

Horsley Witten Group

Sustainable Environmental Solutions

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VIA EMAIL

January 17, 2023

Mr. Jarrod Cabral
Department of Public Works
Town of Truro
17 Town Hall Road
Truro, MA 02666

RE: Phase II Limited Subsurface Investigation Letter Report
Undeveloped Property
25 South Highland Road
Truro, Massachusetts

Dear Mr. Cabral

At the request of the Town of Truro Department of Public Works, the Horsley Witten Group ("HW") completed a Phase II Limited Subsurface Investigation (LSI) at the undeveloped property located at 25 South Highland Road, Truro, Massachusetts (the "Site"). The LSI was completed to determine if the abutting former South Highland Road Municipal Burn Dump located at 27 South Highland Road (the "burn dump") has impacted the Site with oil and/or hazardous material (OHM) above the applicable Reportable Concentrations documented in the Massachusetts Contingency Plan (MCP). Refer to Figure 1 for the regional location of the Site.

As part of the LSI, HW completed the following:

- An on-line file review of reports available from the Massachusetts Department of Environmental Protection (MassDEP) for the adjacent burn dump (release tracking number [RTN] 4-00897).
- A review of records provided by the Town of Truro Health Department.
- The preparation of a figure with historic soil and groundwater sampling locations collected by others at the Site and adjacent burn dump in 1999 and 2000.
- An analysis of historic soil analytical results collected by others at the Site in 1999 and 2000, comparing them to the current 2019 Reportable Concentrations documented in the MCP.

- Collection of soil and groundwater samples to determine if the adjacent burn dump has impacted the Site with levels of OHM above the Reportable Concentrations documented in the MCP.

On-line File Review

The Site and the burn dump were initially located on the same approximate 3.02-acre parcel of land which was subdivided on August 19, 2009. The eastern portion of the parcel was approximately 2.32 acres and was operated as the burn dump. The remaining western portion (approximate 0.70-acres) is the Site and was not operated as a burn dump. The subdivision was based on the results of the investigations described below. Both parcels are indicated on Figure 2.

According to the reports titled *Tier Classification Submittal*, prepared by Environmental Partners Group, Inc. and dated April 7, 2005 and *South Highland Burn Dump Phase IV As-Built and Final Inspection Report to Accompany the Phase IV Completion Statement and Support a Response Action Outcome*, prepared by East Cape Engineering, Inc. and dated April 5, 2005, the burn dump was operated by the Town of Truro from 1940 until 1964. Street sweepings were also disposed of at the burn dump in the 1960's and 1970s. The burn dump received residential solid waste and may have also received waste from the North Truro Air Force Station.

Several subsurface investigations were conducted by others to delineate the extent of burn debris and OHM in soil and groundwater (Refer to Attachment A for historic soil boring/test pit logs, tabulated analytical data and figures). It is estimated that the burn dump contains approximately 10,000 cubic yards of buried burn waste including ash, metal, and glass over an area approximately 60,000 square feet in size. The approximate extent of the burn dump is indicated on Figure 2. Analytical results from the historic investigations (Attachment A) indicated that burn dump soils are impacted with lead and select polycyclic aromatic hydrocarbons (PAHs) above the applicable MCP standards. Groundwater is located approximately 91 to 105 feet below grade and was not impacted with OHM (Attachment A) above the applicable standards. Groundwater was determined to flow to the southwest, towards the Site.

The burn dump was capped in 2004 with approval from the MassDEP Solid Waste Division. The capping system was reportedly installed as follows from the bottom layer to the top layer:

- Six inches of sand fill
- Geosynthetic clay liner (GCL)
- Six inches of drainage sand
- 12-inches of sand/loam mix (vegetative support layer)
- Hydroseed grass mix

An Activity and Use Limitation (AUL) was placed on the burn dump (refer to Attachment B) relating to lead and select PAHs in soil above the applicable standards. The extent of the AUL is indicated on Figure 2 and it limits the following activities at the burn dump:

- Any activity that will damage the capping system;
- Any excavation, digging, trench etc., that penetrates the ground surface;
- Construction of any structures that are temporary or permanent; and
- Operation of any motorized vehicle with the exception of mowers and other similar vehicles necessary for the maintenance of the vegetive cover.

