	82	89	8.2	70 - 130	20	
Methyl ethyl ketone	ND	5.0	93	94	1.1	83	93	11.4	40 - 160	20	
Methyl t-butyl ether (MTBE)	ND	1.0	94	101	7.2	84	94	11.2	70 - 130	20	
Methylene chloride	ND	5.0	95	96	1.0	85	90	5.7	70 - 130	20	
Naphthalene	ND	5.0	103	105	1.9	71	77	8.1	70 - 130	20	
n-Butylbenzene	ND	1.0	98	102	4.0	75	80	6.5	70 - 130	20	
n-Propylbenzene	ND	1.0	99	102	3.0	84	91	8.0	70 - 130	20	
o-Xylene	ND	2.0	98	100	2.0	85	92	7.9	70 - 130	20	
p-Isopropyltoluene	ND	1.0	97	100	3.0	78	85	8.6	70 - 130	20	
sec-Butylbenzene	ND	1.0	97	100	3.0	79	86	8.5	70 - 130	20	
Styrene	ND	5.0	95	96	1.0	77	84	8.7	70 - 130	20	
tert-amyl methyl ether	ND	5.0	94	96	2.1	86	93	7.8	70 - 130	20	
tert-Butylbenzene	ND	1.0	98	102	4.0	84	93	10.2	70 - 130	20	
Tetrachloroethene	ND	5.0	101	104	2.9	88	92	4.4	70 - 130	20	
Tetrahydrofuran (THF)	ND	5.0	95	95	0.0	90	99	9.5	70 - 130	20	
Toluene	ND	1.0	99	102	3.0	88	94	6.6	70 - 130	20	
trans-1,2-Dichloroethene	ND	5.0	98	100	2.0	85	93	9.0	70 - 130	20	
trans-1,3-Dichloropropene	ND	5.0	100	101	1.0	84	92	9.1	70 - 130	20	
trans-1,4-dichloro-2-butene	ND	5.0	103	104	1.0	88	99	11.8	70 - 130	20	
Trichloroethene	ND	5.0	101	104	2.9	90	97	7.5	70 - 130	20	
Trichlorofluoromethane	ND	5.0	105	106	0.9	90	98	8.5	70 - 130	20	
Trichlorotrifluoroethane	ND	5.0	103	106	2.9	91	97	6.4	70 - 130	20	
Vinyl chloride	ND	5.0	105	108	2.8	91	99	8.4	70 - 130	20	
% 1,2-dichlorobenzene-d4	97	%	100	102	2.0	102	101	1.0	70 - 130	20	
% Bromofluorobenzene	99	%	100	99	1.0	98	97	1.0	70 - 130	20	
% Dibromofluoromethane	101	%	98	100	2.0	97	97	0.0	70 - 130	20	
% Toluene-d8	90	%	100	100	0.0	99	98	1.0	70 - 130	20	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

QA/QC Batch 762888 (mg/Kg), QC Sample No: CS26590 50X (CS26597 (50X) , CS26598 (50X) , CS26599 (50X) , CS26600 (50X) , CS26602 (50X) , CS26603 (50X))

Volatile Petroleum Hydrocarbons - Soil

Benzene	ND	13	95	94	1.1	93	93	0.0	70 - 130	25	

QA/QC Data

SDG I.D.: GCS26597

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
C5-C8 Aliphatic Hydrocarbons *1,2	ND	250	101	99	2.0	102	101	1.0	70 - 130	25
C9-C10 Aromatic Hydrocarbons *1	ND	83	103	103	0.0	101	103	2.0	70 - 130	25
C9-C12 Aliphatic Hydrocarbons *1,	ND	250	108	104	3.8	110	107	2.8	70 - 130	25
Ethyl Benzene	ND	13	97	95	2.1	94	95	1.1	70 - 130	25
m,p-Xylenes	ND	13	101	100	1.0	99	99	0.0	70 - 130	25
MTBE	ND	2.5	106	103	2.9	118	121	2.5	70 - 130	25
Naphthalene	ND	13	104	104	0.0	99	99	0.0	70 - 130	25
o-Xylene	ND	13	96	95	1.0	93	94	1.1	70 - 130	25
Toluene	ND	13	101	99	2.0	98	98	0.0	70 - 130	25
Unadjusted C5-C8 Aliphatics (*1)	ND	250	101	99	2.0	102	101	1.0	70 - 130	25
Unadjusted C9-C12 Aliphatics (*1)	ND	250	108	104	3.8	110	107	2.8	70 - 130	25
% 2,5-Dibromotoluene (FID)	96	%	100	104	3.9	103	104	1.0	70 - 130	25
% 2,5-Dibromotoluene (PID)	94	%	99	103	4.0	101	102	1.0	70 - 130	25

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.
m = This parameter is outside laboratory MS/MSD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference
(ISO) - Isotope Dilution

Phyllis Shiller, Laboratory Director
January 07, 2025

Tuesday, January 07, 2025

Criteria: MA: S1

State: MA

Sample Criteria Exceedances Report

GCS26597 - CMGENV

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CS26597	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	26.0	0.76	20	20	mg/Kg
CS26597	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	26.0	0.76	20	20	mg/Kg
CS26598	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	21.5	0.67	20	20	mg/Kg
CS26598	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	21.5	0.67	20	20	mg/Kg
CS26599	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	28.8	0.68	20	20	mg/Kg
CS26599	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	28.8	0.68	20	20	mg/Kg
CS26600	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	34.9	0.67	20	20	mg/Kg
CS26600	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	34.9	0.67	20	20	mg/Kg
CS26602	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	26.0	0.77	20	20	mg/Kg
CS26602	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	26.0	0.77	20	20	mg/Kg
CS26603	AS-SM	Arsenic	MA / CMR 310.40.1600 / S1 (mg/kg)	23.4	0.77	20	20	mg/Kg
CS26603	AS-SM	Arsenic	MA / SOIL S-1 STANDARDS / S-1 Soil & GW-1	23.4	0.77	20	20	mg/Kg

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

Analysis Comments

January 07, 2025 SDG I.D.: GCS26597

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report:

VOA Narration

CHEM14 12/17/24-1: CS26597, CS26598, CS26599, CS26600, CS26603

The following Initial Calibration compounds did not meet RSD% criteria: 1,4-Dioxane 22% (20%)
The following Initial Calibration compounds did not meet maximum RSD% criteria: None.

Up to eight compounds can be outside of ICAL %RSD criteria and up to sixteen compounds can be outside of CCAL %Dev criteria if less than 40%.

CHEM31 12/18/24-1: CS26602

The following Initial Calibration compounds did not meet RSD% criteria: 1,2-Dibromo-3-chloropropane 27% (20%), 2,2-Dichloropropane 22% (20%), trans-1,3-Dichloropropene 25% (20%), trans-1,4-dichloro-2-butene 36% (20%)
The following Initial Calibration compounds did not meet maximum RSD% criteria: None.
The following Initial Calibration compounds did not meet recommended response factors: 1,1,2-Trichloroethane 0.144 (0.2), 1,2-Dibromoethane 0.157 (0.2), 1,2-Dichloropropane 0.172 (0.2), Bromodichloromethane 0.246 (0.3), cis-1,3-Dichloropropene 0.267 (0.3), Dibromochloromethane 0.198 (0.2), Ethylbenzene 0.352 (0.4), trans-1,3-Dichloropropene 0.221 (0.3)
The following Initial Calibration compounds did not meet minimum response factors: None.

The following Continuing Calibration compounds did not meet % deviation criteria: trans-1,4-dichloro-2-butene 39%H (20%)
The following Continuing Calibration compounds did not meet Maximum % deviation criteria: None.
The following Continuing Calibration compounds did not meet recommended response factors: 1,1,2-Trichloroethane 0.161 (0.2), 1,2-Dibromoethane 0.174 (0.2), 1,2-Dichloropropane 0.190 (0.2), Bromodichloromethane 0.234 (0.3), cis-1,3-Dichloropropene 0.294 (0.3), Ethylbenzene 0.386 (0.4), trans-1,3-Dichloropropene 0.239 (0.3)
The following Continuing Calibration compounds did not meet minimum response factors: Acetone 0.052 (0.05)

Up to eight compounds can be outside of ICAL %RSD criteria and up to sixteen compounds can be outside of CCAL %Dev criteria if less than 40%.

Cooler: Yes ☒ No ☐
Coolant: IPK ☒ ICE ☐ No ☐

PHOENIX Environmental Laboratories, Inc.

CT/MA/RI CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Temp 1.3 Pg of

Data Delivery/Contact Options:
☐ Fax:
☐ Phone: CMAGNUSMELUNGENV
☒ Email: DSWENKU@CMGENV

Customer: CMG
Address: 67 Hall Rd
Sturbridge MA

Project: 2024-285
Report to: CMG
Invoice to: CMG
Quote #

Project P.O.: Pending

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 12/11/24

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
B=Bulk L=Liquid X = ________(Other)

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD (May be billable at analysis unit rate)	8260 VOCs	VPH	EPH	RCRA 8 Metals	Asbestos	GL Amber 8 oz. [ ] w/H$_3$PO$_4$ [ ] NAHSO$_4$	Soil VOA Vials [X] methanol [ ] H$_2$O	GL Soil container (4) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] 500ml [ ] 1000ml	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H$_2$SO$_4$ [ ] 250ml [ ] 500ml	PL HNO$_3$ 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
260597	MW-1, 9-10'	S	12/11/24	8:30		✓	✓	✓	✓			4	2									
260598	MW-2, 12-13'	↓	↓	9:15		✓	✓	✓	✓			4	2									
260599	MW-3, 13-14'	↓	↓	9:45		✓	✓	✓	✓			4	2									
260600	MW-4, 9-10'	↓	↓	10:30		✓	✓	✓	✓			4	2									
[illegible]	[illegible]																					
260601	SB-1, 0-5'	↓	↓	11:30						✓			1									
260602	SB-1, 9-10'	↓	↓	11:30		✓	✓	✓	✓			4	2									
260603	SB-2, 9-10'	↓	↓	12:30		✓	✓	✓	✓			4	2									

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	12/12/24	2:10
[signature]	[signature]	12/12/24	15:30

Comments, Special Requirements or Regulations:

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ 4 Days*
☐ 5 Days*
☒ Standard
☐ Other

* SURCHARGES MAY APPLY

RI
☐ RES DEC
☐ I/C DEC
☐ GA Leachability
☐ GB Leachability
☐ GA-GW Objectives
☐ GB-GW Objectives
☐ Other

CT
☐ RCP Cert
☐ GWPC
☐ SWPC
☐ GA PMC
☐ GB PMC
☐ SWPC
☐ RES DEC
☐ I/C DEC

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ SW Protection
☒ RCS-1 / RCGW-1
☐ RCS-2 / RCGW-2
☐ S-1 Calc.
☐ ________

State where samples were collected: MA

Data Format
☐ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist*
☐ Full Data Package*
☒ Phoenix Std
☐ Other

* SURCHARGE APPLIES

**MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.*

Form PEL-126 Rev. 9/23

EMSL ANALYTICAL, INC.

Attention: Helen Geoghegan
Phoenix Environmental Laboratories, Inc.
587 East Middle Turnpike
Manchester, CT 06040

Samples analyzed by: EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Tel (800) 220-3675
CinnAsblab@EMSL.com

NVLAP Lab Code: 101048-0
AIHA-LAP, LLC-IHPAT Lab: 100194
NYS ELAP: 10872
NJ DEP: 3036
PA ID: 68-00367

Sample Date: 12/11/2024
Submitted Date: 12/16/2024
Analysis Date: 12/30/2024
Report Date: 1/3/2025

Project: GCS26597 **EMSL ID:** 04-103

Summary Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Sub E App E supplemented with EPA 600/R-93/116

This is page one of the analytical report; data found on subsequent pages.

Samples in this report were submitted to EMSL Analytical Inc. for Asbestos Analysis of Bulk materials via EPA methods and may contain analytical results by PLM friable, PLM 400 Point count or gravimetric reduction of samples by PLM NOB, TEM NOB,PLM NOB 400 PTCT.

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. A combination of PLM and TEM analysis may be necessary to ensure consistently reliable detection of asbestos. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Measurement of uncertainty is available upon request. NOB = Non-friable Organically Bound; N/A = Not Applicable; PTCT = Point Count.

Laboratory Comments: Of the six regulated asbestos types only those reported above were detected. Samples milled prior to analysis.

Samantha Rundstrom, Laboratory Manager
or other approved Signatory

Project: GCS26597 **EMSL Order ID:** 04-103

Summary Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Sub E App E supplemented with EPA 600/R-93/116

Sample	Description	Type of Analysis	Color/Fibrous/ Homogeneity	Non-Asbestos Fibers	%	% Non-Fibrous	Asbestos Type	Asbestos Percentage	Final Asbestos %	Comment
1		PLM 400 PTCT	Brown			100.0	**None Detected**			Sample Milled prior to Analysis
			Non-Fibrous							
			Homogeneous							
			--	--	--		**Total Asbestos**	--	--	
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		
			--	--	--		**Total Asbestos**	--		

ANALYTICAL REPORT

Lab Number:	L2473720
Client:	CMG Environmental, Inc. 67 Hall Road Sturbridge, MA 01566
ATTN:	Gary Magnuson
Phone:	(774) 241-0901
Project Name:	OREAD-BEACON
Project Number:	2024-285
Report Date:	01/08/25

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2473720-01	MW-3, 13-14'	SOIL	WORCESTER	12/04/24 10:30	12/16/24
L2473720-02	MW-1, 9-10'	SOIL	WORCESTER	12/04/24 09:00	12/16/24
L2473720-03	MW-5, 9-10'	SOIL	WORCESTER	12/04/24 08:30	12/16/24
L2473720-04	MW-6, 19-20'	SOIL	WORCESTER	12/04/24 10:00	12/16/24
L2473720-05	MW-7, 14.5-16	SOIL	WORCESTER	12/04/24 11:30	12/16/24

Project Name:	OREAD-BEACON	**Lab Number:**	L2473720
Project Number:	2024-285	**Report Date:**	01/08/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	OREAD-BEACON	**Lab Number:**	L2473720
Project Number:	2024-285	**Report Date:**	01/08/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

L2473720-02, -03, -03RE, and -05: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2473720-03: The Extracted Internal Standard recoveries were less than 5% for n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-nmefosaa) (4%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (3%); however, the criteria were achieved upon re-extraction at a lower volume. The results of the re-extraction are reported for the associated target compounds.

Solids, Total

L2473720-01, -02, -03, and -05: The sample was extracted with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Ashley Leitao Ashley Leitao

Title: Technical Director/Representative Date: 01/08/25

ORGANICS

SEMIVOLATILES

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-01
Client ID: MW-3, 13-14'
Sample Location: WORCESTER

Date Collected: 12/04/24 10:30
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/19/24 12:32
Analyst: PS
Percent Solids: 91%

Extraction Method: ALPHA 23528
Extraction Date: 12/18/24 22:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.532	0.024	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.532	0.049	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.266	0.042	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.06	0.069	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.532	0.056	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.06	0.089	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.266	0.048	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.266	0.064	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.266	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.532	0.191	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.532	0.145	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.266	0.080	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.266	0.138	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.266	0.071	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.532	0.305	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.06	0.318	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.532	0.214	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.532	0.050	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.532	0.163	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.532	0.104	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.532	0.090	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.532	0.075	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.532	0.218	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.532	0.058	1

Project Name: OREAD-BEACON **Lab Number:** L2473720

Project Number: 2024-285 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-01 Date Collected: 12/04/24 10:30

Client ID: MW-3, 13-14' Date Received: 12/16/24

Sample Location: WORCESTER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	113		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	86		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	101		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	126		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	76		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	125		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	121		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	123		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	49		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	103		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	93		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	49		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	104		24-159

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-02
Client ID: MW-1, 9-10'
Sample Location: WORCESTER

Date Collected: 12/04/24 09:00
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/19/24 12:49
Analyst: PS
Percent Solids: 88%

Extraction Method: ALPHA 23528
Extraction Date: 12/18/24 22:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.563	0.026	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.563	0.052	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.282	0.044	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.13	0.073	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.563	0.059	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.13	0.094	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.282	0.051	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.282	0.068	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.282	0.047	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.563	0.202	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.563	0.154	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.282	0.085	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.282	0.146	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.282	0.076	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.563	0.323	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.13	0.337	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.563	0.227	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.563	0.053	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.563	0.172	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.563	0.110	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.563	0.095	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.563	0.079	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.563	0.230	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.563	0.061	1

Project Name: OREAD-BEACON **Lab Number:** L2473720

Project Number: 2024-285 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-02 Date Collected: 12/04/24 09:00

Client ID: MW-1, 9-10' Date Received: 12/16/24

Sample Location: WORCESTER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	81		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	68		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	65		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	62		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**28**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	79		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**21**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	30		24-159

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-03
Client ID: MW-5, 9-10'
Sample Location: WORCESTER

Date Collected: 12/04/24 08:30
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/19/24 13:05
Analyst: PS
Percent Solids: 92%

Extraction Method: ALPHA 23528
Extraction Date: 12/18/24 22:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.537	0.024	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.537	0.049	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.268	0.042	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.07	0.069	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.537	0.056	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.07	0.090	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.268	0.048	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.268	0.065	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.268	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.537	0.193	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.537	0.147	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.268	0.081	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.268	0.140	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.268	0.072	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.537	0.308	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.07	0.321	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.537	0.050	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.537	0.164	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.537	0.105	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.537	0.075	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.537	0.220	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.537	0.058	1

Project Name: OREAD-BEACON **Lab Number:** L2473720

Project Number: 2024-285 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-03 Date Collected: 12/04/24 08:30

Client ID: MW-5, 9-10' Date Received: 12/16/24

Sample Location: WORCESTER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**47**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**44**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**45**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	32		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**42**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**41**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**45**	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**49**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	27		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**51**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**47**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**45**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	27		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**4**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**35**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	80		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**3**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**29**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**13**	Q	24-159

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-03 RE
Client ID: MW-5, 9-10'
Sample Location: WORCESTER

Date Collected: 12/04/24 08:30
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/03/25 18:11
Analyst: PS
Percent Solids: 92%

Extraction Method: ALPHA 23528
Extraction Date: 01/01/25 23:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	2.06	0.831	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	2.06	0.348	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**12**	Q	31-134
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**15**	Q	34-137

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-05
Client ID: MW-7, 14.5-16
Sample Location: WORCESTER

Date Collected: 12/04/24 11:30
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/19/24 13:43
Analyst: PS
Percent Solids: 92%

Extraction Method: ALPHA 23528
Extraction Date: 12/18/24 22:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.528	0.024	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.528	0.049	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.264	0.041	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.06	0.068	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.528	0.055	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.06	0.088	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.264	0.048	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.264	0.064	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.264	0.044	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.528	0.189	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.528	0.144	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.264	0.079	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.264	0.137	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.264	0.071	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.528	0.303	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.06	0.315	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.528	0.212	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.528	0.049	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.528	0.161	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.528	0.103	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.528	0.089	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.528	0.074	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.528	0.216	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.528	0.057	1

Project Name: OREAD-BEACON **Lab Number:** L2473720

Project Number: 2024-285 **Report Date:** 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-05 Date Collected: 12/04/24 11:30

Client ID: MW-7, 14.5-16 Date Received: 12/16/24

Sample Location: WORCESTER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	71		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	66		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**67**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	48		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**61**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**62**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**69**	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	51		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**76**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**74**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	41		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**14**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**59**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	96		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**13**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**52**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	44		24-159

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/19/24 06:53
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 12/18/24 22:31

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03,05 Batch: WG2011021-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.500	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.500	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.250	0.039
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.00	0.065
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.500	0.053
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.00	0.084
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.250	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.250	0.061
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.250	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.500	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.500	0.136
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.250	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.250	0.130
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.250	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.500	0.287
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.00	0.299
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.500	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.500	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.500	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.500	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.500	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.500	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.500	0.054

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/19/24 06:53
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 12/18/24 22:31

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03,05 Batch: WG2011021-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	103		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	74		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	113		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	120		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	110		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	77		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	90		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	93		24-159

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/03/25 17:21
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/01/25 23:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03 Batch: WG2015440-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.500	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.500	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.250	0.039
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.00	0.065
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.500	0.053
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.00	0.084
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.250	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.250	0.061
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.250	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.500	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.500	0.136
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.250	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.250	0.130
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.250	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.500	0.287
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.00	0.299
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.500	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.500	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.500	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.500	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.500	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.500	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.500	0.054

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/03/25 17:21
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/01/25 23:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03 Batch: WG2015440-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	116		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	73		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	89		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	111		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	122		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	132		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	97		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	77		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	87		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	113		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	117		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	149		24-159

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/05/25 10:15
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 01/01/25 23:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03 Batch: WG2015440-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	0.098

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	97		5-117

Lab Control Sample Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 Batch: WG2011021-2								
Perfluorobutanoic Acid (PFBA)	105		-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	104		-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	103		-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	106		-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	100		-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	95		-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	104		-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	98		-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	96		-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	104		-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	84		-		70-132	-		30
Perfluorononanoic Acid (PFNA)	97		-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	86		-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	96		-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	89		-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	100		-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	106		-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	89		-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	102		-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	128		-		61-139	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 Batch: WG2011021-2								
Perfluorododecanoic Acid (PFDoA)	106		-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	115		-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	95		-		69-133	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	98				58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87				74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	78				14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93				66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99				78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	108				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	80				20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114				72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111				79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	111				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74				19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	86				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93				61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11				5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69				34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	87				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	93				24-159

Lab Control Sample Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 Batch: WG2015440-2								
Perfluorobutanoic Acid (PFBA)	91		-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	90		-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	89		-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	100		-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	91		-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	80		-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	89		-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	87		-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	87		-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	85		-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	87		-		70-132	-		30
Perfluorononanoic Acid (PFNA)	82		-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	82		-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	93		-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	95		-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	92		-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	114		-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	83		-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	85		-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	98		-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	100		-		61-139	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 Batch: WG2015440-2								
Perfluorododecanoic Acid (PFDoA)	84		-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	108		-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	88		-		69-133	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	109				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	67				58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93				74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	85				14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	97				66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	102				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103				78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	106				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92				20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	116				72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	107				79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96				19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	79				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107				61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	35				5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84				34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	108				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	149				24-159

Lab Control Sample Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 Batch: WG2015440-2								
Perfluorooctanesulfonamide (FOSA)	98		-		67-137	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	99				5-117

Matrix Spike Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 QC Batch ID: WG2011021-4 QC Sample: L2470303-17 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	5.32	5.70	107		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	ND	5.32	5.68	107		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.72	4.92	104		-	-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	4.99	5.17	104		-	-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	ND	5.32	5.55	104		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	5.01	5.19	104		-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	5.32	5.60	105		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	4.86	4.90	101		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	5.32	5.45	103		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	5.06	5.41	107		-	-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	5.07	4.40	87		-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	ND	5.32	5.41	102		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	4.93	4.53	92		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	ND	5.32	5.32	100		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	5.1	5.00	98		-	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	5.11	4.72	92		-	-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	5.32	5.84	110		-	-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	5.32	5.72	108		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	5.14	4.89	95		-	-		59-134	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 QC Batch ID: WG2011021-4 QC Sample: L2470303-17 Client ID: MS Sample												
Perfluorooctanesulfonamide (FOSA)	ND	5.32	5.32	100		-	-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	5.32	5.82	109		-	-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	ND	5.32	5.68	107		-	-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	5.32	5.68	107		-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	5.32	5.27	99		-	-		69-133	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	82				19-175
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	79				14-167
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79				20-154
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	78				34-137
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	75				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105				75-130
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89				66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96				78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	96				24-159
Perfluoro[13C4]Butanoic Acid (MPFBA)	99				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	93				58-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	83				5-117

Matrix Spike Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 QC Batch ID: WG2011021-4 QC Sample: L2470303-17 Client ID: MS Sample												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108				79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102				75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104				72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88				74-139

Matrix Spike Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG2015440-3 QC Sample: L2475327-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	0.130J	13.4	12.4	91		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	0.212J	13.4	12.6	92		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	0.259J	11.9	11.7	96		-	-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	12.6	12.5	99		-	-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	0.770J	13.4	13.2	92		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	12.7	11.2	88		-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	0.205JF	13.4	12.7	93		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	12.3	11.1	90		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	0.847	13.4	12.7	88		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	12.8	12.3	96		-	-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	12.8	10.7	83		-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	0.356J	13.4	11.1	80		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	5.86	12.5	18.9	104		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	1.48F	13.4	15.8	106		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	12.9	12.8	99		-	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	12.9	10.4	80		-	-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	13.4	12.3	91		-	-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	1.13JF	13.4	13.6	93		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	0.427JF	13	12.1	90		-	-		59-134	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG2015440-3 QC Sample: L2475327-01 Client ID: MS Sample												
Perfluorooctanesulfonamide (FOSA)	ND	13.4	13.4	100		-	-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	13.4	16.1	120		-	-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	1.10J	13.4	13.0	89		-	-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	13.4	13.6F	101		-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	0.450J	13.4	13.0	93		-	-		69-133	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	131	130	99		-	-		41-165	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	12.7	11.4	90		-	-		61-135	-		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	13.4	11.6	86		-	-		18-191	-		30
Perfluorooctadecanoic Acid (PFODA)	ND	13.4	6.32J	47		-	-		10-123	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	147				19-175
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	85				14-167
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	105				20-154
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	80				10-203
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84				34-137
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	93				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	79				75-130

Matrix Spike Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285
Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG2015440-3 QC Sample: L2475327-01 Client ID: MS Sample												

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72				66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83				78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	98				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	105				24-159
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	65				10-145
Perfluoro[13C4]Butanoic Acid (MPFBA)	92				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**57**	Q			58-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	59				5-117
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89				79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87				75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96				72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75				74-139

Lab Duplicate Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 QC Batch ID: WG2011021-5 QC Sample: L2470303-18 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/g	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/g	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/g	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/g	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/g	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/g	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/g	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/g	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/g	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/g	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/g	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/g	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/g	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 QC Batch ID: WG2011021-5 QC Sample: L2470303-18 Client ID: DUP Sample						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/g	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/g	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		95		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84		88		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		83		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	62		66		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		90		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		87		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83		92		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		102		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	60		65		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		105		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		100		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		105		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	62		69		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	55		64		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		90		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	64		80		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	51		52		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	73		82		54-150

Lab Duplicate Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03,05 QC Batch ID: WG2011021-5 QC Sample: L2470303-18
Client ID: DUP Sample

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		73		24-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG2015440-4 QC Sample: L2475327-02 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	0.057J	0.066J	ng/g	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	0.075J	ng/g	NC		30
Perfluorobutanesulfonic Acid (PFBS)	0.083J	0.064J	ng/g	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/g	NC		30
Perfluorohexanoic Acid (PFHxA)	0.223J	0.302JF	ng/g	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	0.067JF	0.069JF	ng/g	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/g	NC		30
Perfluorooctanoic Acid (PFOA)	0.167JF	0.214J	ng/g	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/g	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/g	NC		30
Perfluorononanoic Acid (PFNA)	0.110JF	ND	ng/g	NC		30
Perfluorooctanesulfonic Acid (PFOS)	0.790	1.00	ng/g	23		30
Perfluorodecanoic Acid (PFDA)	0.155J	0.313J	ng/g	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/g	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/g	NC		30
Perfluoroundecanoic Acid (PFUnA)	0.109JF	0.083JF	ng/g	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/g	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG2015440-4 QC Sample: L2475327-02 Client ID: DUP Sample						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/g	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	0.112JF	ng/g	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/g	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/g	NC		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	ND	ng/g	NC		30
Perfluorooctadecanoic Acid (PFODA)	ND	ND	ng/g	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	113		111		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	69		70		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		81		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	86		74		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	101		98		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	107		103		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		88		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	112		109		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		79		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	122		122		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	104		91		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	107		94		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		89		19-175

Lab Duplicate Analysis
Batch Quality Control

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG2015440-4 QC Sample: L2475327-02 Client ID: DUP Sample

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	105		83		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	129		113		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		60		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	113		88		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	134		122		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**162**	Q	**161**	Q	24-159
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	114		109		10-203
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	115		117		10-145

INORGANICS
&
MISCELLANEOUS

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-01
Client ID: MW-3, 13-14'
Sample Location: WORCESTER

Date Collected: 12/04/24 10:30
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.0		%	0.100	0.100	1	-	12/18/24 10:09	121,2540G	SER

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-02
Client ID: MW-1, 9-10'
Sample Location: WORCESTER

Date Collected: 12/04/24 09:00
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	88.3		%	0.100	0.100	1	-	12/18/24 10:09	121,2540G	SER

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-03
Client ID: MW-5, 9-10'
Sample Location: WORCESTER

Date Collected: 12/04/24 08:30
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	92.4		%	0.100	0.100	1	-	12/18/24 10:09	121,2540G	SER

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

SAMPLE RESULTS

Lab ID: L2473720-05
Client ID: MW-7, 14.5-16
Sample Location: WORCESTER

Date Collected: 12/04/24 11:30
Date Received: 12/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.8		%	0.100	0.100	1	-	12/18/24 10:09	121,2540G	SER

Lab Duplicate Analysis

Batch Quality Control

Project Name: OREAD-BEACON

Project Number: 2024-285

Lab Number: L2473720

Report Date: 01/08/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-03,05 QC Batch ID: WG2010545-1 QC Sample: L2465768-09 Client ID: DUP Sample						
Solids, Total	81.6	81.4	%	0		10

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2473720-01A	Plastic 8oz unpreserved	A	NA		4.7	Y	Absent		A2-537-ISOTOPE(90)
L2473720-01B	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		A2-TS(7)
L2473720-02A	Plastic 8oz unpreserved	A	NA		4.7	Y	Absent		A2-537-ISOTOPE(90)
L2473720-02B	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		A2-TS(7)
L2473720-03A	Plastic 8oz unpreserved	A	NA		4.7	Y	Absent		A2-537-ISOTOPE(90)
L2473720-03B	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		A2-TS(7)
L2473720-04A	Plastic 8oz unpreserved	A	NA		4.7	Y	Absent		HOLD-537(14)
L2473720-04B	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		HOLD-WETCHEM()
L2473720-05A	Plastic 8oz unpreserved	A	NA		4.7	Y	Absent		A2-537-ISOTOPE(90)
L2473720-05B	Plastic 2oz unpreserved for TS	A	NA		4.7	Y	Absent		A2-TS(7)

*Values in parentheses indicate holding time in days

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: OREAD-BEACON
Project Number: 2024-285

Lab Number: L2473720
Report Date: 01/08/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	OREAD-BEACON	**Lab Number:**	L2473720
Project Number:	2024-285	**Report Date:**	01/08/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	OREAD-BEACON	**Lab Number:**	L2473720
Project Number:	2024-285	**Report Date:**	01/08/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	OREAD-BEACON	**Lab Number:**	L2473720
Project Number:	2024-285	**Report Date:**	01/08/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: OREAD-BEACON **Lab Number:** L2473720

Project Number: 2024-285 **Report Date:** 01/08/25

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 12/16/24

ALPHA Job #: L2473720

Client Information

Client: CMG Environmental

Address: 67 Hall Road
Sturbridge, MA 01566

Phone: 774-241-0801

Email: GMAGNUSEN@CMGENV.COM

Additional Project Information:

Project Information

Project Name: OREAD-BEACON

Project Location: WORCESTER

Project #: 2024-285

Project Manager: G. MAGNUSEN

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO # 2024-285

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	PFAS 537.1 Isotope Dilution	SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
73720-01	MW-3, 13-14'	12-4-24	10:30	Soil	mC									X			2
-02	MW-1, 9-10'		9:00	Soil	mC									X			2
-03	MW-5, 9-10'		8:30	Soil	mC									X			2
-04	MW-6, 19-20'		10:00	Soil	mC											HOLD	2
-05	MW-7, 14.5-16		11:30	Soil	mC									X			2
														Container Type			P
														Preservative			NONE

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	12-16-24 10:13		12-16-24 10:16
	12:16.24		12-16-24 1630
	12/16/24 19:30		12/16/24 1940

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

12/16/24 2040

12/16/24

Saturday, January 04, 2025

Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Project ID: **2024-285**
SDG ID: **GCS35349**
Sample ID#s: **CS35349**

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

January 04, 2025

SDG I.D.: GCS35349

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 04, 2025

SDG I.D.: GCS35349

Project ID: 2024-285

Client Id	Lab Id	Matrix
MW-3	CS35349	GROUND WATER

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 04, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:	SB	12/24/24	11:00
Location Code:	CMGENV	Received by:	SW	12/26/24	16:18
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	108+112 BEACON				

Laboratory Data

SDG ID: GCS35349
Phoenix ID: CS35349

Project ID: 2024-285
Client ID: MW-3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	12/30/24	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	12/30/24	TH	SW6010D
Barium (Dissolved)	0.021	0.002	mg/L	1	12/30/24	TH	SW6010D
Cadmium (Dissolved)	< 0.001	0.001	mg/L	1	12/30/24	TH	SW6010D
Chromium (Dissolved)	< 0.001	0.001	mg/L	1	12/30/24	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	12/30/24	ZT	SW7470A
Lead (Dissolved)	< 0.002	0.002	mg/L	1	12/30/24	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	12/30/24	TH	SW6010D
Mercury Dissolved Digestion	Completed				12/30/24	AK/AK	SW7470A
EPH Extraction	Completed				12/31/24	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				12/30/24	A/MQ	SW3520C
Dissolved Metals Preparation	Completed				12/27/24	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				12/26/24		MADEP EPH-19
	Completed				12/27/24	RM	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	12/27/24	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D

Project ID: 2024-285
Client ID: MW-3

Phoenix I.D.: CS35349

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	12/27/24	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	12/27/24	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	12/27/24	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	12/27/24	MH	SW8260D
Acetone	ND	25	ug/L	1	12/27/24	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Benzene	ND	0.70	ug/L	1	12/27/24	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	12/27/24	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	12/27/24	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	12/27/24	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	12/27/24	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	12/27/24	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	12/27/24	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
sec-Butylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Styrene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
tert-Butylbenzene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Tetrachloroethene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	12/27/24	MH	SW8260D
Toluene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	12/27/24	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	12/27/24	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	12/27/24	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	101		%	1	12/27/24	MH	70 - 130 %
% Bromofluorobenzene	95		%	1	12/27/24	MH	70 - 130 %
% Dibromofluoromethane	80		%	1	12/27/24	MH	70 - 130 %
% Toluene-d8	95		%	1	12/27/24	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	12/27/24	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	12/27/24	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	12/27/24	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	12/27/24	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	12/27/24	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Acenaphthene	ND	0.47	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Acenaphthylene	ND	0.09	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Anthracene	ND	0.09	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Benz(a)anthracene	ND	0.09	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Benzo(b)fluoranthene	ND	0.09	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Benzo(ghi)perylene	ND	0.02	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Benzo(k)fluoranthene	ND	0.09	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Chrysene	ND	0.05	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Fluoranthene	ND	0.47	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Fluorene	ND	0.09	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Naphthalene	ND	0.47	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Phenanthrene	ND	0.47	ug/L	1	12/31/24	KCA	SW8270E (SIM)
Pyrene	ND	0.07	ug/L	1	12/31/24	KCA	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	67		%	1	12/31/24	KCA	40 - 140 %
% Nitrobenzene-d5	76		%	1	12/31/24	KCA	40 - 140 %
% Terphenyl-d14	75		%	1	12/31/24	KCA	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	190	ug/L	1	12/31/24	AW	MAEPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	190	ug/L	1	12/31/24	AW	MAEPH 5/2019

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
C19-C36 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	12/31/24	AW	MAEPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	12/31/24	AW	MAEPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	61		%	1	12/31/24	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	67		%	1	12/31/24	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	80		%	1	12/31/24	AW	40 - 140 %
% o-terphenyl (aromatic)	68		%	1	12/31/24	AW	40 - 140 %

MA Volatile Petroleum Hydrocarbons (VPH)

Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	12/27/24	RM	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	94		%	1	12/27/24	RM	70 - 130 %
% 2,5-Dibromotoluene (PID)	86		%	1	12/27/24	RM	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Dissolved analysis requires filtration. Samples submitted from a preserved container are assumed to be field filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

January 04, 2025

Reviewed and Released by: Rashmi Makol, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

QA/QC Report

January 04, 2025

QA/QC Data

SDG I.D.: GCS35349

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 764514 (mg/L), QC Sample No: CS33221 (CS35349)													
Mercury (Dissolved)	BRL	0.0002	<0.0002	<0.0002	NC	109			107			80 - 120	20
Comment:													
Additional Mercury Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range is 75-125% for aqueous and 80-120% for soils.													
QA/QC Batch 764416 (mg/L), QC Sample No: CS35349 (CS35349)													
ICP Metals - Dissolved													
Arsenic	BRL	0.004	<0.004	<0.004	NC	86.2	86.4	0.2	88.3			80 - 120	20
Barium	BRL	0.002	0.021	0.021	0	90.2	90.3	0.1	91.8			80 - 120	20
Cadmium	BRL	0.001	<0.001	<0.001	NC	86.8	86.5	0.3	87.5			80 - 120	20
Chromium	BRL	0.001	<0.001	<0.001	NC	87.5	87.4	0.1	89.1			80 - 120	20
Lead	BRL	0.002	<0.002	<0.002	NC	88.7	89.0	0.3	90.0			80 - 120	20
Selenium	BRL	0.011	<0.011	<0.011	NC	86.9	86.7	0.2	88.9			80 - 120	20
Silver	BRL	0.001	<0.001	<0.001	NC	86.9	86.6	0.3	89.5			80 - 120	20
Comment:													
Additional Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range 75-125%.													