The investigations also determined that the Site was not part of the burn dump. This was based on the collection of three soil samples (Table 1 and Attachment A), one groundwater sample (Attachment A), and the excavation of nine test pits throughout the Site (Figure 2 and Attachment A). According to the Town of Truro Assessor Records, the Site was subdivided from the burn dump parcel on August 19, 2009.

To confirm that the Site was not part of the burn dump and to provide additional analytical data to support this statement, a subsurface investigation was completed between October and December 2022. Details of the investigation are set forth below.

Selection of Applicable Soil and Groundwater Thresholds for the Site

The MCP identifies two reporting categories for soil (RCS-1 and RCS-2) and two for groundwater (RCGW-1 and RCGW-2). Details for each reporting category is set forth below.

Soil Reporting Categories

The MCP defines RCS-1 as soil samples obtained:

- *At or within 500 feet of a residential dwelling, a residentially-zoned property, school, playground, recreational area or park; or*
- *Within the geographic boundaries of a groundwater resource area categorized as RCGW- 1 in 310 CMR 40.0362(1)(a).*

The MCP defines RCS-2 as soil samples:

- *That are not obtained from category RCS-1 areas.*

Groundwater Reporting Categories

The MCP defines RCGW-1 as groundwater samples obtained:

- *Within a Current Drinking Water Source Area; or*

- *Within a Potential Drinking Water Source Area.*

The MCP defines RCGW-2 as groundwater samples:

- *That are not obtained from category RCGW-1 areas.*

Considering that the Site is located with 500-feet of a residential dwelling and is located within a Current or Potential Drinking Water Source Area, RCS-1 and RCGW-1 are the appropriate reporting categories for the Site.

2022 Test Pit Excavation

Seven test pits (TP-1A through TP-7A) were excavated at the Site to depths ranging from two to eight feet below grade at the locations indicated on Figure 2. Soil samples were continuously collected in 2-foot intervals and field screened for total organic vapors ("TOV") with a photoionization detector ("PID") using the jar headspace method. TOV PID concentrations were all less than the equipment's detection limit of 0.1 parts per million by volume ["ppmv"]. No significant visual or olfactory evidence of a significant release of OHM or burn dump debris were identified in any of the test pits. Groundwater was not encountered in any of the test pits and is located at depths ranging from 91 to 105 feet below grade. Test pit logs are included in Attachment C, and photographic documentation is included in Attachment D.

2022 Monitoring Well Sampling

A monitoring well (MW-2) and a potential future drinking water well (DWW-1) are located at the Site and two monitoring wells (MW-1 and MW-3) are located at the burn dump at the locations indicated on Figure 2. Prior to sampling the wells, depth to groundwater was determined using a water level. The wells were then purged of five well volumes utilizing low flow sampling methodologies. After purging was complete, groundwater samples were collected in laboratory provided sample containers and placed on ice under chain of custody procedures. Groundwater samples collected for volatile organic compounds (VOCs) were collected with a disposable bailer, and groundwater samples for dissolved metals analysis were field filtered with a 0.45-micron filter prior to preservation.

2022 Laboratory Results for Soil

Considering that no visual or olfactory evidence of OHM or elevated TOV PIDs were identified in any of the test pits, soil samples were collected from the ground surface (0-2 feet below grade) for laboratory analysis. The sample locations were selected to provide reasonable spatial distribution over the entire Site to evaluate a potential residential occupant exposure scenario. Soil samples were submitted to a Massachusetts certified laboratory for dioxins and furans (D&F), extractable petroleum hydrocarbons (EPH), polychlorinated biphenyls (PCBs), Semi-Volatile Organic

Compounds (SVOCs), Massachusetts Contingency Plan (MCP) 14 metals, volatile organic compounds (VOCs), per and polyfluoroalkyl substances (PFAS) and/or volatile petroleum hydrocarbons (VPH). Details of the laboratory results are set forth below.