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

QA/QC Report

January 04, 2025

QA/QC Data

SDG I.D.: GCS35349

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 764660 (ug/L), QC Sample No: CS35349 (CS35349)										
MAEPH - Ground Water										
C9-C18 Aliphatic Hydrocarbons 1*	ND	100	55	55	0.0				40 - 140	25
C19-C36 Aliphatic Hydrocarbons 1*	ND	100	62	62	0.0				40 - 140	25
C11-C22 Aromatic Hydrocarbons 1	ND	100	69	67	2.9				40 - 140	25
C11-C22 Aromatic Hydrocarbons U	ND	100							40 - 140	25
C9 - Nonane	ND	10	37	37	0.0				40 - 140	25
C-10 Decane	ND	10	48	48	0.0				40 - 140	25
C12 - Dodecane	ND	10	54	54	0.0				40 - 140	25
C14 - Tetradecane	ND	10	60	59	1.7				40 - 140	25
C16 - Hexadecane	ND	10	63	63	0.0				40 - 140	25
C18 - Octadecane	ND	10	70	70	0.0				40 - 140	25
C19 - Nonadecane	ND	10	69	69	0.0				40 - 140	25
C20 - Eicosane	ND	10	72	72	0.0				40 - 140	25
C22 - Docosane	ND	10	65	65	0.0				40 - 140	25
C24 - Tetracosane	ND	10	73	73	0.0				40 - 140	25
C26 - Hexacosane	ND	10	72	72	0.0				40 - 140	25
C28 - Octacosane	ND	10	68	68	0.0				40 - 140	25
C30 - Tricotane	ND	10	65	65	0.0				40 - 140	25
C36 - Hexatriacontane	ND	10	14	13	7.4				40 - 140	25
% 1-chlorooctadecane (aliphatic)	76	%	94	94	0.0				40 - 140	25
% o-terphenyl (aromatic)	87	%	87	85	2.3				40 - 140	25
% 2-Fluorobiphenyl (Fractionation)	106	%	117	120	2.5				40 - 140	25
% 2-Bromonaphthalene (Fractionati	87	%	101	101	0.0				40 - 140	25
% 2-Methylnaphthalene BT		%	0	0	NC				0 - 5	
% Naphthalene BT		%	0	0	NC				0 - 5	
Comment:										
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%										
QA/QC Batch 764619 (ug/L), QC Sample No: CS34967 (CS35349)										
Semivolatiles by SIM, PAH - Ground Water										
2-Methylnaphthalene	ND	0.50	67	71	5.8				40 - 140	20
Acenaphthene	ND	0.50	80	83	3.7				40 - 140	20
Acenaphthylene	ND	0.10	73	75	2.7				40 - 140	20
Anthracene	ND	0.10	85	88	3.5				40 - 140	20
Benz(a)anthracene	ND	0.05	91	89	2.2				40 - 140	20
Benzo(a)pyrene	ND	0.20	81	77	5.1				40 - 140	20
Benzo(b)fluoranthene	ND	0.07	82	81	1.2				40 - 140	20
Benzo(ghi)perylene	ND	0.02	82	78	5.0				40 - 140	20
Benzo(k)fluoranthene	ND	0.10	85	82	3.6				40 - 140	20
Chrysene	ND	0.05	85	83	2.4				40 - 140	20
Dibenz(a,h)anthracene	ND	0.02	87	83	4.7				40 - 140	20
Fluoranthene	ND	0.50	85	87	2.3				40 - 140	20

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Fluorene	ND	0.10	82	84	2.4				40 - 140	20
Indeno(1,2,3-cd)pyrene	ND	0.10	82	77	6.3				40 - 140	20
Naphthalene	ND	0.50	62	66	6.3				40 - 140	20
Phenanthrene	ND	0.06	80	82	2.5				40 - 140	20
Pyrene	ND	0.07	87	89	2.3				40 - 140	20
% 2-Fluorobiphenyl	63	%	67	72	7.2				40 - 140	20
% Nitrobenzene-d5	62	%	76	77	1.3				40 - 140	20
% Terphenyl-d14	77	%	79	79	0.0				40 - 140	20

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 764705 (ug/L), QC Sample No: CS34654 (CS35349)

Volatiles - Ground Water

1,1,1,2-Tetrachloroethane	ND	1.0	111	113	1.8				70 - 130	20
1,1,1-Trichloroethane	ND	1.0	96	108	11.8				70 - 130	20
1,1,2,2-Tetrachloroethane	ND	0.50	88	93	5.5				70 - 130	20
1,1,2-Trichloroethane	ND	1.0	101	102	1.0				70 - 130	20
1,1-Dichloroethane	ND	1.0	86	92	6.7				70 - 130	20
1,1-Dichloroethene	ND	1.0	84	93	10.2				70 - 130	20
1,1-Dichloropropene	ND	1.0	94	100	6.2				70 - 130	20
1,2,3-Trichlorobenzene	ND	1.0	104	113	8.3				70 - 130	20
1,2,3-Trichloropropane	ND	1.0	88	92	4.4				70 - 130	20
1,2,4-Trichlorobenzene	ND	1.0	105	114	8.2				70 - 130	20
1,2,4-Trimethylbenzene	ND	1.0	99	107	7.8				70 - 130	20
1,2-Dibromo-3-chloropropane	ND	1.0	103	117	12.7				70 - 130	20
1,2-Dibromoethane	ND	1.0	101	106	4.8				70 - 130	20
1,2-Dichlorobenzene	ND	1.0	97	103	6.0				70 - 130	20
1,2-Dichloroethane	ND	1.0	101	106	4.8				70 - 130	20
1,2-Dichloropropane	ND	1.0	89	95	6.5				70 - 130	20
1,3,5-Trimethylbenzene	ND	1.0	99	107	7.8				70 - 130	20
1,3-Dichlorobenzene	ND	1.0	99	106	6.8				70 - 130	20
1,3-Dichloropropane	ND	1.0	95	99	4.1				70 - 130	20
1,4-Dichlorobenzene	ND	1.0	97	105	7.9				70 - 130	20
1,4-dioxane	ND	100	98	101	3.0				40 - 160	20
2,2-Dichloropropane	ND	1.0	96	106	9.9				70 - 130	20
2-Chlorotoluene	ND	1.0	97	108	10.7				70 - 130	20
2-Hexanone	ND	5.0	87	93	6.7				40 - 160	20
2-Isopropyltoluene	ND	1.0	99	108	8.7				70 - 130	20
4-Chlorotoluene	ND	1.0	99	107	7.8				70 - 130	20
4-Methyl-2-pentanone	ND	5.0	90	97	7.5				40 - 160	20
Acetone	ND	5.0	79	88	10.8				40 - 160	20
Acrylonitrile	ND	5.0	77	80	3.8				70 - 130	20
Benzene	ND	0.70	95	102	7.1				70 - 130	20
Bromobenzene	ND	1.0	96	104	8.0				70 - 130	20
Bromochloromethane	ND	1.0	85	93	9.0				70 - 130	20
Bromodichloromethane	ND	0.50	103	110	6.6				70 - 130	20
Bromoform	ND	1.0	108	117	8.0				70 - 130	20
Bromomethane	ND	1.0	90	96	6.5				40 - 160	20
Carbon Disulfide	ND	1.0	81	89	9.4				70 - 130	20
Carbon tetrachloride	ND	1.0	101	110	8.5				70 - 130	20
Chlorobenzene	ND	1.0	97	105	7.9				70 - 130	20

QA/QC Data

SDG I.D.: GCS35349

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Chloroethane	ND	1.0	89	99	10.6				70 - 130	20
Chloroform	ND	1.0	86	91	5.6				70 - 130	20
Chloromethane	ND	1.0	92	103	11.3				40 - 160	20
cis-1,2-Dichloroethene	ND	1.0	87	91	4.5				70 - 130	20
cis-1,3-Dichloropropene	ND	0.40	102	107	4.8				70 - 130	20
Dibromochloromethane	ND	0.50	107	116	8.1				70 - 130	20
Dibromomethane	ND	1.0	96	101	5.1				70 - 130	20
Dichlorodifluoromethane	ND	1.0	85	95	11.1				40 - 160	20
Di-isopropyl ether	ND	1.0	83	89	7.0				70 - 130	20
Ethyl ether	ND	1.0	77	85	9.9				70 - 130	20
Ethyl tert-butyl ether	ND	1.0	86	93	7.8				70 - 130	20
Ethylbenzene	ND	1.0	100	107	6.8				70 - 130	20
Hexachlorobutadiene	ND	0.40	95	102	7.1				70 - 130	20
Isopropylbenzene	ND	1.0	99	107	7.8				70 - 130	20
m&p-Xylene	ND	1.0	101	110	8.5				70 - 130	20
Methyl ethyl ketone	ND	5.0	85	90	5.7				40 - 160	20
Methyl t-butyl ether (MTBE)	ND	1.0	85	94	10.1				70 - 130	20
Methylene chloride	ND	1.0	81	88	8.3				70 - 130	20
Naphthalene	ND	1.0	109	117	7.1				70 - 130	20
n-Butylbenzene	ND	1.0	96	104	8.0				70 - 130	20
n-Propylbenzene	ND	1.0	98	105	6.9				70 - 130	20
o-Xylene	ND	1.0	103	110	6.6				70 - 130	20
p-Isopropyltoluene	ND	1.0	99	109	9.6				70 - 130	20
sec-Butylbenzene	ND	1.0	95	104	9.0				70 - 130	20
Styrene	ND	1.0	106	112	5.5				70 - 130	20
tert-amyl methyl ether	ND	1.0	95	101	6.1				70 - 130	20
tert-Butylbenzene	ND	1.0	98	106	7.8				70 - 130	20
Tetrachloroethene	ND	1.0	101	108	6.7				70 - 130	20
Tetrahydrofuran (THF)	ND	2.5	86	93	7.8				70 - 130	20
Toluene	ND	1.0	99	106	6.8				70 - 130	20
trans-1,2-Dichloroethene	ND	1.0	82	93	12.6				70 - 130	20
trans-1,3-Dichloropropene	ND	0.40	105	109	3.7				70 - 130	20
trans-1,4-dichloro-2-butene	ND	5.0	94	103	9.1				70 - 130	20
Trichloroethene	ND	1.0	101	104	2.9				70 - 130	20
Trichlorofluoromethane	ND	1.0	90	99	9.5				70 - 130	20
Trichlorotrifluoroethane	ND	1.0	86	94	8.9				70 - 130	20
Vinyl chloride	ND	1.0	76	84	10.0				70 - 130	20
% 1,2-dichlorobenzene-d4	102	%	100	102	2.0				70 - 130	20
% Bromofluorobenzene	94	%	101	100	1.0				70 - 130	20
% Dibromofluoromethane	100	%	99	101	2.0				70 - 130	20
% Toluene-d8	98	%	99	100	1.0				70 - 130	20

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

QA/QC Batch 764508 (ug/L), QC Sample No: CS35349 (CS35349)

Volatile Petroleum Hydrocarbons - Ground Water

Unadjusted C5-C8 Aliphatics (*1)	ND	100	88	90	2.2				70 - 130	25
Unadjusted C9-C12 Aliphatics (*1)	ND	100	124	121	2.4				70 - 130	25
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	88	90	2.2				70 - 130	25
C9-C12 Aliphatic Hydrocarbons *1,	ND	100	124	121	2.4				70 - 130	25

QA/QC Data

SDG I.D.: GCS35349

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
C9-C10 Aromatic Hydrocarbons *1	ND	100	94	94	0.0				70 - 130	25
Benzene	ND	1.0	89	89	0.0				70 - 130	25
Ethyl Benzene	ND	1.0	87	88	1.1				70 - 130	25
MTBE	ND	1.0	91	94	3.2				70 - 130	25
Naphthalene	ND	5.0	74	74	0.0				70 - 130	25
Toluene	ND	1.0	93	93	0.0				70 - 130	25
m,p-Xylenes	ND	2.0	92	93	1.1				70 - 130	25
o-Xylene	ND	1.0	88	88	0.0				70 - 130	25
% 2,5-Dibromotoluene (PID)	85	%	82	83	1.2				70 - 130	25
% 2,5-Dibromotoluene (FID)	93	%	85	89	4.6				70 - 130	25

Comment:

This batch consists of a Blank, LCS and LCSD.

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference
(ISO) - Isotope Dilution

Phyllis Shiller, Laboratory Director
January 04, 2025

Saturday, January 04, 2025

Criteria: MA: CAM, GW1

State: MA

Sample Criteria Exceedances Report

GCS35349 - CMGENV

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CS35349	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS35349	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS35349	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS35349	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS35349	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS35349	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS35349	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	0.3	0.3	ug/L
CS35349	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L

MassDEP Analytical Protocol Certification Form

Laboratory Name: Phoenix Environmental Laboratories, Inc. **Project #:**

Project Location: 2024-285 **RTN:**

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]
CS35349

Matrices: ☑ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below)

8260 VOC CAM II A ☑	7470/7471 Hg CAM III B ☑	MassDEP VPH CAM IV A ☑	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☑	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☑	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9012 Total Cyanide/PAC CAM V1 A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature*) in the field or laboratory, and prepared/analyzed with method holding times? (* see narrative)	☑ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements speified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes ☐ No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 methods only: Was the complete analyte list reported for each method?	☑ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☑ Yes ☐ No

Responses to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes ☑ No

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056(2)(k) and WSC-07-350

H	Were all QC performance standards specified in the CAM protocol(s) achieved? See Section: EPH Narration .	☐ Yes ☑ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes ☑ No

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Authorized Signature: Rashmi Makol

Date: Saturday, January 04, 2025

Printed Name: Rashmi Makol

Position: Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 04, 2025

SDG I.D.: GCS35349

SDG Comments

Metals Analysis:
The client requested a shorter list of elements than the 6010 MCP list.

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.
8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.
Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards

EPH Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? No.

QC Batch 764660 (Samples: CS35349): -----

One or more analytes is below the method criteria. A low bias for these analytes is possible. (C36 - Hexatriacontane, C9 - Nonane)

Instrument:

AU-FID7 12/31/24-2 Adam Werner, Chemist 12/31/24

CS35349 (1X)

No significant modifications were made to the EPH method, as specified in Section 11.3 of the method.

The initial calibration (AL1122AI) RSD for the compound list was less than 25% except for the following compounds: None.
The continuing calibration %D for the compound list was less than 25% except for the following compounds:None.

QC (Batch Specific):

Batch 764660 (CS35349)

CS35349

All LCS recoveries were within 40 - 140 with the following exceptions: C36 - Hexatriacontane(14%), C9 - Nonane(37%)
All LCSD recoveries were within 40 - 140 with the following exceptions: C36 - Hexatriacontane(13%), C9 - Nonane(37%)
All LCS/LCSD RPDs were less than 25% with the following exceptions: None.
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Mercury Narration

Were all QA/QC performance criteria specified in the analytical method achieved? Yes.

Instrument:

MERLIN 12/30/24 10:33 Zade-Anne Taylor, Chemist 12/30/24

CS35349

The initial calibration met criteria and the linear range is defined daily by the calibration range.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Certification Report

January 04, 2025

SDG I.D.: GCS35349

Mercury Narration

The Low-Level Calibration Verification (LLCV) met criteria.
The following Initial Calibration Verification (ICV) compounds did not meet criteria: None.
The following Initial Calibration Blank (ICB) compounds did not meet criteria: None.
The following Continuing Calibration Verification (CCV) compounds did not meet criteria: None.
The following Continuing Calibration Blank (CCB) compounds did not meet criteria: None.

QC (Batch Specific):

Batch 764514 (CS33221)

CS35349

All LCS recoveries were within 80 - 120 with the following exceptions: None.
Additional Mercury Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range is 75-125% for aqueous and 80-120% for soils.

SVOASIM Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM33 12/31/24-1 Keith Aloisa, Chemist 12/31/24

CS35349 (1X)

Initial Calibration Evaluation (CHEM33/33_PAHSIM_1126):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.

Continuing Calibration Verification (CHEM33/1231_05-33_PAHSIM_1126) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.

QC (Batch Specific):

Batch 764619 (CS34967)

CS35349

All LCS recoveries were within 40 - 140 with the following exceptions: None.
All LCSD recoveries were within 40 - 140 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 04, 2025

SDG I.D.: GCS35349

VOA Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM23 12/27/24-1 Michael Hahn, Chemist 12/27/24

CS35349 (1X)

Initial Calibration Evaluation (CHEM23/VOA23_122324):
95% of target compounds met criteria.
The following compounds had %RSDs >20%: 1,2-Dibromo-3-chloropropane 24% (20%), Bromomethane 22% (20%), Naphthalene 33% (20%), trans-1,4-dichloro-2-butene 22% (20%)
The following compounds did not meet Table 4 recommended minimum response factors: None.

Continuing Calibration Verification (CHEM23/1227_03-VOA23_122324) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
97% of target compounds met criteria.
The following compounds did not meet % deviation criteria: Acrylonitrile 24%L (20%)
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet Table 4 recommended minimum response factors: None.

QC (Batch Specific):

Batch 764705 (CS34654) CHEM23 12/27/2024-1

CS35349(1X)

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

VPH Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

PIDFID 12/27/24-2 Raman Makol, Chemist 12/27/24

CS35349 (1X)

Initial Calibration Evaluation (PIDFID/VPH_121224_T):
The following compounds exceeded %RSD criteria: None.

QC (Batch Specific):

Batch 764508 (CS35349)

CS35349(1X)

All LCS recoveries were within 70 - 130 with the following exceptions: None.

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 04, 2025

SDG I.D.: GCS35349

VPH Narration

All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 25% with the following exceptions: None.
This batch consists of a Blank, LCS and LCSD.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Cooler: Yes ☑ No ☐
Coolant: IPK ☑ ICE ☐ No ☐

PHOENIX
Environmental Laboratories, Inc.

CT/MA/RI CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Temp 4.6 °C Pg of

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☑ Email: MSchweitzer@cmgenv.com

Customer: CMG Environmental
Address: 67 Hall Road
Sturbridge, MA 01566

Project: 2024-285
Report to: CMG
Invoice to: CMG
Quote #

Project P.O: 108+112 Beacon

This section MUST be completed with Bottle Quantities.

Sampler's Signature: Samantha Mann Date: 12-24-24

Client Sample - Information - Identification

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD (May be billable at analysis unit rate) VPH	VOCs 8260	EPH	Dissolved RCRA8	GL Amber 8 oz [ ] w/H_3PO_4 [ ] $NAHSO_4$	Soil VOA Vials [ ] methanol [ ] H_2O	GL Soil container [ ] methanol [ ] H_2O	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] HCl	PL As is [ ] 1250ml [ ] 500ml [ ] 1000ml	PL H_2SO_4 [ ] 1250ml [ ] 500ml [ ] 1000ml	PL HNO_3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
35349	MW-3	GW	12-24-24	11:00	X	X	X	X					6	2			1			

Relinquished by:	Accepted by:	Date:	Time:
Samantha Mann		12-26-24	855
		12/26/24	1618

Comments, Special Requirements or Regulations:
*Metals field filtered

Turnaround Time:
☐ 1 Day* ☑ Standard
☐ 2 Days* ☐ Other
☐ 3 Days*
☐ 4 Days*
☐ 5 Days*

***MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.**

*** SURCHARGES MAY APPLY**

RI
☐ RES DEC
☐ I/C DEC
☐ GA Leachability
☐ GB Leachability
☐ GA -GW Objectives
☐ GB -GW Objectives
☐ Other

CT
☐ RCP Cert
☐ GWPC
☐ SWPC
☐ GA PMC
☐ GB PMC
☐ SWPC
☐ RES DEC
☐ I/C DEC

MA
☑ MCP Certification
☑ GW-1 ☐ RCS-1 / RCGW-1
☐ GW-2 ☐ RCS-2 / RCGW-2
☐ GW-3 ☐ S-1 Calc.
☐ S-1
☐ S-2 ☐ _____
☐ S-3
☐ SW Protection

State where samples were collected: MA

Data Format
☐ Excel
☑ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist*
☐ Full Data Package*
☑ Phoenix Std
☐ Other

*** SURCHARGE APPLIES**

Form PEL-126 Rev. 9/23

Cooler: Yes ☒ No ☐
Coolant: IPK ☒ ICE ☐ No ☐

PHOENIX
Environmental Laboratories, Inc.

CT/MA/RI CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Temp 4.6 °C Pg of

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☑ Email: MSchwenker@cmgenv.com

Customer: CMG Environmental
Address: 67 Hall Road
Sturbridge, MA 01566

Project: 2024-285
Report to: CMG
Invoice to: CMG
Quote #

Project P.O: 108+112 Beacon

This section MUST be completed with Bottle Quantities.

Sampler's Signature: Samantha Barnes Date: 12-24-24

Client Sample - Information - Identification

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD (May be billable at analysis unit rate)	VPH	VOCs 8260	EPH	Dissolved RCRA8	GL Amber 8 oz. [ ] w/H_3PO_4 [ ] $NAHSO_4$	Soil VOA Vials [ ] methanol [ ] H_2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] HCl / H_2SO_4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H_2SO_4 [ ] 250ml [ ] 500ml	PL HNO_3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
35349	MW-3	GW	12-24-24	11:00		X	X	X	X					6	2			1			

Relinquished by:	Accepted by:	Date:	Time:
Samantha Barnes		12-26-24	855
		12/26/24	1618

Comments, Special Requirements or Regulations:
*Metals field filtered

Turnaround Time:
☐ 1 Day* ☐ 2 Days* ☐ 3 Days* ☐ 4 Days* ☐ 5 Days*
☑ Standard ☐ Other _____

***MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.**

*** SURCHARGES MAY APPLY**

RI
☐ RES DEC
☐ I/C DEC
☐ GA Leachability
☐ GB Leachability
☐ GA -GW Objectives
☐ GB -GW Objectives
☐ Other

CT
☐ RCP Cert
☐ GWPC
☐ SWPC
☐ GA PMC
☐ GB PMC
☐ SWPC
☐ RES DEC
☐ I/C DEC

MA
☑ MCP Certification
☑ GW-1 ☐ RCS-1 / RCGW-1
☐ GW-2 ☐ RCS-2 / RCGW-2
☐ GW-3 ☐ S-1 Calc.
☐ S-1
☐ S-2 ☐ _____
☐ S-3
☐ SW Protection

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist*
☐ Full Data Package*
☑ Phoenix Std
☐ Other

*** SURCHARGE APPLIES**

Form PEL-126 Rev. 9/23

Wednesday, January 22, 2025

Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Project ID: 2024-285
SDG ID: GCS43090
Sample ID#s: CS43090 - CS43095

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

January 22, 2025

SDG I.D.: GCS43090

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

The regulatory hold time for Filtration is 24 hours. Filtration was performed in the laboratory and may be considered outside of hold-time.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 22, 2025

SDG I.D.: GCS43090

Project ID: 2024-285

Client Id	Lab Id	Matrix	Col Date
MW-1	CS43090	GROUND WATER	01/10/25 9:30
MW-2	CS43091	GROUND WATER	01/10/25 10:15
MW-4	CS43092	GROUND WATER	01/10/25 10:40
MW-5	CS43093	GROUND WATER	01/10/25 13:15
MW-6	CS43094	GROUND WATER	01/10/25 13:45
SUMP	CS43095	SURFACE WATER	01/10/25 9:00

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 22, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:	SB	01/10/25	9:30
Location Code:	CMGENV	Received by:	SR1	01/13/25	14:35
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS43090
Phoenix ID: CS43090

Project ID: 2024-285
Client ID: MW-1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	01/14/25	TH	SW6010D
Barium (Dissolved)	0.048	0.002	mg/L	1	01/14/25	TH	SW6010D
Cadmium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Chromium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	01/22/25	ZT	SW7470A
Lead (Dissolved)	< 0.002	0.002	mg/L	1	01/14/25	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	01/14/25	TH	SW6010D
Mercury Dissolved Digestion	Completed				01/18/25	AK/GW	SW7470A
EPH Extraction	Completed				01/17/25	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				01/13/25	Z/MQ	SW3520C
Dissolved Metals Preparation	Completed				01/13/25	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				01/13/25		MADEP EPH-19
	Completed				01/14/25	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-1

Phoenix I.D.: CS43090

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Acetone	ND	25	ug/L	1	01/13/25	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Benzene	ND	0.70	ug/L	1	01/13/25	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
sec-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Styrene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
tert-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-1

Phoenix I.D.: CS43090

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Tetrachloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	01/13/25	MH	SW8260D
Toluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	103		%	1	01/13/25	MH	70 - 130 %
% Bromofluorobenzene	91		%	1	01/13/25	MH	70 - 130 %
% Dibromofluoromethane	97		%	1	01/13/25	MH	70 - 130 %
% Toluene-d8	100		%	1	01/13/25	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	01/13/25	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	01/14/25	MR	SW8270E (SIM)
Acenaphthene	ND	0.47	ug/L	1	01/14/25	MR	SW8270E (SIM)
Acenaphthylene	ND	0.09	ug/L	1	01/14/25	MR	SW8270E (SIM)
Anthracene	ND	0.09	ug/L	1	01/14/25	MR	SW8270E (SIM)
Benz(a)anthracene	ND	0.09	ug/L	1	01/14/25	MR	SW8270E (SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	01/14/25	MR	SW8270E (SIM)
Benzo(b)fluoranthene	ND	0.09	ug/L	1	01/14/25	MR	SW8270E (SIM)
Benzo(ghi)perylene	ND	0.02	ug/L	1	01/14/25	MR	SW8270E (SIM)
Benzo(k)fluoranthene	ND	0.09	ug/L	1	01/14/25	MR	SW8270E (SIM)
Chrysene	ND	0.05	ug/L	1	01/14/25	MR	SW8270E (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	01/14/25	MR	SW8270E (SIM)
Fluoranthene	ND	0.47	ug/L	1	01/14/25	MR	SW8270E (SIM)
Fluorene	ND	0.09	ug/L	1	01/14/25	MR	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	01/14/25	MR	SW8270E (SIM)
Naphthalene	ND	0.47	ug/L	1	01/14/25	MR	SW8270E (SIM)
Phenanthrene	ND	0.47	ug/L	1	01/14/25	MR	SW8270E (SIM)
Pyrene	ND	0.07	ug/L	1	01/14/25	MR	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	64		%	1	01/14/25	MR	40 - 140 %
% Nitrobenzene-d5	92		%	1	01/14/25	MR	40 - 140 %
% Terphenyl-d14	76		%	1	01/14/25	MR	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019

Ver 1

Project ID: 2024-285
Client ID: MW-1

Phoenix I.D.: CS43090

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
C19-C36 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	83		%	1	01/21/25	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	49		%	1	01/21/25	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	74		%	1	01/21/25	AW	40 - 140 %
% o-terphenyl (aromatic)	81		%	1	01/21/25	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	83		%	1	01/14/25	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	79		%	1	01/14/25	V	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Dissolved analysis requires filtration. Samples submitted from a preserved container are assumed to be field filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
January 22, 2025
Reviewed and Released by: Ethan Lee, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 22, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:	SB	01/10/25	10:15
Location Code:	CMGENV	Received by:	SR1	01/13/25	14:35
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS43090
Phoenix ID: CS43091

Project ID: 2024-285
Client ID: MW-2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	01/14/25	TH	SW6010D
Barium (Dissolved)	0.011	0.002	mg/L	1	01/14/25	TH	SW6010D
Cadmium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Chromium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	01/22/25	ZT	SW7470A
Lead (Dissolved)	< 0.002	0.002	mg/L	1	01/14/25	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	01/14/25	TH	SW6010D
Mercury Dissolved Digestion	Completed				01/18/25	AK/GW	SW7470A
EPH Extraction	Completed				01/17/25	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				01/14/25	Z/MQ	SW3520C
Dissolved Metals Preparation	Completed				01/13/25	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				01/13/25		MADEP EPH-19
	Completed				01/14/25	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-2

Phoenix I.D.: CS43091

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Acetone	ND	25	ug/L	1	01/13/25	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Benzene	ND	0.70	ug/L	1	01/13/25	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
sec-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Styrene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
tert-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-2

Phoenix I.D.: CS43091

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Tetrachloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	01/13/25	MH	SW8260D
Toluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	104		%	1	01/13/25	MH	70 - 130 %
% Bromofluorobenzene	93		%	1	01/13/25	MH	70 - 130 %
% Dibromofluoromethane	102		%	1	01/13/25	MH	70 - 130 %
% Toluene-d8	101		%	1	01/13/25	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	01/13/25	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthylene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Anthracene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benz(a)anthracene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(b)fluoranthene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(ghi)perylene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(k)fluoranthene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Chrysene	ND	0.05	ug/L	1	01/15/25	MR	SW8270E (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluoranthene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluorene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Naphthalene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Phenanthrene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Pyrene	ND	0.07	ug/L	1	01/15/25	MR	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	67		%	1	01/15/25	MR	40 - 140 %
% Nitrobenzene-d5	92		%	1	01/15/25	MR	40 - 140 %
% Terphenyl-d14	71		%	1	01/15/25	MR	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019

Ver 1

Project ID: 2024-285
Client ID: MW-2

Phoenix I.D.: CS43091

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
C19-C36 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	89		%	1	01/21/25	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	53		%	1	01/21/25	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	78		%	1	01/21/25	AW	40 - 140 %
% o-terphenyl (aromatic)	90		%	1	01/21/25	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	88		%	1	01/14/25	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	83		%	1	01/14/25	V	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Dissolved analysis requires filtration. Samples submitted from a preserved container are assumed to be field filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
January 22, 2025
Reviewed and Released by: Ethan Lee, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 22, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:	SB	01/10/25	10:40
Location Code:	CMGENV	Received by:	SR1	01/13/25	14:35
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS43090
Phoenix ID: CS43092

Project ID: 2024-285
Client ID: MW-4

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	01/14/25	TH	SW6010D
Barium (Dissolved)	0.016	0.002	mg/L	1	01/14/25	TH	SW6010D
Cadmium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Chromium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	01/22/25	ZT	SW7470A
Lead (Dissolved)	< 0.002	0.002	mg/L	1	01/14/25	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	01/14/25	TH	SW6010D
Mercury Dissolved Digestion	Completed				01/18/25	AK/GW	SW7470A
EPH Extraction	Completed				01/17/25	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				01/14/25	Z/MQ	SW3520C
Dissolved Metals Preparation	Completed				01/13/25	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				01/13/25		MADEP EPH-19
	Completed				01/14/25	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-4

Phoenix I.D.: CS43092

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Acetone	ND	25	ug/L	1	01/13/25	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Benzene	ND	0.70	ug/L	1	01/13/25	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
sec-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Styrene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
tert-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-4

Phoenix I.D.: CS43092

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Tetrachloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	01/13/25	MH	SW8260D
Toluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	103		%	1	01/13/25	MH	70 - 130 %
% Bromofluorobenzene	92		%	1	01/13/25	MH	70 - 130 %
% Dibromofluoromethane	98		%	1	01/13/25	MH	70 - 130 %
% Toluene-d8	100		%	1	01/13/25	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	01/13/25	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthylene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Anthracene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benz(a)anthracene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(b)fluoranthene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(ghi)perylene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(k)fluoranthene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Chrysene	ND	0.05	ug/L	1	01/15/25	MR	SW8270E (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluoranthene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluorene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Naphthalene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Phenanthrene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Pyrene	ND	0.07	ug/L	1	01/15/25	MR	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	68		%	1	01/15/25	MR	40 - 140 %
% Nitrobenzene-d5	95		%	1	01/15/25	MR	40 - 140 %
% Terphenyl-d14	76		%	1	01/15/25	MR	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019

Ver 1

Project ID: 2024-285
Client ID: MW-4

Phoenix I.D.: CS43092

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
C19-C36 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	67		%	1	01/21/25	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	77		%	1	01/21/25	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	86		%	1	01/21/25	AW	40 - 140 %
% o-terphenyl (aromatic)	79		%	1	01/21/25	AW	40 - 140 %
MA Volatile Petroleum Hydrocarbons (VPH)							
Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	87		%	1	01/14/25	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	82		%	1	01/14/25	V	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Dissolved analysis requires filtration. Samples submitted from a preserved container are assumed to be field filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
January 22, 2025
Reviewed and Released by: Ethan Lee, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 22, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:	SB	01/10/25	13:15
Location Code:	CMGENV	Received by:	SR1	01/13/25	14:35
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS43090
Phoenix ID: CS43093

Project ID: 2024-285
Client ID: MW-5

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	01/14/25	TH	SW6010D
Barium (Dissolved)	0.028	0.002	mg/L	1	01/14/25	TH	SW6010D
Cadmium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Chromium (Dissolved)	0.003	0.001	mg/L	1	01/14/25	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	01/22/25	ZT	SW7470A
Lead (Dissolved)	0.002	0.002	mg/L	1	01/14/25	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	01/14/25	TH	SW6010D
Mercury Dissolved Digestion	Completed				01/18/25	AK/GW	SW7470A
EPH Extraction	Completed				01/17/25	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				01/14/25	Z/MQ	SW3520C
Dissolved Metals Preparation	Completed				01/13/25	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				01/13/25		MADEP EPH-19
	Completed				01/14/25	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-5

Phoenix I.D.: CS43093

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Acetone	ND	25	ug/L	1	01/13/25	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Benzene	ND	0.70	ug/L	1	01/13/25	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
sec-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Styrene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
tert-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-5

Phoenix I.D.: CS43093

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Tetrachloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	01/13/25	MH	SW8260D
Toluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	101		%	1	01/13/25	MH	70 - 130 %
% Bromofluorobenzene	90		%	1	01/13/25	MH	70 - 130 %
% Dibromofluoromethane	101		%	1	01/13/25	MH	70 - 130 %
% Toluene-d8	101		%	1	01/13/25	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	01/13/25	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.52	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthene	ND	0.52	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthylene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Anthracene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benz(a)anthracene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(a)pyrene	ND	0.20	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(b)fluoranthene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(ghi)perylene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(k)fluoranthene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Chrysene	ND	0.05	ug/L	1	01/15/25	MR	SW8270E (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluoranthene	ND	0.52	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluorene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Naphthalene	ND	0.52	ug/L	1	01/15/25	MR	SW8270E (SIM)
Phenanthrene	ND	0.52	ug/L	1	01/15/25	MR	SW8270E (SIM)
Pyrene	ND	0.07	ug/L	1	01/15/25	MR	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	65		%	1	01/15/25	MR	40 - 140 %
% Nitrobenzene-d5	97		%	1	01/15/25	MR	40 - 140 %
% Terphenyl-d14	60		%	1	01/15/25	MR	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019

Ver 1

Project ID: 2024-285
Client ID: MW-5

Phoenix I.D.: CS43093

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
C19-C36 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	68		%	1	01/21/25	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	52		%	1	01/21/25	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	74		%	1	01/21/25	AW	40 - 140 %
% o-terphenyl (aromatic)	83		%	1	01/21/25	AW	40 - 140 %

MA Volatile Petroleum Hydrocarbons (VPH)

Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	86		%	1	01/14/25	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	81		%	1	01/14/25	V	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Dissolved analysis requires filtration. Samples submitted from a preserved container are assumed to be field filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
January 22, 2025
Reviewed and Released by: Ethan Lee, Project Manager

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 22, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:	SB	01/10/25	13:45
Location Code:	CMGENV	Received by:	SR1	01/13/25	14:35
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS43090
Phoenix ID: CS43094

Project ID: 2024-285
Client ID: MW-6

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	01/14/25	TH	SW6010D
Barium (Dissolved)	0.022	0.002	mg/L	1	01/14/25	TH	SW6010D
Cadmium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Chromium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	01/22/25	ZT	SW7470A
Lead (Dissolved)	< 0.002	0.002	mg/L	1	01/14/25	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	01/14/25	TH	SW6010D
Mercury Dissolved Digestion	Completed				01/18/25	AK/GW	SW7470A
EPH Extraction	Completed				01/17/25	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				01/14/25	Z/MQ	SW3520C
Dissolved Metals Preparation	Completed				01/13/25	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				01/13/25		MADEP EPH-19
	Completed				01/14/25	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-6

Phoenix I.D.: CS43094

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Acetone	ND	25	ug/L	1	01/13/25	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Benzene	ND	0.70	ug/L	1	01/13/25	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
sec-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Styrene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
tert-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Tetrachloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	01/13/25	MH	SW8260D
Toluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	103		%	1	01/13/25	MH	70 - 130 %
% Bromofluorobenzene	92		%	1	01/13/25	MH	70 - 130 %
% Dibromofluoromethane	101		%	1	01/13/25	MH	70 - 130 %
% Toluene-d8	102		%	1	01/13/25	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	01/13/25	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthylene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Anthracene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benz(a)anthracene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(b)fluoranthene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(ghi)perylene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(k)fluoranthene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Chrysene	ND	0.05	ug/L	1	01/15/25	MR	SW8270E (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluoranthene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluorene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Naphthalene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Phenanthrene	ND	0.47	ug/L	1	01/15/25	MR	SW8270E (SIM)
Pyrene	ND	0.07	ug/L	1	01/15/25	MR	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	65		%	1	01/15/25	MR	40 - 140 %
% Nitrobenzene-d5	93		%	1	01/15/25	MR	40 - 140 %
% Terphenyl-d14	70		%	1	01/15/25	MR	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019

Ver 1

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Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference	
C19-C36 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019	
C9-C18 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019	
QA/QC Surrogates								
% 1-chlorooctadecane (aliphatic)	32		%	1	01/21/25	AW	40 - 140 %	3
% 2-Bromonaphthalene (Fractionation)	59		%	1	01/21/25	AW	40 - 140 %	
% 2-Fluorobiphenyl (Fractionation)	76		%	1	01/21/25	AW	40 - 140 %	
% o-terphenyl (aromatic)	83		%	1	01/21/25	AW	40 - 140 %	

MA Volatile Petroleum Hydrocarbons (VPH)

Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	89		%	1	01/14/25	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	83		%	1	01/14/25	V	70 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

3 = This parameter exceeds laboratory specified limits.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

EPH Comment
Poor Surrogate recovery. Insufficient sample for rextraction.

Dissolved analysis requires filtration. Samples submitted from a preserved container are assumed to be field filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

January 22, 2025

Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

January 22, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:	SB	01/10/25	9:00
Location Code:	CMGENV	Received by:	SR1	01/13/25	14:35
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS43090
Phoenix ID: CS43095

Project ID: 2024-285
Client ID: SUMP

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	01/14/25	TH	SW6010D
Barium (Dissolved)	0.035	0.002	mg/L	1	01/14/25	TH	SW6010D
Cadmium (Dissolved)	0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Chromium (Dissolved)	< 0.001	0.001	mg/L	1	01/14/25	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	01/22/25	ZT	SW7470A
Lead (Dissolved)	< 0.002	0.002	mg/L	1	01/14/25	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	01/14/25	TH	E200.7-4.4
Lab Filtration	Completed				01/13/25	AG	0.45um Filter
Mercury Dissolved Digestion	Completed				01/18/25	AK/GW	SW7470A
EPH Extraction	Completed				01/17/25	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				01/14/25	Z/MQ	SW3520C
Dissolved Metals Preparation	Completed				01/13/25	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				01/13/25		MADEP EPH-19
	Completed				01/14/25	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Project ID: 2024-285
Client ID: SUMP

Phoenix I.D.: CS43095

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	01/13/25	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Acetone	ND	25	ug/L	1	01/13/25	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Benzene	ND	0.70	ug/L	1	01/13/25	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	01/13/25	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
sec-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Styrene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
tert-Butylbenzene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Tetrachloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	01/13/25	MH	SW8260D
Toluene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	01/13/25	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	01/13/25	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	01/13/25	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	103		%	1	01/13/25	MH	70 - 130 %
% Bromofluorobenzene	90		%	1	01/13/25	MH	70 - 130 %
% Dibromofluoromethane	101		%	1	01/13/25	MH	70 - 130 %
% Toluene-d8	101		%	1	01/13/25	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	01/13/25	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	01/13/25	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.50	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthene	ND	0.50	ug/L	1	01/15/25	MR	SW8270E (SIM)
Acenaphthylene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Anthracene	ND	0.09	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benz(a)anthracene	0.17	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(a)pyrene	0.20	0.20	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(b)fluoranthene	0.21	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(ghi)perylene	0.19	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Benzo(k)fluoranthene	0.21	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Chrysene	0.22	0.05	ug/L	1	01/15/25	MR	SW8270E (SIM)
Dibenz(a,h)anthracene	0.04	0.02	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluoranthene	ND	0.50	ug/L	1	01/15/25	MR	SW8270E (SIM)
Fluorene	ND	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	0.19	0.10	ug/L	1	01/15/25	MR	SW8270E (SIM)
Naphthalene	ND	0.50	ug/L	1	01/15/25	MR	SW8270E (SIM)
Phenanthrene	ND	0.50	ug/L	1	01/15/25	MR	SW8270E (SIM)
Pyrene	0.36	0.07	ug/L	1	01/15/25	MR	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	61		%	1	01/15/25	MR	40 - 140 %
% Nitrobenzene-d5	91		%	1	01/15/25	MR	40 - 140 %
% Terphenyl-d14	68		%	1	01/15/25	MR	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019

Project ID: 2024-285
Client ID: SUMP

Phoenix I.D.: CS43095

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
C11-C22 Aromatic Hydrocarbons Un	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C19-C36 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	190	ug/L	1	01/21/25	AW	MAEPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	102		%	1	01/21/25	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	83		%	1	01/21/25	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	86		%	1	01/21/25	AW	40 - 140 %
% o-terphenyl (aromatic)	84		%	1	01/21/25	AW	40 - 140 %

MA Volatile Petroleum Hydrocarbons (VPH)

Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	01/14/25	V	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	87		%	1	01/14/25	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	82		%	1	01/14/25	V	70 - 130 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Dissolved analysis requires filtration. Samples submitted from an unpreserved container have been lab filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
January 22, 2025
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

QA/QC Report

January 22, 2025

QA/QC Data

SDG I.D.: GCS43090

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 767141 (mg/L), QC Sample No: CS43996 (CS43090, CS43091, CS43092, CS43093, CS43094, CS43095)													
Mercury (Dissolved)	BRL	0.0002	<0.0002	<0.0002	NC	104			102			80 - 120	20
Comment:													
Additional Mercury Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range is 75-125% for aqueous and 80-120% for soils.													
QA/QC Batch 766192 (mg/L), QC Sample No: CS42529 (CS43090, CS43091, CS43092, CS43093, CS43094, CS43095)													
ICP Metals - Dissolved													
Arsenic	BRL	0.004	<0.004	<0.004	NC	85.4	88.6	3.7	90.2			80 - 120	20
Barium	BRL	0.002	0.011	0.011	0	88.9	92.5	4.0	93.6			80 - 120	20
Cadmium	BRL	0.001	<0.001	<0.001	NC	88.3	91.1	3.1	93.2			80 - 120	20
Chromium	BRL	0.001	<0.001	<0.001	NC	86.2	88.8	3.0	91.1			80 - 120	20
Lead	BRL	0.002	<0.002	<0.002	NC	88.4	91.1	3.0	92.7			80 - 120	20
Selenium	BRL	0.011	<0.011	<0.011	NC	86.3	89.0	3.1	90.6			80 - 120	20
Silver	BRL	0.001	<0.001	<0.001	NC	85.9	88.8	3.3	90.8			80 - 120	20
Comment:													
Additional Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range 75-125%.													