D&F

The D&F analyte octachlorodibenzodioxin was detected in TP-5A (2-4) above the laboratory reporting limit and below the applicable RCS-1 for its toxic equivalent (TEQ) to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). The TEQ weighs the toxicity of less toxic D&F analytes as a fraction of the most toxic D&F which is 2,3,7,8-TCDD. All laboratory reporting limits were below the applicable RCS-1 threshold for the TEQ. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

EPH

EPH was not detected in any of the soil samples above the laboratory reporting limit. All laboratory reporting limits were below the applicable RCS-1 thresholds. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

PCBs

PCBs were not detected in any of the soil samples above the laboratory reporting limit. All laboratory reporting limits were below the applicable RCS-1 threshold. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

SVOCs

SVOCs were not detected in any of the soil samples above the laboratory reporting limit. All laboratory reporting limits were below the applicable RCS-1 threshold. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

MCP 14 Metals

Select MCP 14 metals were detected in the soil samples above the laboratory reporting limit but below the applicable RCS-1 threshold. All laboratory reporting limits were below the applicable RCS-1 threshold. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

VOCs

Toluene and 1,2,4-trimethylbenzene were detected in select soil samples above the laboratory reporting limit and below the applicable RCS-1. All laboratory reporting limits were below the applicable RCS-1 threshold. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

PFAS

PFAS was not detected in soil sample TP-5A (2-4) above the laboratory reporting limit. All laboratory reporting limits were below the applicable RCS-1 threshold. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

VPH

VPH compounds were not detected in any of the soil samples above the laboratory reporting limit. All laboratory reporting limits were below the applicable RCS-1 threshold. Tabulated soil analytical data is included on Table 1, and the laboratory analytical report is included in Attachment E.

LABORATORY RESULTS FOR GROUNDWATER

HW collected groundwater samples from the existing monitoring well (MW-2) and potential drinking water well (DWW-1) located at the Site as well as the two monitoring wells (MW-1 and MW-3) located at the former burn dump. The groundwater samples were submitted to a Massachusetts certified laboratory for D&F, EPH, MCP 14 metals, PCBs, SVOCs, VOCs, PFAS, herbicides, pesticides, and/or VPH. Details of the laboratory results are set forth below.

D&F

D&F was not detected above the laboratory reporting limit in sample DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold for the TEQ. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

EPH

EPH was not detected above the laboratory reporting limit in sample DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

Dissolved MCP 14 Metals

Dissolved MCP 14 metals were not detected above the laboratory reporting limit in sample DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

PCBs

PCBs were not detected above the laboratory reporting limit in sample DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater

analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

SVOCs

SVOCs were not detected above the laboratory reporting limit in DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

VOCs

VOCs were not detected in samples MW-1, MW-2 or MW-3 above the laboratory reporting limit. The Laboratory reporting limits are below the applicable RCGW-1 standards, with the exception of 1,2-dibromoethane, 1,4-dioxane and total 1,3-dichloropropene. Considering no petroleum related VOCs or chlorinated solvents were detected in any of the samples collected, the elevated laboratory reporting limit for 1,2-dibromoethane and 1,4-dioxane are not considered a concern. In addition, the method detection limits for trans and cis 1,2-dichloropropene which summed together form total 1,3-dichloropropene, were both below the applicable RCGW-1 and as such, the elevated reporting limit for total 1,3-dichloropropene is not considered a concern.

With the exception of tetrahydrofuran (THF), no VOCs were detected in DWW-1 above the laboratory reporting limit. THF was not detected in any of the other monitoring wells (MW-1 through MW-3). No VOCs were detected in DWW-1 during a 2009 sampling event (Attachment A), but TEF was not one of the analytes included on the VOC list. THF is used in manufacturing PVC and is also used in PVC cement. The well was resampled and TEF was detected again (approximately a month and half later) at a concentration approximately 30 times less than the initial concentration. This along with the lack of TEF detections in the other monitoring wells (MW-1 through MW-3) suggesting that the TEF may have been attributed to the well itself and not from a release.

Both detections of TEF were below the applicable RCGW-1 standard. The Laboratory reporting limits from the second round of testing are below the applicable RCGW-1 standards, with the exception of 1,2-dibromoethane, 1,4-dioxane and total 1,3-dichloropropene. Considering no petroleum related VOCs or chlorinated solvents were detected in any of the samples collected, the elevated laboratory reporting limit for 1,2-dibromoethane and 1,4-dioxane are not considered a concern. In addition, the method detection limits for trans and cis 1,2-dichloropropene which summed together form total 1,3-dichloropropene, were both below the applicable RCGW-1 and as such, the elevated reporting limit for total 1,3-dichloropropene is not considered a concern. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

PFAS

No PFAS was detected above the laboratory reporting limit in DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E

Herbicides

No herbicides were detected above the laboratory reporting limit in DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

Pesticides

No pesticides were detected above the laboratory reporting limit in DWW-1. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

VPH

As indicated on Table 2, VPH was initially detected in DWW-1 above the applicable RCGW-1 threshold. The attached laboratory report (Attachment E) states that: *"It should be noted that based on review of the VPH chromatograms there is the potential that non-hydrocarbon compounds are being included in the summation of the C5-C8 Aliphatics range. This could result in a greater concentration being reported for this range than would otherwise be the case. The VPH gas chromatographic method is subject to the inclusion of non-hydrocarbon compounds in carbon range summations if the non-hydrocarbon compound is amenable to the method operating conditions and elutes within the range's retention time window."* Based on discussions with the laboratory, TEF which is a non-hydrocarbon was included in the VPH summation and the laboratory was not able to exclude non-hydrocarbon from the C5-C8 Aliphatic range. As such, a groundwater sample was recollected from DWW-1 and submitted for laboratory analysis to a different lab that was capable of excluding the TEF detection from the C5-C8 Aliphatic range. The second sample did not contain VPH above the laboratory reporting limit. All laboratory reporting limits were below the applicable RCGW-1 threshold. Tabulated groundwater analytical data is included on Table 2, and the laboratory analytical report is included in Attachment E.

CONCLUSION

Based on the analytical results documented above, a reportable release of OHM consistent with MCP has not occurred at the Site. Additionally, it does not appear that the adjacent burn dump has significantly impacted soil or groundwater at the Site.

Mr. Jarrod Cabral

January 17, 2023

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Thank you for the opportunity to provide you with this Limited Subsurface Investigation. Please feel free to contact me with any questions at 508-833-6600.

Sincerely,

HORSLEY WITTEN GROUP, INC.

A handwritten signature in blue ink, appearing to read "Bryan Massa", with a long horizontal flourish extending to the right.