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QA/QC Report

January 22, 2025

QA/QC Data

SDG I.D.: GCS43090

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 766936 (ug/L), QC Sample No: CS43590 (CS43090, CS43091, CS43092, CS43093, CS43094, CS43095)											
MAEPH - Ground Water, Surface Water											
C9-C18 Aliphatic Hydrocarbons 1*	ND	100	62	59	5.0	61	63	3.2	40 - 140	25	
C19-C36 Aliphatic Hydrocarbons 1*	ND	100	83	75	10.1	75	76	1.3	40 - 140	25	
C11-C22 Aromatic Hydrocarbons 1	ND	100	73	72	1.4	70	73	4.2	40 - 140	25	
C11-C22 Aromatic Hydrocarbons U	ND	100							40 - 140	25	
C9 - Nonane	ND	10	35	33	5.9	35	37	5.6	40 - 140	25	l,m
C-10 Decane	ND	10	50	46	8.3	50	52	3.9	40 - 140	25	
C12 - Dodecane	ND	10	55	52	5.6	55	58	5.3	40 - 140	25	
C14 - Tetradecane	ND	10	65	61	6.3	63	66	4.7	40 - 140	25	
C16 - Hexadecane	ND	10	75	72	4.1	74	75	1.3	40 - 140	25	
C18 - Octadecane	ND	10	91	91	0.0	89	92	3.3	40 - 140	25	
C19 - Nonadecane	ND	10	91	89	2.2	88	89	1.1	40 - 140	25	
C20 - Eicosane	ND	10	93	91	2.2	90	91	1.1	40 - 140	25	
C22 - Docosane	ND	10	85	82	3.6	82	82	0.0	40 - 140	25	
C24 - Tetracosane	ND	10	97	95	2.1	94	95	1.1	40 - 140	25	
C26 - Hexacosane	ND	10	93	90	3.3	90	91	1.1	40 - 140	25	
C28 - Octacosane	ND	10	87	83	4.7	83	83	0.0	40 - 140	25	
C30 - Tricotane	ND	10	81	73	10.4	73	74	1.4	40 - 140	25	
C36 - Hexatriacontane	ND	10	36	<10	NC	<10	<10	NC	40 - 140	25	l,m
% 1-chlorooctadecane (aliphatic)	67	%	95	93	2.1	90	92	2.2	40 - 140	25	
% o-terphenyl (aromatic)	91	%	88	87	1.1	86	90	4.5	40 - 140	25	
% 2-Fluorobiphenyl (Fractionation)	94	%	102	98	4.0	103	105	1.9	40 - 140	25	
% 2-Bromonaphthalene (Fractionati	88	%	103	97	6.0	104	108	3.8	40 - 140	25	
% 2-Methylnaphthalene BT		%	0	0	NC				0 - 5		
% Naphthalene BT		%	0	0	NC				0 - 5		
Comment:											
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%											
QA/QC Batch 766217 (ug/L), QC Sample No: CS42665 (CS43090)											
Semivolatiles by SIM, PAH - Ground Water											
2-Methylnaphthalene	ND	0.50	67	64	4.6				40 - 140	20	
Acenaphthene	ND	0.50	73	69	5.6				40 - 140	20	
Acenaphthylene	ND	0.10	71	67	5.8				40 - 140	20	
Anthracene	ND	0.10	76	71	6.8				40 - 140	20	
Benz(a)anthracene	ND	0.05	81	77	5.1				40 - 140	20	
Benzo(a)pyrene	ND	0.05	77	76	1.3				40 - 140	20	
Benzo(b)fluoranthene	ND	0.05	75	74	1.3				40 - 140	20	
Benzo(ghi)perylene	ND	0.02	66	66	0.0				40 - 140	20	
Benzo(k)fluoranthene	ND	0.05	75	75	0.0				40 - 140	20	
Chrysene	ND	0.05	73	70	4.2				40 - 140	20	
Dibenz(a,h)anthracene	ND	0.02	71	71	0.0				40 - 140	20	
Fluoranthene	ND	0.50	80	75	6.5				40 - 140	20	

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Fluorene	ND	0.10	78	73	6.6				40 - 140	20
Indeno(1,2,3-cd)pyrene	ND	0.05	73	72	1.4				40 - 140	20
Naphthalene	ND	0.50	63	59	6.6				40 - 140	20
Phenanthrene	ND	0.06	68	65	4.5				40 - 140	20
Pyrene	ND	0.07	77	74	4.0				40 - 140	20
% 2-Fluorobiphenyl	74	%	70	66	5.9				40 - 140	20
% Nitrobenzene-d5	92	%	96	91	5.3				40 - 140	20
% Terphenyl-d14	86	%	74	72	2.7				40 - 140	20

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 766391 (ug/L), QC Sample No: CS43091 (CS43091, CS43092, CS43093, CS43094, CS43095)

Semivolatiles by SIM, PAH - Ground Water, Surface Water

2-Methylnaphthalene	ND	0.50	57	55	3.6				40 - 140	20
Acenaphthene	ND	0.50	60	61	1.7				40 - 140	20
Acenaphthylene	ND	0.10	57	58	1.7				40 - 140	20
Anthracene	ND	0.10	70	67	4.4				40 - 140	20
Benz(a)anthracene	ND	0.02	76	72	5.4				40 - 140	20
Benzo(a)pyrene	ND	0.02	75	74	1.3				40 - 140	20
Benzo(b)fluoranthene	ND	0.02	71	69	2.9				40 - 140	20
Benzo(ghi)perylene	ND	0.02	69	69	0.0				40 - 140	20
Benzo(k)fluoranthene	ND	0.02	71	70	1.4				40 - 140	20
Chrysene	ND	0.02	67	65	3.0				40 - 140	20
Dibenz(a,h)anthracene	ND	0.02	76	75	1.3				40 - 140	20
Fluoranthene	ND	0.50	73	71	2.8				40 - 140	20
Fluorene	ND	0.10	67	65	3.0				40 - 140	20
Indeno(1,2,3-cd)pyrene	ND	0.02	78	76	2.6				40 - 140	20
Naphthalene	ND	0.50	49	50	2.0				40 - 140	20
Phenanthrene	ND	0.06	63	60	4.9				40 - 140	20
Pyrene	ND	0.07	72	70	2.8				40 - 140	20
% 2-Fluorobiphenyl	66	%	53	54	1.9				40 - 140	20
% Nitrobenzene-d5	84	%	57	68	17.6				40 - 140	20
% Terphenyl-d14	81	%	68	67	1.5				40 - 140	20

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 766358 (ug/L), QC Sample No: CS42956 (CS43090, CS43091, CS43092, CS43093, CS43094, CS43095)

Volatiles - Ground Water, Surface Water

1,1,1,2-Tetrachloroethane	ND	1.0	104	102	1.9				70 - 130	20
1,1,1-Trichloroethane	ND	1.0	103	101	2.0				70 - 130	20
1,1,2,2-Tetrachloroethane	ND	0.50	101	101	0.0				70 - 130	20
1,1,2-Trichloroethane	ND	1.0	101	104	2.9				70 - 130	20
1,1-Dichloroethane	ND	1.0	106	107	0.9				70 - 130	20
1,1-Dichloroethene	ND	1.0	105	104	1.0				70 - 130	20
1,1-Dichloropropene	ND	1.0	93	87	6.7				70 - 130	20
1,2,3-Trichlorobenzene	ND	1.0	105	105	0.0				70 - 130	20
1,2,3-Trichloropropane	ND	1.0	94	94	0.0				70 - 130	20
1,2,4-Trichlorobenzene	ND	1.0	105	103	1.9				70 - 130	20
1,2,4-Trimethylbenzene	ND	1.0	103	104	1.0				70 - 130	20

QA/QC Data

SDG I.D.: GCS43090

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
1,2-Dibromo-3-chloropropane	ND	1.0	96	99	3.1				70 - 130	20
1,2-Dibromoethane	ND	1.0	100	104	3.9				70 - 130	20
1,2-Dichlorobenzene	ND	1.0	101	101	0.0				70 - 130	20
1,2-Dichloroethane	ND	1.0	101	101	0.0				70 - 130	20
1,2-Dichloropropane	ND	1.0	104	103	1.0				70 - 130	20
1,3,5-Trimethylbenzene	ND	1.0	102	100	2.0				70 - 130	20
1,3-Dichlorobenzene	ND	1.0	104	103	1.0				70 - 130	20
1,3-Dichloropropane	ND	1.0	99	99	0.0				70 - 130	20
1,4-Dichlorobenzene	ND	1.0	104	102	1.9				70 - 130	20
1,4-dioxane	ND	100	104	109	4.7				40 - 160	20
2,2-Dichloropropane	ND	1.0	107	102	4.8				70 - 130	20
2-Chlorotoluene	ND	1.0	102	102	0.0				70 - 130	20
2-Hexanone	ND	5.0	85	86	1.2				40 - 160	20
2-Isopropyltoluene	ND	1.0	103	102	1.0				70 - 130	20
4-Chlorotoluene	ND	1.0	104	105	1.0				70 - 130	20
4-Methyl-2-pentanone	ND	5.0	90	93	3.3				40 - 160	20
Acetone	ND	5.0	105	105	0.0				40 - 160	20
Acrylonitrile	ND	5.0	96	100	4.1				70 - 130	20
Benzene	ND	0.70	102	92	10.3				70 - 130	20
Bromobenzene	ND	1.0	102	103	1.0				70 - 130	20
Bromochloromethane	ND	1.0	108	110	1.8				70 - 130	20
Bromodichloromethane	ND	0.50	103	103	0.0				70 - 130	20
Bromoform	ND	1.0	101	102	1.0				70 - 130	20
Bromomethane	ND	1.0	123	119	3.3				40 - 160	20
Carbon Disulfide	ND	1.0	103	104	1.0				70 - 130	20
Carbon tetrachloride	ND	1.0	91	89	2.2				70 - 130	20
Chlorobenzene	ND	1.0	103	102	1.0				70 - 130	20
Chloroethane	ND	1.0	96	95	1.0				70 - 130	20
Chloroform	ND	1.0	107	111	3.7				70 - 130	20
Chloromethane	ND	1.0	118	115	2.6				40 - 160	20
cis-1,2-Dichloroethene	ND	1.0	104	107	2.8				70 - 130	20
cis-1,3-Dichloropropene	ND	0.40	103	102	1.0				70 - 130	20
Dibromochloromethane	ND	0.50	105	106	0.9				70 - 130	20
Dibromomethane	ND	1.0	100	99	1.0				70 - 130	20
Dichlorodifluoromethane	ND	1.0	100	98	2.0				40 - 160	20
Di-isopropyl ether	ND	1.0	100	100	0.0				70 - 130	20
Ethyl ether	ND	1.0	102	102	0.0				70 - 130	20
Ethyl tert-butyl ether	ND	1.0	99	101	2.0				70 - 130	20
Ethylbenzene	ND	1.0	101	100	1.0				70 - 130	20
Hexachlorobutadiene	ND	0.40	91	92	1.1				70 - 130	20
Isopropylbenzene	ND	1.0	99	100	1.0				70 - 130	20
m&p-Xylene	ND	1.0	105	103	1.9				70 - 130	20
Methyl ethyl ketone	ND	5.0	98	101	3.0				40 - 160	20
Methyl t-butyl ether (MTBE)	ND	1.0	98	98	0.0				70 - 130	20
Methylene chloride	ND	1.0	104	102	1.9				70 - 130	20
Naphthalene	ND	1.0	111	112	0.9				70 - 130	20
n-Butylbenzene	ND	1.0	103	100	3.0				70 - 130	20
n-Propylbenzene	ND	1.0	99	98	1.0				70 - 130	20
o-Xylene	ND	1.0	104	104	0.0				70 - 130	20
p-Isopropyltoluene	ND	1.0	102	100	2.0				70 - 130	20
sec-Butylbenzene	ND	1.0	100	99	1.0				70 - 130	20
Styrene	ND	1.0	105	105	0.0				70 - 130	20
tert-amyl methyl ether	ND	1.0	91	90	1.1				70 - 130	20

QA/QC Data

SDG I.D.: GCS43090

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
tert-Butylbenzene	ND	1.0	99	97	2.0				70 - 130	20
Tetrachloroethene	ND	1.0	98	98	0.0				70 - 130	20
Tetrahydrofuran (THF)	ND	2.5	90	93	3.3				70 - 130	20
Toluene	ND	1.0	101	100	1.0				70 - 130	20
trans-1,2-Dichloroethene	ND	1.0	103	102	1.0				70 - 130	20
trans-1,3-Dichloropropene	ND	0.40	103	104	1.0				70 - 130	20
trans-1,4-dichloro-2-butene	ND	5.0	104	102	1.9				70 - 130	20
Trichloroethene	ND	1.0	99	97	2.0				70 - 130	20
Trichlorofluoromethane	ND	1.0	102	98	4.0				70 - 130	20
Trichlorotrifluoroethane	ND	1.0	100	99	1.0				70 - 130	20
Vinyl chloride	ND	1.0	105	102	2.9				70 - 130	20
% 1,2-dichlorobenzene-d4	102	%	103	101	2.0				70 - 130	20
% Bromofluorobenzene	93	%	100	101	1.0				70 - 130	20
% Dibromofluoromethane	101	%	97	98	1.0				70 - 130	20
% Toluene-d8	100	%	99	100	1.0				70 - 130	20

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

QA/QC Batch 766531 (ug/L), QC Sample No: CS42651 (CS43090, CS43091, CS43092, CS43093, CS43094, CS43095)

Volatile Petroleum Hydrocarbons - Ground Water, Surface Water

Unadjusted C5-C8 Aliphatics (*1)	ND	100	96	97	1.0	107	103	3.8	70 - 130	25
Unadjusted C9-C12 Aliphatics (*1)	ND	100	89	92	3.3	92	92	0.0	70 - 130	25
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	96	97	1.0	107	103	3.8	70 - 130	25
C9-C12 Aliphatic Hydrocarbons *1,	ND	100	89	92	3.3	92	92	0.0	70 - 130	25
C9-C10 Aromatic Hydrocarbons *1	ND	100	95	97	2.1	98	93	5.2	70 - 130	25
Benzene	ND	1.0	94	96	2.1	101	99	2.0	70 - 130	25
Ethyl Benzene	ND	1.0	93	95	2.1	99	96	3.1	70 - 130	25
MTBE	ND	1.0	88	86	2.3	87	86	1.2	70 - 130	25
Naphthalene	ND	5.0	91	88	3.4	89	85	4.6	70 - 130	25
Toluene	ND	1.0	95	97	2.1	102	99	3.0	70 - 130	25
m,p-Xylenes	ND	2.0	94	97	3.1	100	97	3.0	70 - 130	25
o-Xylene	ND	1.0	91	93	2.2	95	92	3.2	70 - 130	25
% 2,5-Dibromotoluene (PID)	80	%	83	81	2.4	78	81	3.8	70 - 130	25
% 2,5-Dibromotoluene (FID)	84	%	87	85	2.3	82	86	4.8	70 - 130	25

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.
m = This parameter is outside laboratory MS/MSD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference
(ISO) - Isotope Dilution

Phyllis Shiller, Laboratory Director
January 22, 2025

Wednesday, January 22, 2025

Criteria: MA: CAM, GW1

State: MA

Sample Criteria Exceedances Report

GCS43090 - CMGENV

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CS43090	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS43090	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43090	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS43090	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43090	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS43090	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS43090	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	0.3	0.3	ug/L
CS43090	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L
CS43091	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43091	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS43091	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS43091	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43091	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS43091	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS43091	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	0.3	0.3	ug/L
CS43091	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L
CS43092	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS43092	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43092	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS43092	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43092	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS43092	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS43092	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	0.3	0.3	ug/L
CS43092	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L
CS43093	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS43093	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43093	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS43093	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43093	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS43093	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS43093	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	0.3	0.3	ug/L
CS43093	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L
CS43094	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43094	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS43094	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS43094	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43094	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS43094	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS43094	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	0.3	0.3	ug/L

Wednesday, January 22, 2025

Criteria: MA: CAM, GW1

State: MA

Sample Criteria Exceedances Report

GCS43090 - CMGENV

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CS43094	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L
CS43095	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS43095	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43095	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS43095	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS43095	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS43095	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS43095	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	0.3	0.3	ug/L
CS43095	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L

MassDEP Analytical Protocol Certification Form

Laboratory Name: Phoenix Environmental Laboratories, Inc. **Project #:**

Project Location: 2024-285 **RTN:**

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]
CS43090, CS43091, CS43092, CS43093, CS43094, CS43095

Matrices: ☑ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below)

8260 VOC CAM II A ☑	7470/7471 Hg CAM III B ☑	MassDEP VPH CAM IV A ☑	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☑	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☑	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☑	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9012 Total Cyanide/PAC CAM V1 A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature*) in the field or laboratory, and prepared/analyzed with method holding times? (* see narrative)	☑ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements speified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes ☐ No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 methods only: Was the complete analyte list reported for each method?	☑ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☑ Yes ☐ No

Responses to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes ☑ No

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056(2)(k) and WSC-07-350

H	Were all QC performance standards specified in the CAM protocol(s) achieved? See Section: EPH Narration .	☐ Yes ☑ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes ☑ No

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Authorized Signature: Ethan Lee

Date: Wednesday, January 22, 2025

Printed Name: Ethan Lee

Position: Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 22, 2025

SDG I.D.: GCS43090

SDG Comments

Metals Analysis:
The client requested a shorter list of elements than the 6010 MCP list.

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

EPH Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? No.

QC Batch 766936 (Samples: CS43090, CS43091, CS43092, CS43093, CS43094, CS43095): -----

The QC recoveries for one or more analytes is below the method criteria. A slight low bias is likely. (C36 - Hexatriacontane, C9 - Nonane)

Instrument:

AU-FID4 01/20/25-1 Adam Werner, Chemist 01/20/25

CS43090 (1X), CS43091 (1X), CS43092 (1X), CS43093 (1X), CS43094 (1X), CS43095 (1X)

The initial calibration (AL1115AI) RSD for the compound list was less than 25% except for the following compounds: None.
The continuing calibration %D for the compound list was less than 25% except for the following compounds:None.

QC (Batch Specific):

Batch 766936 (CS43590)

CS43090, CS43091, CS43092, CS43093, CS43094, CS43095

All LCS recoveries were within 40 - 140 with the following exceptions: C36 - Hexatriacontane(36%), C9 - Nonane(35%)
All LCSD recoveries were within 40 - 140 with the following exceptions: C36 - Hexatriacontane(<10%), C9 - Nonane(33%)
All LCS/LCSD RPDs were less than 25% with the following exceptions: None.
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SVOASIM Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM33 01/14/25-2 Matt Richard, Chemist 01/14/25

CS43090 (1X)

Initial Calibration Evaluation (CHEM33/33_PAHSIM_0109):
100% of target compounds met criteria.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 22, 2025

SDG I.D.: GCS43090

SVOASIM Narration

The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.

Continuing Calibration Verification (CHEM33/0114_22-33_PAHSIM_0109) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
90% of target compounds met criteria.
The following compounds did not meet % deviation criteria: % Nitrobenzene-d5 23%H (20%)
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.

CHEM33 01/15/25-1 Matt Richard, Chemist 01/15/25

CS43091 (1X), CS43092 (1X), CS43093 (1X), CS43094 (1X), CS43095 (1X)

Initial Calibration Evaluation (CHEM33/33_PAHSIM_0109):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.

Continuing Calibration Verification (CHEM33/0115_03-33_PAHSIM_0109) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
95% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.

QC (Batch Specific):

Batch 766217 (CS42665)

CS43090

All LCS recoveries were within 40 - 140 with the following exceptions: None.
All LCSD recoveries were within 40 - 140 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

Batch 766391 (CS43091)

CS43091, CS43092, CS43093, CS43094, CS43095

All LCS recoveries were within 40 - 140 with the following exceptions: None.
All LCSD recoveries were within 40 - 140 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

We attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

VOA Narration

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 22, 2025

SDG I.D.: GCS43090

VOA Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM23 01/13/25-2 Michael Hahn, Chemist 01/13/25

CS43090 (1X), CS43091 (1X), CS43092 (1X), CS43093 (1X), CS43094 (1X), CS43095 (1X)

Initial Calibration Evaluation (CHEM23/VOA23_123024):
98% of target compounds met criteria.
The following compounds had %RSDs >20%: 1,2-Dibromo-3-chloropropane 23% (20%), trans-1,4-dichloro-2-butene 28% (20%)
The following compounds did not meet Table 4 recommended minimum response factors: None.

Continuing Calibration Verification (CHEM23/0113_28-VOA23_123024) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet Table 4 recommended minimum response factors: None.

QC (Batch Specific):

Batch 766358 (CS42956) CHEM23 1/13/2025-2

CS43090(1X), CS43091(1X), CS43092(1X), CS43093(1X), CS43094(1X), CS43095(1X)

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

VPH Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

PIDFID 01/14/25-1 James Karabetsos, Chemist 01/14/25

CS43090 (1X), CS43091 (1X), CS43092 (1X), CS43093 (1X), CS43094 (1X), CS43095 (1X)

Initial Calibration Evaluation (PIDFID/VPH_010325_T):
The following compounds exceeded %RSD criteria: None.

QC (Batch Specific):

Batch 766531 (CS42651)

CS43090(1X), CS43091(1X), CS43092(1X), CS43093(1X), CS43094(1X), CS43095(1X)

All LCS recoveries were within 70 - 130 with the following exceptions: None.

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 22, 2025

SDG I.D.: GCS43090

VPH Narration

All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 25% with the following exceptions: None.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Cooler: Yes ☑ No ☐
Coolant: IPK ☐ ICE ☑ No ☐
Temp 1.4 C Pg of

PHOENIX
Environmental Laboratories, Inc.

CT/MA/RI CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Data Delivery/Contact Options:
☐ Fax: _____
☐ Phone: _____
☑ Email: nschweaker@cmgenv.com

Customer: CMG Environmental
Address: 67 Hall Road
Sturbridge, MA 01566

Project: 2024-285
Report to: CMG
Invoice to: CMG
Quote #

Project P.O: Beacon

This section MUST be completed with Bottle Quantities.

Sampler's Signature: Samantha Bonner Date: 1-10-25

Client Sample Information - Identification

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD (May be billable at analysis unit rate)	VOCs	VPH	Dissolved RCRA FPH	GL Amber 8 oz [ ] w/H_3PO_4 [ ] $NaHSO_4$	Soil VOA Vials [ ] methanol [ ] H_2O	GL Soil container [ ] oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] HCl	PL As is [ ]	PL H_2SO_4 [ ] 250ml [ ] 500ml [ ] 1000ml	PL HNO_3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
43090	MW-1	GW	1-10-25	9:30		X	X	X	X						6	2			1	
43091	MW-2			10:15		X	X	X	X						6	2			1	
43092	MW-4			10:40		X	X	X	X						6	2			1	
43093	MW-5			13:15		X	X	X	X						6	2			1	
43094	MW-6	↓		13:45		X	X	X	X						6	2			1	
43095	Sump	SW	↓	9:00		X	X	X	X						6	2	1			

Relinquished by:	Accepted by:	Date:	Time:
Samantha Bonner		1-13-25	1800
		1/13/25	14:35

Comments, Special Requirements or Regulations:
*Metals in GW samples field filtered
*Lab filter SW sample

Turnaround Time:
☐ 1 Day* ☐ 2 Days* ☐ 3 Days* ☐ 4 Days* ☐ 5 Days*
☑ Standard ☐ Other _____

RI
☐ RES DEC ☐ I/C DEC ☐ GA Leachability ☐ GB Leachability ☐ GA -GW Objectives ☐ GB -GW Objectives ☐ Other

CT
☐ RCP Cert ☐ GWPC ☐ SWPC ☐ GA PMC ☐ GB PMC ☐ SWPC ☐ RES DEC ☐ I/C DEC

MA
☑ MCP Certification
☑ GW-1 ☐ GW-2 ☐ GW-3 ☐ S-1 ☐ S-2 ☐ S-3 ☐ SW Protection
☐ RCS-1 / RCGW-1 ☐ RCS-2 / RCGW-2 ☐ S-1 Calc. ☐ _____

Data Format
☐ Excel ☑ PDF ☐ GIS/Key ☐ EQuIS ☐ Other

Data Package
☐ Tier II Checklist* ☐ Full Data Package* ☑ Phoenix Std ☐ Other

***MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.**

*** SURCHARGES MAY APPLY**

State where samples were collected: MA

*** SURCHARGE APPLIES**

Form PEL-126 Rev. 9/23

PHOENIX
Environmental Laboratories, Inc.

Sunday, February 02, 2025

Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Project ID: 2024-285
SDG ID: GCS49634
Sample ID#s: CS49634

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

ANALYTICAL REPORT

Lab Number:	L2501783
Client:	CMG Environmental, Inc. 67 Hall Road Sturbridge, MA 01566
ATTN:	Gary Magnuson
Phone:	(774) 241-0901
Project Name:	BEACON
Project Number:	2024-285
Report Date:	02/06/25

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2501783-01	MW-1	WATER	WORCESTER, MA	01/10/25 09:30	01/13/25
L2501783-02	MW-4	WATER	WORCESTER, MA	01/10/25 10:40	01/13/25
L2501783-03	MW-6	WATER	WORCESTER, MA	01/10/25 13:45	01/13/25
L2501783-04	FB-BEACON	WATER	WORCESTER, MA	01/10/25 09:00	01/13/25

Project Name:	BEACON	**Lab Number:**	L2501783
Project Number:	2024-285	**Report Date:**	02/06/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	BEACON	**Lab Number:**	L2501783
Project Number:	2024-285	**Report Date:**	02/06/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

L2501783-01, -02, -03, -04, WG2020219-1, WG2020219-2, WG2020219-3, and WG2020219-4: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG2020219-2 LCS recovery associated with L2501783-01 through -04 is above the acceptance criteria for perfluorononanesulfonic acid (pfns) (155%) and perfluorodecanesulfonic acid (pfds) (168%); however, the associated samples are non-detect to the reporting limit for these target analytes. The results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Ashley Leitao Ashley Leitao

Title: Technical Director/Representative Date: 02/06/25

ORGANICS

SEMIVOLATILES

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-01
Client ID: MW-1
Sample Location: WORCESTER, MA

Date Collected: 01/10/25 09:30
Date Received: 01/13/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/16/25 15:03
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/15/25 16:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	18.4		ng/l	1.78	0.363	1
Perfluoropentanoic Acid (PFPeA)	26.8		ng/l	1.78	0.352	1
Perfluorobutanesulfonic Acid (PFBS)	5.53		ng/l	1.78	0.212	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.78	0.402	1
Perfluorohexanoic Acid (PFHxA)	31.4		ng/l	1.78	0.292	1
Perfluoropentanesulfonic Acid (PFPeS)	0.729	J	ng/l	1.78	0.218	1
Perfluoroheptanoic Acid (PFHpA)	13.7		ng/l	1.78	0.200	1
Perfluorohexanesulfonic Acid (PFHxS)	6.94		ng/l	1.78	0.334	1
Perfluorooctanoic Acid (PFOA)	31.0		ng/l	1.78	0.210	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	1.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.654	J	ng/l	1.78	0.612	1
Perfluorononanoic Acid (PFNA)	3.62		ng/l	1.78	0.277	1
Perfluorooctanesulfonic Acid (PFOS)	29.2		ng/l	1.78	0.448	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.270	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	1.08	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.78	0.996	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.576	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.231	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.871	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.516	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.715	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.331	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.291	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.220	1

Project Name: BEACON **Lab Number:** L2501783

Project Number: 2024-285 **Report Date:** 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-01 Date Collected: 01/10/25 09:30

Client ID: MW-1 Date Received: 01/13/25

Sample Location: WORCESTER, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	81		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	67		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**210**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	70		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	117		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	76		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**156**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	68		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**59**	Q	69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**56**	Q	62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	35		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**45**	Q	55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	12		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**46**	Q	48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	63		22-136

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-02
Client ID: MW-4
Sample Location: WORCESTER, MA

Date Collected: 01/10/25 10:40
Date Received: 01/13/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/16/25 15:36
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/15/25 16:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.25		ng/l	1.97	0.402	1
Perfluoropentanoic Acid (PFPeA)	9.08		ng/l	1.97	0.390	1
Perfluorobutanesulfonic Acid (PFBS)	4.12		ng/l	1.97	0.235	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.97	0.446	1
Perfluorohexanoic Acid (PFHxA)	8.99		ng/l	1.97	0.323	1
Perfluoropentanesulfonic Acid (PFPeS)	0.473	J	ng/l	1.97	0.242	1
Perfluoroheptanoic Acid (PFHpA)	5.83		ng/l	1.97	0.222	1
Perfluorohexanesulfonic Acid (PFHxS)	4.30		ng/l	1.97	0.371	1
Perfluorooctanoic Acid (PFOA)	20.0		ng/l	1.97	0.233	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.97	1.31	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.08	J	ng/l	1.97	0.678	1
Perfluorononanoic Acid (PFNA)	2.24		ng/l	1.97	0.308	1
Perfluorooctanesulfonic Acid (PFOS)	81.2		ng/l	1.97	0.497	1
Perfluorodecanoic Acid (PFDA)	0.864	JF	ng/l	1.97	0.300	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.97	1.20	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.97	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.639	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.256	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.97	0.966	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.97	0.572	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.793	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.367	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.323	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.244	1

Project Name: BEACON **Lab Number:** L2501783

Project Number: 2024-285 **Report Date:** 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-02 Date Collected: 01/10/25 10:40

Client ID: MW-4 Date Received: 01/13/25

Sample Location: WORCESTER, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	102		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	96		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	129		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**259**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	131		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**224**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	135		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	56		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	57		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	53		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		22-136

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-03
Client ID: MW-6
Sample Location: WORCESTER, MA

Date Collected: 01/10/25 13:45
Date Received: 01/13/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/16/25 16:10
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/15/25 16:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.78	J	ng/l	1.94	0.396	1
Perfluoropentanoic Acid (PFPeA)	3.67		ng/l	1.94	0.384	1
Perfluorobutanesulfonic Acid (PFBS)	1.40	J	ng/l	1.94	0.231	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.94	0.438	1
Perfluorohexanoic Acid (PFHxA)	3.45		ng/l	1.94	0.318	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.94	0.238	1
Perfluoroheptanoic Acid (PFHpA)	3.29		ng/l	1.94	0.218	1
Perfluorohexanesulfonic Acid (PFHxS)	2.04	F	ng/l	1.94	0.365	1
Perfluorooctanoic Acid (PFOA)	8.65		ng/l	1.94	0.229	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.94	1.29	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.94	0.667	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.94	0.303	1
Perfluorooctanesulfonic Acid (PFOS)	15.4		ng/l	1.94	0.489	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.94	0.295	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.94	1.18	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.94	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.94	0.628	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.94	0.252	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.94	0.950	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.94	0.562	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.94	0.780	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.94	0.361	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.94	0.317	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.94	0.240	1

Project Name: BEACON **Lab Number:** L2501783

Project Number: 2024-285 **Report Date:** 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-03 Date Collected: 01/10/25 13:45

Client ID: MW-6 Date Received: 01/13/25

Sample Location: WORCESTER, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	107		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	89		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	120		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**296**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	126		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	108		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**291**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**183**	Q	10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	57		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	72		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	73		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	69		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71		22-136

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-04
Client ID: FB-BEACON
Sample Location: WORCESTER, MA

Date Collected: 01/10/25 09:00
Date Received: 01/13/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/16/25 16:27
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/15/25 16:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.88	0.384	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.88	0.373	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.88	0.224	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.88	0.425	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.88	0.309	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.88	0.231	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.88	0.212	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.88	0.354	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.88	0.222	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.88	1.25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.88	0.647	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.88	0.294	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.88	0.474	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	0.286	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.88	1.14	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.88	1.05	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	0.610	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.88	0.245	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.88	0.922	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.88	0.546	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	0.756	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	0.350	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	0.308	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.88	0.233	1

Project Name: BEACON **Lab Number:** L2501783

Project Number: 2024-285 **Report Date:** 02/06/25

SAMPLE RESULTS

Lab ID: L2501783-04 Date Collected: 01/10/25 09:00

Client ID: FB-BEACON Date Received: 01/13/25

Sample Location: WORCESTER, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	118		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	136		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**175**	Q	70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**169**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	118		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	115		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**169**	Q	71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	115		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**168**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	118		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**164**	Q	10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	90		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	108		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	51		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	111		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	107		22-136

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/16/25 14:14
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/15/25 16:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG2020219-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	0.452
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	0.245
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	1.12
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/16/25 14:14
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 01/15/25 16:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG2020219-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	129		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	152		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**206**	Q	70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**202**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**130**	Q	57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	128		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**196**	Q	71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	126		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**206**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	128		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	129		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**127**	Q	62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**211**	Q	10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	92		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	114		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	110		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	109		22-136

Lab Control Sample Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG2020219-2								
Perfluorobutanoic Acid (PFBA)	102		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	103		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	104		-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	116		-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	106		-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	99		-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	104		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	111		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	106		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	114		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	158		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	103		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	119		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	96		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	110		-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	**155**	Q	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	119		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	110		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	**168**	Q	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	110		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	99		-		45-170	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG2020219-2								
Perfluorododecanoic Acid (PFDoA)	111		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	135		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	107		-		59-182	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**151**	Q			58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**171**	Q			62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**221**	Q			70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**238**	Q			12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**149**	Q			57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**146**	Q			60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**215**	Q			71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**147**	Q			62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**236**	Q			14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**150**	Q			59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**140**	Q			69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**152**	Q			62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**237**	Q			10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	107				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	125				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62				5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**133**	Q			27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**132**	Q			48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	136				22-136

Matrix Spike Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2020219-3 QC Sample: L2501783-01 Client ID: MW-1												
Perfluorobutanoic Acid (PFBA)	18.4	40.6	61.7	107		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	26.8	40.6	70.8	108		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	5.53	36.1	44.7	109		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	38.1	44.2	116		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	31.4	40.6	74.7	107		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	0.729J	38.3	38.2	98		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	13.7	40.6	58.2	109		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	6.94	37.2	51.2	119		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	31.0	40.6	74.8	108		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	38.7	44.8	116		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.654J	38.8	68.3	174		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	3.62	40.6	48.6	111		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	29.2	37.7	67.9	103		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	40.6	41.0	101		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	39	51.8	133		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	39.1	55.6	142		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	40.6	58.1	143		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	40.6	46.7	115		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	39.3	52.4	133		-	-		38-156	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2020219-3 QC Sample: L2501783-01 Client ID: MW-1												
Perfluorooctanesulfonamide (FOSA)	ND	40.6	46.3F	114		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	40.6	50.0	123		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	40.6	45.8	113		-	-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	40.6	50.8	125		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	40.6	45.3	111		-	-		59-182	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	92				10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**213**	Q			12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**155**	Q			14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	49				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	38				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**54**	Q			55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	67				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69				22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	84				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	23				5-112

Matrix Spike Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2020219-3 QC Sample: L2501783-01 Client ID: MW-1

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	70				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	72				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108				70-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2020219-4 QC Sample: L2501783-02 Client ID: MW-4						
Perfluorobutanoic Acid (PFBA)	4.25	4.23	ng/l	0		30
Perfluoropentanoic Acid (PFPeA)	9.08	8.58	ng/l	6		30
Perfluorobutanesulfonic Acid (PFBS)	4.12	4.00	ng/l	3		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	8.99	8.22	ng/l	9		30
Perfluoropentanesulfonic Acid (PFPeS)	0.473J	0.564J	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	5.83	5.67	ng/l	3		30
Perfluorohexanesulfonic Acid (PFHxS)	4.30	4.18	ng/l	3		30
Perfluorooctanoic Acid (PFOA)	20.0	18.3	ng/l	9		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	1.08J	0.935J	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	2.24	1.81J	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	81.2	73.9	ng/l	9		30
Perfluorodecanoic Acid (PFDA)	0.864JF	0.535JF	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2020219-4 QC Sample: L2501783-02 Client ID: MW-4						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	102		108		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	96		104		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**129**		**151**	Q	70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**259**	Q	**290**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		92		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		100		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**131**		**147**	Q	71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		105		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**224**	Q	**260**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		91		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		87		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		80		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	135		146		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		55		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	56		63		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		22		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	57		63		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	53		62		48-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2020219-4 QC Sample: L2501783-02 Client ID: MW-4

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		70		22-136

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2501783-01A	Plastic 250ml unpreserved	A	NA		4.8	Y	Absent		A2-537-ISOTOPE(28)
L2501783-01B	Plastic 250ml unpreserved	A	NA		4.8	Y	Absent		A2-537-ISOTOPE(28)
L2501783-02A	Plastic 250ml unpreserved	A	NA		4.8	Y	Absent		A2-537-ISOTOPE(28)
L2501783-02B	Plastic 250ml unpreserved	A	NA		4.8	Y	Absent		A2-537-ISOTOPE(28)
L2501783-03A	Plastic 250ml unpreserved	A	NA		4.8	Y	Absent		A2-537-ISOTOPE(28)
L2501783-03B	Plastic 250ml unpreserved	A	NA		4.8	Y	Absent		A2-537-ISOTOPE(28)
L2501783-04A	Plastic 250ml unpreserved	A	NA		4.8	Y	Absent		A2-537-ISOTOPE(28)

*Values in parentheses indicate holding time in days

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2501783
Report Date: 02/06/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	BEACON	**Lab Number:**	L2501783
Project Number:	2024-285	**Report Date:**	02/06/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	BEACON	**Lab Number:**	L2501783
Project Number:	2024-285	**Report Date:**	02/06/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	BEACON	**Lab Number:**	L2501783
Project Number:	2024-285	**Report Date:**	02/06/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2501783
Report Date: 02/06/25

REFERENCES

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 1/13/25

ALPHA Job #: L2501783

Client Information
Client: CMG Environmental
Address: 67 Hall Road, Sturbridge, MA 01566
Phone: 774-241-0901
Email: gmagnuson@cmgenv.com

Project Information
Project Name: Beacon
Project Location: Worcester, MA
Project #: 2024-285
Project Manager: Gary Magnuson
ALPHA Quote #:

Report Information - Data Deliverables
☐ ADEx ☑ EMAIL

Billing Information
☑ Same as Client info PO #: Beacon

Regulatory Requirements & Project Information Requirements
☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time
☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Additional Project Information:

ANALYSIS
VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
PFAS 537.1

SAMPLE INFO
Filtration ☐ Field ☐ Lab to do
Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS 537.1	Sample Comments	TOTAL # BOTTLES
01783-01	MW-1	1-10-25	9:30	GW	SB	X		2
-02	MW-4		10:40			X		2
-03	MW-6		13:45			X		2
-04	FB-Beacon		9:00				Hold "FB" only run if detection in primary sample(s)	2

Container Type: P
Preservative: A

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	1-10-25		1/13-25 10:[illegible]
	1/13-25 1:40		1-13-25 16:[illegible]
	1-13-25 1805		1/13/25 18:05
	1/13/25 19:30	AGL	1/13/25 1933

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2503679
Client:	CMG Environmental, Inc. 67 Hall Road Sturbridge, MA 01566
ATTN:	Gary Magnuson
Phone:	(774) 241-0901
Project Name:	BEACON
Project Number:	2024-285
Report Date:	02/04/25

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2503679
Report Date: 02/04/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2503679-01	MW-7	WATER	WORCESTER, MA	01/22/25 12:30	01/22/25

Project Name:	BEACON	**Lab Number:**	L2503679
Project Number:	2024-285	**Report Date:**	02/04/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2503679
Report Date: 02/04/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2503679-01: The collection date and time on the chain of custody was 22-JAN-25 12:30; however, the collection date/time on the container label was 10-JAN-25 00:00. At the client's request, the collection date/time is reported as 22-JAN-25 12:30.