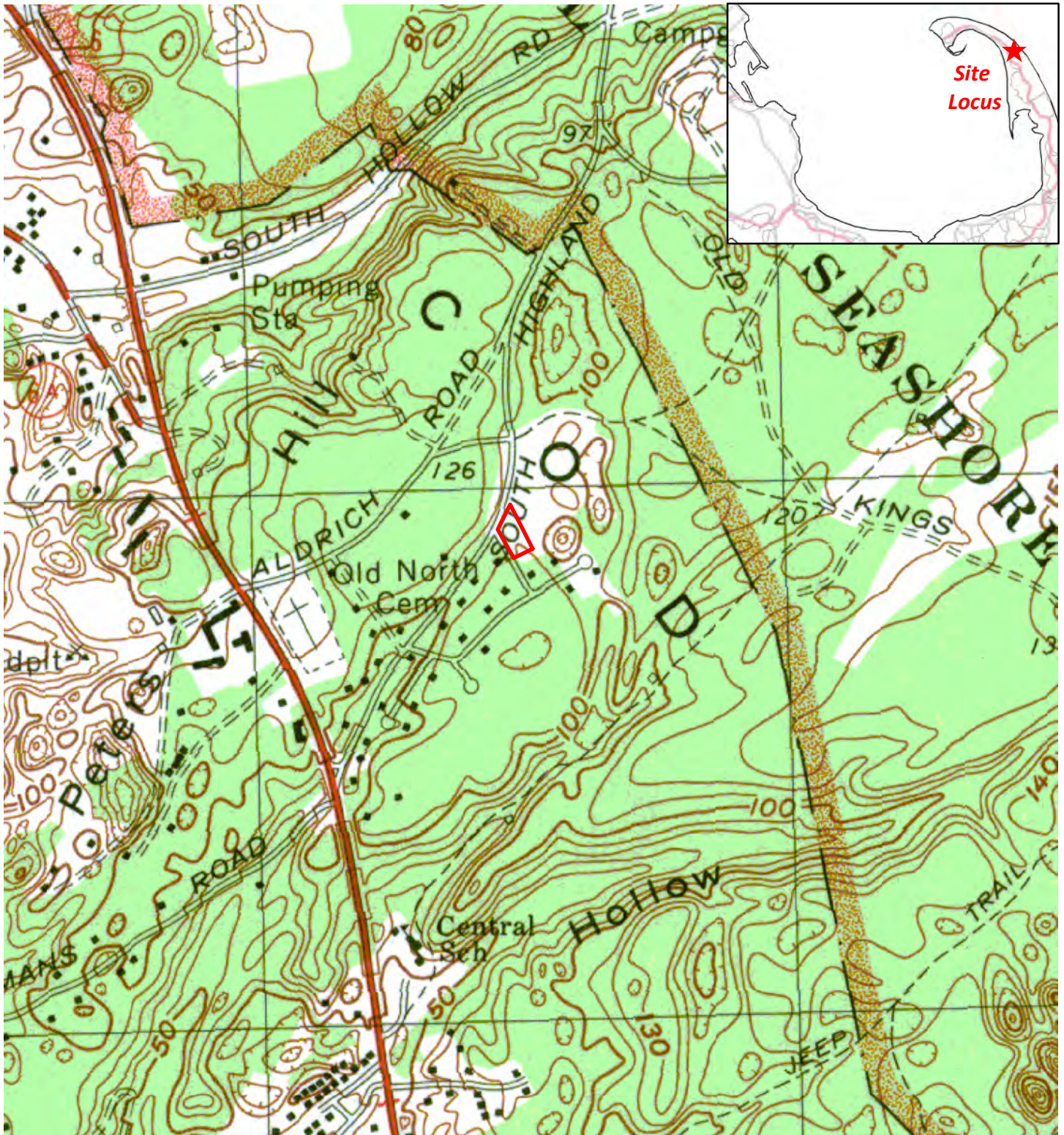
Bryan Massa, LSP

Senior Environmental Professional

Enclosure

FIGURES

- Figure 1 – Locus Map
- Figure 2 – Environmental Sampling Locations



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Legend

*2016 NAIP imagery service



Subject Property



Horsley Witten Group
Sustainable Environmental Solutions

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USGS Locus
2 Sand Pit Road
Truro, MA

Date: 12/27/2022

Figure 1



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Legend

- Subject Property (25 South Highland Road)
- Abutting Former Burn Dump with AUL (27 South Highland Road)
- Abutting Former Burn Dump Geosynthetic Clay Liner
- ⊕ Future Drinking Water Well (Installed by Others in 2009)
- ⊕ Groundwater Monitoring Well (Installed by Others in 1999)
- ⊕ Test Pit (Documented by Others in 1999 and 2000)
- ⊕ Test Pit (Documented by HW in 2022)



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Environmental Sampling
Locations
25 and 27 South Highland Road
Truro, MA