Perfluorinated Alkyl Acids by Isotope Dilution

L2503679-01 and WG2026249-1: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Ashley Leitao Ashley Leitao

Title: Technical Director/Representative Date: 02/04/25

ORGANICS

SEMIVOLATILES

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2503679
Report Date: 02/04/25

SAMPLE RESULTS

Lab ID: L2503679-01
Client ID: MW-7
Sample Location: WORCESTER, MA

Date Collected: 01/22/25 12:30
Date Received: 01/22/25
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 02/04/25 12:23
Analyst: PS

Extraction Method: ALPHA 23528
Extraction Date: 02/03/25 17:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.03	J	ng/l	2.13	0.434	1
Perfluoropentanoic Acid (PFPeA)	0.707	J	ng/l	2.13	0.421	1
Perfluorobutanesulfonic Acid (PFBS)	1.10	J	ng/l	2.13	0.253	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.13	0.481	1
Perfluorohexanoic Acid (PFHxA)	1.14	J	ng/l	2.13	0.349	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.13	0.261	1
Perfluoroheptanoic Acid (PFHpA)	1.26	J	ng/l	2.13	0.240	1
Perfluorohexanesulfonic Acid (PFHxS)	1.27	J	ng/l	2.13	0.400	1
Perfluorooctanoic Acid (PFOA)	4.03		ng/l	2.13	0.251	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.58	J	ng/l	2.13	1.42	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.13	0.732	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.13	0.332	1
Perfluorooctanesulfonic Acid (PFOS)	7.98		ng/l	2.13	0.536	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.13	0.324	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.13	1.29	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.13	1.19	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.13	0.690	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.13	0.277	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.13	1.04	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.13	0.617	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.13	0.856	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.13	0.396	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.13	0.348	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.13	0.264	1

Project Name: BEACON **Lab Number:** L2503679

Project Number: 2024-285 **Report Date:** 02/04/25

SAMPLE RESULTS

Lab ID: L2503679-01 Date Collected: 01/22/25 12:30

Client ID: MW-7 Date Received: 01/22/25

Sample Location: WORCESTER, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**167**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	133		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	65		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	64		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	18		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	46		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	57		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		22-136

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2503679
Report Date: 02/04/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 02/04/25 08:47
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 02/03/25 17:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01 Batch: WG2026249-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	0.452
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	0.245
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	1.12
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2503679
Report Date: 02/04/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 02/04/25 08:47
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 02/03/25 17:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01 Batch: WG2026249-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**136**	Q	58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	141		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	126		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	88		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	126		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	124		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	133		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	129		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	118		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**135**	Q	69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**128**	Q	62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	97		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**119**	Q	24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	131		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	61		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	130		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	128		22-136

Lab Control Sample Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2503679
Report Date: 02/04/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 Batch: WG2026249-2								
Perfluorobutanoic Acid (PFBA)	76		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	74		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	74		-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	87		-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	76		-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	71		-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	76		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	79		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	75		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	136		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	72		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	84		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	74		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	83		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	75		-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	80		-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	79		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	74		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	80		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	78		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	81		-		45-170	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2503679
Report Date: 02/04/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 Batch: WG2026249-2								
Perfluorododecanoic Acid (PFDoA)	80		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	96		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	82		-		59-182	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	110				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102				70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	74				12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	107				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	106				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	107				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	112				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	110				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	109				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	116				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	68				5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	114				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	109				22-136

Matrix Spike Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2503679
Report Date: 02/04/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2026249-3 WG2026249-4 QC Sample: L2504081-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	1.36J	41.8	31.1	71		29.7	73		67-148	5		30
Perfluoropentanoic Acid (PFPeA)	0.756J	41.8	31.7	74		29.7	74		63-161	7		30
Perfluorobutanesulfonic Acid (PFBS)	1.25J	37.1	29.1	75		27.7	76		65-157	5		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	39.2	36.1	92		31.2	85		37-219	15		30
Perfluorohexanoic Acid (PFHxA)	1.08J	41.8	32.5	75		30.6	76		69-168	6		30
Perfluoropentanesulfonic Acid (PFPeS)	0.616J	39.4	26.4	66		26.8	71		52-156	2		30
Perfluoroheptanoic Acid (PFHpA)	1.06J	41.8	32.9	76		31.2	77		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	4.87	38.2	37.2	85		34.7	84		69-177	7		30
Perfluorooctanoic Acid (PFOA)	2.56	41.8	37.6	84		31.9	75		63-159	16		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.92J	39.8	36.1	86		33.9	86		49-187	6		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	39.9	32.1	80		29.8	80		61-179	7		30
Perfluorononanoic Acid (PFNA)	ND	41.8	35.6	85		33.9	87		68-171	5		30
Perfluorooctanesulfonic Acid (PFOS)	0.603J	38.8	31.5	80		31.1	84		52-151	1		30
Perfluorodecanoic Acid (PFDA)	ND	41.8	32.8	78		33.9	87		63-171	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	40.1	33.6	84		30.1	80		56-173	11		30
Perfluorononanesulfonic Acid (PFNS)	ND	40.2	31.0	77		29.2	78		48-150	6		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	41.8	34.1	82		33.2	85		60-166	3		30
Perfluoroundecanoic Acid (PFUnA)	ND	41.8	30.6	73		29.8	76		60-153	3		30
Perfluorodecanesulfonic Acid (PFDS)	ND	40.4	31.6	78		30.8	82		38-156	3		30

Matrix Spike Analysis
Batch Quality Control

Project Name: BEACON
Project Number: 2024-285
Lab Number: L2503679
Report Date: 02/04/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2026249-3 WG2026249-4 QC Sample: L2504081-01 Client ID: MS Sample												
Perfluorooctanesulfonamide (FOSA)	ND	41.8	33.2	79		32.7	84		46-170	2		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	41.8	35.8	86		40.4	104		45-170	12		30
Perfluorododecanoic Acid (PFDoA)	ND	41.8	32.4	78		30.5	78		67-153	6		30
Perfluorotridecanoic Acid (PFTrDA)	ND	41.8	40.2	96		39.2	101		48-158	3		30
Perfluorotetradecanoic Acid (PFTA)	ND	41.8	30.8	74		30.0	77		59-182	3		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96		110		10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**186**	Q	**208**	Q	12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**180**	Q	**203**	Q	14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		77		27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	99		115		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		94		55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		91		62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	82		85		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		95		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		103		71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		87		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	43		42		22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		110		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		118		62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	34		38		5-112

Matrix Spike Analysis

Batch Quality Control

Project Name: BEACON

Project Number: 2024-285

Lab Number: L2503679

Report Date: 02/04/25

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2026249-3 WG2026249-4 QC Sample: L2504081-01 Client ID: MS Sample

Surrogate (Extracted Internal Standard)	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		99		69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		101		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		92		59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		91		70-131

Project Name: BEACON
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Lab Number: L2503679
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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2503679-01A	Plastic 250ml unpreserved	A	NA		3.1	Y	Absent		A2-537-ISOTOPE(28)
L2503679-01B	Plastic 250ml unpreserved	A	NA		3.1	Y	Absent		A2-537-ISOTOPE(28)

*Values in parentheses indicate holding time in days

Project Name: BEACON
Project Number: 2024-285

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Report Date: 02/04/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: BEACON
Project Number: 2024-285

Lab Number: L2503679
Report Date: 02/04/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	BEACON	**Lab Number:**	L2503679
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GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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REFERENCES

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

CHAIN OF CUSTODY

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Date Rec'd in Lab: 1/22/25

ALPHA Job #: L2503679

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: CMC ENV

Address: 67 Hill Rd
Sturbridge, MA 01566

Phone:

Email: GMcKinnon@CMCENV.COM

Project Information

Project Name: BEACON

Project Location: Worcester, MA

Project #: 2024.285

Project Manager: G. McKinnon

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☒ Same as Client info PO #: BEACON

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
PFAS 537.1

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS 537.1	Sample Comments	TOTAL # BOTTLES
03679-01	MW-7	1-22-25	12:30	GW	CM	X		2

Container Type	P
Preservative	None

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	1-22-25 1500		1-22-25 1420
AAL	1/22/25 19:30	AAL	1/22/25 15:00
AAL	1/22/25 21:00		1/22/25 15:30
			1/22/25 21:00

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

February 02, 2025

SDG I.D.: GCS49634

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

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Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

February 02, 2025

SDG I.D.: GCS49634

Project ID: 2024-285

Client Id	Lab Id	Matrix	Col Date
MW-7	CS49634	GROUND WATER	01/22/25 12:30

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

Analysis Report

February 02, 2025

FOR: Attn: Nancy Schwenker
CMG Environmental, Inc.
67 Hall Rd
Sturbridge, MA 01566

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:	GM	01/22/25	12:30
Location Code:	CMGENV	Received by:	SR1	01/22/25	15:07
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	BEACON				

Laboratory Data

SDG ID: GCS49634
Phoenix ID: CS49634

Project ID: 2024-285
Client ID: MW-7

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver (Dissolved)	< 0.001	0.001	mg/L	1	01/23/25	TH	SW6010D
Arsenic (Dissolved)	< 0.004	0.004	mg/L	1	01/23/25	TH	SW6010D
Barium (Dissolved)	0.018	0.002	mg/L	1	01/23/25	TH	SW6010D
Cadmium (Dissolved)	< 0.001	0.001	mg/L	1	01/23/25	TH	SW6010D
Chromium (Dissolved)	< 0.001	0.001	mg/L	1	01/23/25	TH	SW6010D
Mercury (Dissolved)	< 0.0002	0.0002	mg/L	1	01/27/25	ZT	SW7470A
Lead (Dissolved)	< 0.002	0.002	mg/L	1	01/23/25	TH	SW6010D
Selenium (Dissolved)	< 0.011	0.011	mg/L	1	01/23/25	TH	SW6010D
Mercury Dissolved Digestion	Completed				01/23/25	AK/AK	SW7470A
EPH Extraction	Completed				01/24/25	CV/CV	SW3510C
Semi-Volatile Extraction	Completed				01/23/25	Z/K	SW3520C
Dissolved Metals Preparation	Completed				01/22/25	AG	SW3005A
MA Petroleum Hydrocarbon (EPH)	Completed				01/22/25		MADEP EPH-19
	Completed				01/23/25	V	MA VPH 2/20182.1, 201
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,1,1-Trichloroethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	01/23/25	MH	SW8260D
1,1,2-Trichloroethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,1-Dichloroethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,1-Dichloroethene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,1-Dichloropropene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,2,3-Trichloropropane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-7

Phoenix I.D.: CS49634

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,2-Dibromoethane	ND	0.25	ug/L	1	01/23/25	MH	SW8260D
1,2-Dichlorobenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,2-Dichloroethane	ND	0.60	ug/L	1	01/23/25	MH	SW8260D
1,2-Dichloropropane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,3-Dichlorobenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,3-Dichloropropane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
1,4-Dichlorobenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
2,2-Dichloropropane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
2-Chlorotoluene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
2-Hexanone	ND	5.0	ug/L	1	01/23/25	MH	SW8260D
2-Isopropyltoluene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
4-Chlorotoluene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
4-Methyl-2-pentanone	ND	5.0	ug/L	1	01/23/25	MH	SW8260D
Acetone	ND	25	ug/L	1	01/23/25	MH	SW8260D
Acrylonitrile	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Benzene	ND	0.70	ug/L	1	01/23/25	MH	SW8260D
Bromobenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Bromochloromethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Bromodichloromethane	ND	0.50	ug/L	1	01/23/25	MH	SW8260D
Bromoform	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Bromomethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Carbon Disulfide	ND	5.0	ug/L	1	01/23/25	MH	SW8260D
Carbon tetrachloride	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Chlorobenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Chloroethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Chloroform	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Chloromethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	01/23/25	MH	SW8260D
Dibromochloromethane	ND	0.50	ug/L	1	01/23/25	MH	SW8260D
Dibromomethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Dichlorodifluoromethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Ethylbenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Hexachlorobutadiene	ND	0.40	ug/L	1	01/23/25	MH	SW8260D
Isopropylbenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
m&p-Xylene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Methyl ethyl ketone	ND	5.0	ug/L	1	01/23/25	MH	SW8260D
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Methylene chloride	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Naphthalene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
n-Butylbenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
n-Propylbenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
o-Xylene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
p-Isopropyltoluene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
sec-Butylbenzene	2.6	1.0	ug/L	1	01/23/25	MH	SW8260D
Styrene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
tert-Butylbenzene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D

Project ID: 2024-285
Client ID: MW-7

Phoenix I.D.: CS49634

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Tetrachloroethene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	01/23/25	MH	SW8260D
Toluene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Total Xylenes	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	01/23/25	MH	SW8260D
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	01/23/25	MH	SW8260D
Trichloroethene	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Trichlorofluoromethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Trichlorotrifluoroethane	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
Vinyl chloride	ND	1.0	ug/L	1	01/23/25	MH	SW8260D
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	107		%	1	01/23/25	MH	70 - 130 %
% Bromofluorobenzene	88		%	1	01/23/25	MH	70 - 130 %
% Dibromofluoromethane	102		%	1	01/23/25	MH	70 - 130 %
% Toluene-d8	106		%	1	01/23/25	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	40	ug/L	1	01/23/25	MH	SW8260D (OXY)
Diethyl ether	ND	1.0	ug/L	1	01/23/25	MH	SW8260D (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	01/23/25	MH	SW8260D (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	01/23/25	MH	SW8260D (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	01/23/25	MH	SW8260D (OXY)
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.57	ug/L	1	01/24/25	MR	SW8270E (SIM)
Acenaphthene	ND	0.57	ug/L	1	01/24/25	MR	SW8270E (SIM)
Acenaphthylene	0.12	0.11	ug/L	1	01/24/25	MR	SW8270E (SIM)
Anthracene	ND	0.11	ug/L	1	01/24/25	MR	SW8270E (SIM)
Benz(a)anthracene	ND	0.11	ug/L	1	01/24/25	MR	SW8270E (SIM)
Benzo(a)pyrene	ND	0.20	ug/L	1	01/24/25	MR	SW8270E (SIM)
Benzo(b)fluoranthene	ND	0.11	ug/L	1	01/24/25	MR	SW8270E (SIM)
Benzo(ghi)perylene	0.04	0.02	ug/L	1	01/24/25	MR	SW8270E (SIM)
Benzo(k)fluoranthene	ND	0.11	ug/L	1	01/24/25	MR	SW8270E (SIM)
Chrysene	0.07	0.06	ug/L	1	01/24/25	MR	SW8270E (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	01/24/25	MR	SW8270E (SIM)
Fluoranthene	ND	0.57	ug/L	1	01/24/25	MR	SW8270E (SIM)
Fluorene	0.47	0.11	ug/L	1	01/24/25	MR	SW8270E (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.11	ug/L	1	01/24/25	MR	SW8270E (SIM)
Naphthalene	ND	0.57	ug/L	1	01/24/25	MR	SW8270E (SIM)
Phenanthrene	0.69	0.57	ug/L	1	01/24/25	MR	SW8270E (SIM)
Pyrene	0.19	0.08	ug/L	1	01/24/25	MR	SW8270E (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	62		%	1	01/24/25	MR	40 - 140 %
% Nitrobenzene-d5	84		%	1	01/24/25	MR	40 - 140 %
% Terphenyl-d14	48		%	1	01/24/25	MR	40 - 140 %
MA EPH Aliphatic/Aromatic Ranges							
C11-C22 Aromatic Hydrocarbons 1,2	ND	200	ug/L	1	01/27/25	AW	MAEPH 5/2019
C11-C22 Aromatic Hydrocarbons Un	ND	200	ug/L	1	01/27/25	AW	MAEPH 5/2019

Ver 1

Project ID: 2024-285
Client ID: MW-7

Phoenix I.D.: CS49634

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
C19-C36 Aliphatic Hydrocarbons 1*	ND	200	ug/L	1	01/27/25	AW	MAEPH 5/2019
C9-C18 Aliphatic Hydrocarbons 1*	ND	200	ug/L	1	01/27/25	AW	MAEPH 5/2019
QA/QC Surrogates							
% 1-chlorooctadecane (aliphatic)	48		%	1	01/27/25	AW	40 - 140 %
% 2-Bromonaphthalene (Fractionation)	107		%	1	01/27/25	AW	40 - 140 %
% 2-Fluorobiphenyl (Fractionation)	106		%	1	01/27/25	AW	40 - 140 %
% o-terphenyl (aromatic)	90		%	1	01/27/25	AW	40 - 140 %

MA Volatile Petroleum Hydrocarbons (VPH)

Unadjusted C5-C8 Aliphatics (*1)	ND	100	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
Unadjusted C9-C12 Aliphatics (*1)	ND	100	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
C9-C12 Aliphatic Hydrocarbons *1,3	ND	100	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
C9-C10 Aromatic Hydrocarbons *1	ND	100	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
Benzene	ND	1.0	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
Ethyl Benzene	ND	1.0	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
MTBE	ND	1.0	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
Naphthalene	ND	5.0	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
Toluene	ND	1.0	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
m,p-Xylenes	ND	2.0	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
o-Xylene	ND	1.0	ug/L	1	01/23/25	V	MA VPH 2/20182.1, 201
QA/QC Surrogates							
% 2,5-Dibromotoluene (FID)	106		%	1	01/23/25	V	70 - 130 %
% 2,5-Dibromotoluene (PID)	101		%	1	01/23/25	V	70 - 130 %

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

MAEPH:
1* Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
2* C11-C12 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes eluting in that range.

VPH:
*1 Range data exclude conc.s of any surrogate(s) and/or Int. std.s eluting in that range.
*2 C5-C8 and C9-C12 Aliphatic exclude the conc. of Target Analytes in that range.
*3 C9-C12 Aliphatic also exclude C9-C10 Aromatic Hydrocarbon

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Dissolved analysis requires filtration. Samples submitted from a preserved container are assumed to be field filtered.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

February 02, 2025

Reviewed and Released by: Phyllis Shiller, Laboratory Director

Ver 1

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

QA/QC Report

February 02, 2025

QA/QC Data

SDG I.D.: GCS49634

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 767858 (mg/L), QC Sample No: CS48654 (CS49634)													
Mercury (Dissolved)	BRL	0.0002	<0.0002	<0.0002	NC	112			106			80 - 120	20
Comment:													
Additional Mercury Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range is 75-125% for aqueous and 80-120% for soils.													
QA/QC Batch 767721 (mg/L), QC Sample No: CS49634 (CS49634)													
ICP Metals - Dissolved													
Arsenic	BRL	0.004	<0.004	<0.004	NC	82.6	88.2	6.6	83.2			80 - 120	20
Barium	BRL	0.002	0.018	0.018	0	86.8	92.5	6.4	85.1			80 - 120	20
Cadmium	BRL	0.001	<0.001	<0.001	NC	83.1	88.5	6.3	81.9			80 - 120	20
Chromium	BRL	0.001	<0.001	<0.001	NC	82.9	88.2	6.2	81.9			80 - 120	20
Lead	BRL	0.002	<0.002	<0.002	NC	82.7	88.4	6.7	82.0			80 - 120	20
Selenium	BRL	0.011	<0.011	<0.011	NC	80.8	86.0	6.2	80.6			80 - 120	20
Silver	BRL	0.001	<0.001	<0.001	NC	87.4	92.4	5.6	86.3			80 - 120	20
Comment:													
Additional Criteria: LCS acceptance range is 80-120% for aqueous and for soils the acceptance range is set by vendor limits. MS acceptance range 75-125%.													

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102

QA/QC Report

February 02, 2025

QA/QC Data

SDG I.D.: GCS49634

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 768033 (ug/L), QC Sample No: CS48654 (CS49634)										
MAEPH - Ground Water										
C9-C18 Aliphatic Hydrocarbons 1*	ND	100	69	72	4.3				40 - 140	25
C19-C36 Aliphatic Hydrocarbons 1*	ND	100	76	78	2.6				40 - 140	25
C11-C22 Aromatic Hydrocarbons 1	ND	100	87	93	6.7				40 - 140	25
C11-C22 Aromatic Hydrocarbons U	ND	100							40 - 140	25
C9 - Nonane	ND	10	45	47	4.3				40 - 140	25
C-10 Decane	ND	10	59	60	1.7				40 - 140	25
C12 - Dodecane	ND	10	68	70	2.9				40 - 140	25
C14 - Tetradecane	ND	10	74	77	4.0				40 - 140	25
C16 - Hexadecane	ND	10	79	82	3.7				40 - 140	25
C18 - Octadecane	ND	10	90	95	5.4				40 - 140	25
C19 - Nonadecane	ND	10	86	91	5.6				40 - 140	25
C20 - Eicosane	ND	10	87	91	4.5				40 - 140	25
C22 - Docosane	ND	10	75	79	5.2				40 - 140	25
C24 - Tetracosane	ND	10	85	89	4.6				40 - 140	25
C26 - Hexacosane	ND	10	83	87	4.7				40 - 140	25
C28 - Octacosane	ND	10	79	81	2.5				40 - 140	25
C30 - Tricotane	ND	10	77	79	2.6				40 - 140	25
C36 - Hexatriacontane	ND	10	32	27	16.9				40 - 140	25
% 1-chlorooctadecane (aliphatic)	63	%	78	81	3.8				40 - 140	25
% o-terphenyl (aromatic)	75	%	90	96	6.5				40 - 140	25
% 2-Fluorobiphenyl (Fractionation)	110	%	122	121	0.8				40 - 140	25
% 2-Bromonaphthalene (Fractionati	110	%	120	121	0.8				40 - 140	25
% 2-Methylnaphthalene BT		%	0	0	NC				0 - 5	
% Naphthalene BT		%	0	0	NC				0 - 5	
Comment:										
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%										
QA/QC Batch 767893 (ug/L), QC Sample No: CS48194 (CS49634)										
Semivolatiles by SIM, PAH - Ground Water										
2-Methylnaphthalene	ND	0.50	67	79	16.4				40 - 140	20
Acenaphthene	ND	0.50	56	62	10.2				40 - 140	20
Acenaphthylene	ND	0.10	56	61	8.5				40 - 140	20
Anthracene	ND	0.10	65	73	11.6				40 - 140	20
Benz(a)anthracene	ND	0.02	67	73	8.6				40 - 140	20
Benzo(a)pyrene	ND	0.02	65	70	7.4				40 - 140	20
Benzo(b)fluoranthene	ND	0.02	54	58	7.1				40 - 140	20
Benzo(ghi)perylene	ND	0.02	63	69	9.1				40 - 140	20
Benzo(k)fluoranthene	ND	0.02	53	57	7.3				40 - 140	20
Chrysene	ND	0.02	56	63	11.8				40 - 140	20
Dibenz(a,h)anthracene	ND	0.02	67	73	8.6				40 - 140	20
Fluoranthene	ND	0.50	67	74	9.9				40 - 140	20

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Fluorene	ND	0.10	60	67	11.0				40 - 140	20	
Indeno(1,2,3-cd)pyrene	ND	0.02	66	72	8.7				40 - 140	20	
Naphthalene	ND	0.50	68	74	8.5				40 - 140	20	
Phenanthrene	ND	0.06	57	62	8.4				40 - 140	20	
Pyrene	ND	0.07	66	73	10.1				40 - 140	20	
% 2-Fluorobiphenyl	79	%	61	66	7.9				40 - 140	20	
% Nitrobenzene-d5	79	%	68	75	9.8				40 - 140	20	
% Terphenyl-d14	93	%	81	89	9.4				40 - 140	20	

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 768041 (ug/L), QC Sample No: CS50027 (CS49634)

Volatiles - Ground Water

1,1,1,2-Tetrachloroethane	ND	1.0	112	112	0.0	111	116	4.4	70 - 130	20	
1,1,1-Trichloroethane	ND	1.0	113	112	0.9	99	105	5.9	70 - 130	20	
1,1,2,2-Tetrachloroethane	ND	0.50	101	102	1.0	105	112	6.5	70 - 130	20	
1,1,2-Trichloroethane	ND	1.0	100	100	0.0	100	105	4.9	70 - 130	20	
1,1-Dichloroethane	ND	1.0	111	117	5.3	107	109	1.9	70 - 130	20	
1,1-Dichloroethene	ND	1.0	108	107	0.9	98	104	5.9	70 - 130	20	
1,1-Dichloropropene	ND	1.0	106	106	0.0	109	114	4.5	70 - 130	20	
1,2,3-Trichlorobenzene	ND	1.0	100	102	2.0	102	109	6.6	70 - 130	20	
1,2,3-Trichloropropane	ND	1.0	96	98	2.1	99	105	5.9	70 - 130	20	
1,2,4-Trichlorobenzene	ND	1.0	99	101	2.0	102	107	4.8	70 - 130	20	
1,2,4-Trimethylbenzene	ND	1.0	109	109	0.0	107	110	2.8	70 - 130	20	
1,2-Dibromo-3-chloropropane	ND	1.0	100	105	4.9	105	113	7.3	70 - 130	20	
1,2-Dibromoethane	ND	1.0	101	99	2.0	104	110	5.6	70 - 130	20	
1,2-Dichlorobenzene	ND	1.0	102	102	0.0	101	105	3.9	70 - 130	20	
1,2-Dichloroethane	ND	1.0	102	101	1.0	97	100	3.0	70 - 130	20	
1,2-Dichloropropane	ND	1.0	106	106	0.0	111	114	2.7	70 - 130	20	
1,3,5-Trimethylbenzene	ND	1.0	107	108	0.9	107	111	3.7	70 - 130	20	
1,3-Dichlorobenzene	ND	1.0	103	102	1.0	104	107	2.8	70 - 130	20	
1,3-Dichloropropane	ND	1.0	103	102	1.0	105	111	5.6	70 - 130	20	
1,4-Dichlorobenzene	ND	1.0	103	102	1.0	102	107	4.8	70 - 130	20	
1,4-dioxane	ND	100	127	109	15.3	121	141	15.3	40 - 160	20	
2,2-Dichloropropane	ND	1.0	112	115	2.6	90	96	6.5	70 - 130	20	
2-Chlorotoluene	ND	1.0	105	106	0.9	110	116	5.3	70 - 130	20	
2-Hexanone	ND	5.0	91	97	6.4	114	119	4.3	40 - 160	20	
2-Isopropyltoluene	ND	1.0	108	108	0.0	105	109	3.7	70 - 130	20	
4-Chlorotoluene	ND	1.0	103	105	1.9	109	115	5.4	70 - 130	20	
4-Methyl-2-pentanone	ND	5.0	96	101	5.1	110	116	5.3	40 - 160	20	
Acetone	ND	5.0	98	104	5.9	81	104	24.9	40 - 160	20	r
Acrylonitrile	ND	5.0	104	111	6.5	105	111	5.6	70 - 130	20	
Benzene	ND	0.70	106	106	0.0	105	108	2.8	70 - 130	20	
Bromobenzene	ND	1.0	100	100	0.0	103	109	5.7	70 - 130	20	
Bromochloromethane	ND	1.0	109	107	1.9	99	106	6.8	70 - 130	20	
Bromodichloromethane	ND	0.50	111	112	0.9	104	112	7.4	70 - 130	20	
Bromoform	ND	1.0	110	110	0.0	104	116	10.9	70 - 130	20	
Bromomethane	ND	1.0	117	119	1.7	77	94	19.9	40 - 160	20	
Carbon Disulfide	ND	1.0	114	113	0.9	100	106	5.8	70 - 130	20	
Carbon tetrachloride	ND	1.0	124	127	2.4	109	116	6.2	70 - 130	20	
Chlorobenzene	ND	1.0	105	101	3.9	104	109	4.7	70 - 130	20	

QA/QC Data

SDG I.D.: GCS49634

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Chloroethane	ND	1.0	117	121	3.4	105	112	6.5	70 - 130	20
Chloroform	ND	1.0	112	111	0.9	98	106	7.8	70 - 130	20
Chloromethane	ND	1.0	127	131	3.1	109	122	11.3	40 - 160	20
cis-1,2-Dichloroethene	ND	1.0	111	110	0.9	105	111	5.6	70 - 130	20
cis-1,3-Dichloropropene	ND	0.40	107	106	0.9	104	111	6.5	70 - 130	20
Dibromochloromethane	ND	0.50	113	111	1.8	111	121	8.6	70 - 130	20
Dibromomethane	ND	1.0	100	99	1.0	96	100	4.1	70 - 130	20
Dichlorodifluoromethane	ND	1.0	100	101	1.0	81	84	3.6	40 - 160	20
Di-isopropyl ether	ND	1.0	118	118	0.0	109	117	7.1	70 - 130	20
Ethyl ether	ND	1.0	111	113	1.8	104	113	8.3	70 - 130	20
Ethyl tert-butyl ether	ND	1.0	113	115	1.8	106	113	6.4	70 - 130	20
Ethylbenzene	ND	1.0	106	106	0.0	111	116	4.4	70 - 130	20
Hexachlorobutadiene	ND	0.40	94	99	5.2	99	105	5.9	70 - 130	20
Isopropylbenzene	ND	1.0	106	108	1.9	115	122	5.9	70 - 130	20
m&p-Xylene	ND	1.0	107	106	0.9	108	113	4.5	70 - 130	20
Methyl ethyl ketone	ND	5.0	101	108	6.7	111	113	1.8	40 - 160	20
Methyl t-butyl ether (MTBE)	ND	1.0	106	108	1.9	94	100	6.2	70 - 130	20
Methylene chloride	ND	1.0	113	112	0.9	95	102	7.1	70 - 130	20
Naphthalene	ND	1.0	106	110	3.7	109	115	5.4	70 - 130	20
n-Butylbenzene	ND	1.0	106	106	0.0	103	106	2.9	70 - 130	20
n-Propylbenzene	ND	1.0	105	107	1.9	111	117	5.3	70 - 130	20
o-Xylene	ND	1.0	106	105	0.9	109	115	5.4	70 - 130	20
p-Isopropyltoluene	ND	1.0	107	108	0.9	105	110	4.7	70 - 130	20
sec-Butylbenzene	ND	1.0	104	105	1.0	103	107	3.8	70 - 130	20
Styrene	ND	1.0	108	109	0.9	110	116	5.3	70 - 130	20
tert-amyl methyl ether	ND	1.0	100	101	1.0	101	106	4.8	70 - 130	20
tert-Butylbenzene	ND	1.0	107	107	0.0	108	114	5.4	70 - 130	20
Tetrachloroethene	ND	1.0	99	98	1.0	100	104	3.9	70 - 130	20
Tetrahydrofuran (THF)	ND	2.5	104	107	2.8	112	116	3.5	70 - 130	20
Toluene	ND	1.0	104	104	0.0	105	109	3.7	70 - 130	20
trans-1,2-Dichloroethene	ND	1.0	113	111	1.8	99	110	10.5	70 - 130	20
trans-1,3-Dichloropropene	ND	0.40	109	110	0.9	104	110	5.6	70 - 130	20
trans-1,4-dichloro-2-butene	ND	5.0	113	114	0.9	110	119	7.9	70 - 130	20
Trichloroethene	ND	1.0	101	100	1.0	100	101	1.0	70 - 130	20
Trichlorofluoromethane	ND	1.0	108	108	0.0	86	92	6.7	70 - 130	20
Trichlorotrifluoroethane	ND	1.0	109	108	0.9	96	102	6.1	70 - 130	20
Vinyl chloride	ND	1.0	115	118	2.6	101	108	6.7	70 - 130	20
% 1,2-dichlorobenzene-d4	103	%	102	102	0.0	100	100	0.0	70 - 130	20
% Bromofluorobenzene	92	%	103	101	2.0	100	101	1.0	70 - 130	20
% Dibromofluoromethane	110	%	103	107	3.8	98	88	10.8	70 - 130	20
% Toluene-d8	116	%	101	102	1.0	100	99	1.0	70 - 130	20

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

QA/QC Batch 767828 (ug/L), QC Sample No: CS47507 (CS49634)

Volatile Petroleum Hydrocarbons - Ground Water

Unadjusted C5-C8 Aliphatics (*1)	ND	100	96	96	0.0				70 - 130	25
Unadjusted C9-C12 Aliphatics (*1)	ND	100	106	106	0.0				70 - 130	25
C5-C8 Aliphatic Hydrocarbons *1,2	ND	100	96	96	0.0				70 - 130	25
C9-C12 Aliphatic Hydrocarbons *1,	ND	100	106	106	0.0				70 - 130	25
C9-C10 Aromatic Hydrocarbons *1	ND	100	102	104	1.9				70 - 130	25

QA/QC Data

SDG I.D.: GCS49634

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Benzene	ND	1.0	93	95	2.1				70 - 130	25
Ethyl Benzene	ND	1.0	97	99	2.0				70 - 130	25
MTBE	ND	1.0	103	105	1.9				70 - 130	25
Naphthalene	ND	5.0	108	114	5.4				70 - 130	25
Toluene	ND	1.0	97	99	2.0				70 - 130	25
m,p-Xylenes	ND	2.0	99	101	2.0				70 - 130	25
o-Xylene	ND	1.0	96	97	1.0				70 - 130	25
% 2,5-Dibromotoluene (PID)	109	%	107	105	1.9				70 - 130	25
% 2,5-Dibromotoluene (FID)	110	%	107	105	1.9				70 - 130	25

Comment:

This batch consists of a Blank, LCS and LCSD.

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.
r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference
(ISO) - Isotope Dilution

Phyllis Shiller, Laboratory Director
February 02, 2025

Sunday, February 02, 2025

Criteria: MA: CAM, GW1

State: MA

Sample Criteria Exceedances Report

GCS49634 - CMGENV

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CS49634	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS49634	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CS49634	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CS49634	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CS49634	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.25	0.02	0.02	ug/L
CS49634	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.25	0.02	0.02	ug/L
CS49634	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	40	0.3	0.3	ug/L
CS49634	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	40	0.3	0.3	ug/L

MassDEP Analytical Protocol Certification Form

Laboratory Name: Phoenix Environmental Laboratories, Inc. **Project #:**

Project Location: 2024-285 **RTN:**

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]
CS49634

Matrices: ☑ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below)

8260 VOC CAM II A ☑	7470/7471 Hg CAM III B ☑	MassDEP VPH CAM IV A ☑	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☑	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☑	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☑	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9012 Total Cyanide/PAC CAM V1 A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature*) in the field or laboratory, and prepared/analyzed with method holding times? (* see narrative)	☑ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements speified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes ☐ No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 methods only: Was the complete analyte list reported for each method?	☑ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☑ Yes ☐ No

Responses to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes ☑ No

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056(2)(k) and WSC-07-350

H	Were all QC performance standards specified in the CAM protocol(s) achieved? See Section: EPH Narration .	☐ Yes ☑ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes ☑ No

All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Authorized Signature: Ethan Lee

Date: Sunday, February 02, 2025

Printed Name: Ethan Lee

Position: Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

February 02, 2025

SDG I.D.: GCS49634

SDG Comments

Metals Analysis:
The client requested a shorter list of elements than the 6010 MCP list. Only the RCRA 8 Metals are reported as requested on the chain of custody.

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

EPH Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? No.

QC Batch 768033 (Samples: CS49634): -----

One or more analytes is below the method criteria. A low bias for these analytes is possible. (C36 - Hexatriacontane)

Instrument:

AU-FID4 01/27/25-1 Adam Werner, Chemist 01/27/25

CS49634 (1X)

The initial calibration (AL0122AI) RSD for the compound list was less than 25% except for the following compounds: None.
The continuing calibration %D for the compound list was less than 25% except for the following compounds:None.

QC (Batch Specific):

Batch 768033 (CS48654)

CS49634

All LCS recoveries were within 40 - 140 with the following exceptions: C36 - Hexatriacontane(32%)
All LCSD recoveries were within 40 - 140 with the following exceptions: C36 - Hexatriacontane(27%)
All LCS/LCSD RPDs were less than 25% with the following exceptions: None.
Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SVOASIM Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM33 01/24/25-1 Matt Richard, Chemist 01/24/25

CS49634 (1X)

Initial Calibration Evaluation (CHEM33/33_PAHSIM_0109):
100% of target compounds met criteria.

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MCP Certification Report

February 02, 2025

SDG I.D.: GCS49634

SVOASIM Narration

The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.

Continuing Calibration Verification (CHEM33/0124_06-33_PAHSIM_0109) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.

QC (Batch Specific):

Batch 767893 (CS48194)

CS49634

All LCS recoveries were within 40 - 140 with the following exceptions: None.
All LCSD recoveries were within 40 - 140 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

VOA Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM02 01/23/25-1 Michael Hahn, Chemist 01/23/25

CS49634 (1X)

Initial Calibration Evaluation (CHEM02/VT-011625):
94% of target compounds met criteria.
The following compounds had %RSDs >20%: 1,2,4-Trimethylbenzene 22% (20%), 2-Isopropyltoluene 22% (20%), n-Butylbenzene 25% (20%), p-Isopropyltoluene 22% (20%), sec-Butylbenzene 26% (20%)
The following compounds did not meet Table 4 recommended minimum response factors: None.

Continuing Calibration Verification (CHEM02/0123_02-VT-011625) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
99% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet Table 4 recommended minimum response factors: None.

QC (Batch Specific):

Batch 768041 (CS50027) CHEM02 1/23/2025-1

CS49634(1X)

Environmental Laboratories, Inc.
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

February 02, 2025

SDG I.D.: GCS49634

VOA Narration

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.
The RPD criteria for the LCS/LCSD is 20%,
The MS/MSD RPD criteria is listed above.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

VPH Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

PIDFID 01/22/25-1 James Karabetsos, Chemist 01/22/25

CS49634 (1X)

Initial Calibration Evaluation (PIDFID/VPH_012125_T):
The following compounds exceeded %RSD criteria: None.

QC (Batch Specific):

Batch 767828 (CS47507)

CS49634(1X)

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 25% with the following exceptions: None.
This batch consists of a Blank, LCS and LCSD.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Cooler: Yes ☒ No ☐
Coolant: IPK ☒ ICE ☐ No ☐

PHOENIX Environmental Laboratories, Inc.

CT/MA/RI CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: makrina@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-1102

Temp 1.7 °C Pg of

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☒ Email: NSchumaker@cmeenv.com

Customer: CME Environmental
Address: 67 Hall Road
Sturbridge, MA 01566

Project: 2024.285
Report to: CME
Invoice to: CME
Quote #

Project P.O: Beacon

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature [signature] Date: 1.22.25

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
B=Bulk L=Liquid X = ________(Other)

Analyses: *MS/MSD (May be billable at analysis unit rate); VOC-8260; VPH; Soluble RCRA 8; EPH

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	*MS/MSD	VOC-8260	VPH	Soluble RCRA 8	EPH	GL Amber 8 oz. [ ] w/H$_3$PO$_4$ [ ] NAHSO$_4$	Soil VOA Vials [ ] methanol [ ] H$_2$O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [X] HCl	GL Amber 1000ml [ ] As is [ ] H$_2$SO$_4$	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H$_2$SO$_4$ [ ] 250ml [ ] 500ml	PL HNO$_3$ 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
49634	MW-7	GW	1.22.25	12:30	X	X	X	X						6	2			1			

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	1/22/25	2:00
[signature]	[signature]	1/22/25	15:07

Comments, Special Requirements or Regulations:

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ 4 Days*
☐ 5 Days*
☒ Standard
☐ Other ______

*** SURCHARGES MAY APPLY**

RI
☐ RES DEC
☐ I/C DEC
☐ GA Leachability
☐ GB Leachability
☐ GA-GW Objectives
☐ GB-GW Objectives
☐ Other

CT
☐ RCP Cert
☐ GWPC
☐ SWPC
☐ GA PMC
☐ GB PMC
☐ SWPC
☐ RES DEC
☐ I/C DEC

MA
☒ MCP Certification
☒ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ SW Protection
☐ RCS-1 / RCGW-1
☐ RCS-2 / RCGW-2
☐ S-1 Calc.
☐ ______

State where samples were collected: MA

Data Format
☐ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist*
☐ Full Data Package*
☒ Phoenix Std
☐ Other

*** SURCHARGE APPLIES**

***MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.**

Form PEL-126 Rev. 9/23