Date: 12/22/2022

Figure 2

Tables

- Table 1 – Soil Analytical Results
- Table 2 – Groundwater Analytical Results

Table 2 - Soil Analytical Results

Location				TP-5A (0-2)	TP-6A (0-2)	TP-7A (0-2)	TP-20 (EPG-S3)	TP-22 (EPG-S6)	TP-29	TP-30
Sample Date				10/20/2022	10/20/2022	10/20/2022	9/28/1999	9/28/1999	2/7/2000	2/7/2000
Sample Matrix				Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Depth (Feet Below Grade)				0-2	0-2	0-2	1-3	1-3	1-3	1-3
Analyte	MassDEP RCS-1	Units	Results							
Dioxins & Furans										
2,3,7,8-TCDD	NS	mg/kg	5.01E-07 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
OCDD	NS	mg/kg	0.00124	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	NS	mg/kg	5.01E-07 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
OCDF	NS	mg/kg	5.01E-06 U	NA	NA	NA	NA	NA	NA	NA
Total TCDD	NS	mg/kg	5.01E-07 U	NA	NA	NA	NA	NA	NA	NA
Total PeCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
Total HxCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
Total HpCDD	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
Total TCDF	NS	mg/kg	5.01E-07 U	NA	NA	NA	NA	NA	NA	NA
Total PeCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
Total HxCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
Total HpCDF	NS	mg/kg	2.5E-06 U	NA	NA	NA	NA	NA	NA	NA
Total PCDD	NS	mg/kg	0.00124	NA	NA	NA	NA	NA	NA	NA
Total PCDF	NS	mg/kg	5.01E-07 U	NA	NA	NA	NA	NA	NA	NA
Toxic Equivalency (TEQ)	0.00002	mg/kg	3.71E-07	NA	NA	NA	NA	NA	NA	NA
Extractable Petroleum Hydrocarbons (EPH)										
C9-C18 Aliphatics	1,000	mg/kg	6.91 U	6.77 U	6.76 U	NA	NA	NA	NA	NA
C19-C36 Aliphatics	3,000	mg/kg	6.91 U	6.77 U	6.76 U	NA	NA	NA	NA	NA
C11-C22 Aromatics, Adjusted	1,000	mg/kg	6.91 U	6.77 U	6.76 U	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (PCBs)										
Aroclor 1016	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1221	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1232	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1242	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1248	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1254	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1260	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1262	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Aroclor 1268	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
PCBs, Total	1	mg/kg	0.0335 U	0.0337 U	0.033 U	NA	NA	NA	NA	NA
Semivolatile Organics Compounds (SVOCs)										
Acenaphthene	4	mg/kg	0.14 U	0.14 U	0.14 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
1,2,4-Trichlorobenzene	2	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Hexachlorobenzene	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA	NA
Bis(2-chloroethyl) ether	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA	NA
2-Chloronaphthalene	1,000	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
1,2-Dichlorobenzene	9	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
1,3-Dichlorobenzene	3	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
1,4-Dichlorobenzene	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA	NA
3,3'-Dichlorobenzidine	3	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
2,4-Dinitrotoluene	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA	NA
2,6-Dinitrotoluene	100	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Azobenzene	50	mg/kg	0.17 U	0.17 U	0.17 U	NA	NA	NA	NA	NA
Fluoranthene	1,000	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.45	0.33 U	0.34 U	0.34 U
4-Bromophenyl phenyl ether	100	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Bis(2-chloroisopropyl) ether	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA	NA
Bis(2-chloroethoxy) methane	500	mg/kg	0.18 U	0.19 U	0.18 U	0.33 U	0.33 U	NA	NA	NA
Hexachlorobutadiene	30	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Hexachloroethane	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA	NA
Isophorone	100	mg/kg	0.15 U	0.16 U	0.15 U	NA	NA	NA	NA	NA
Naphthalene	4	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Nitrobenzene	500	mg/kg	0.15 U	0.16 U	0.15 U	0.33 U	0.33 U	NA	NA	NA
Bis(2-ethylhexyl) phthalate	90	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Butyl benzyl phthalate	100	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Di-n-butylphthalate	50	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Di-n-octylphthalate	1,000	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Diethyl phthalate	10	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Dimethyl phthalate	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA	NA
Benzo(a)anthracene	7	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Benzo(a)pyrene	2	mg/kg	0.14 U	0.14 U	0.14 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Benzo(b)fluoranthene	7	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.35	0.33 U	0.34 U	0.34 U
Benzo(k)fluoranthene	70	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Chrysene	70	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Acenaphthylene	1	mg/kg	0.14 U	0.14 U	0.14 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Anthracene	1,000	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Benzo(ghi)perylene	1,000	mg/kg	0.14 U	0.14 U	0.14 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Fluorene	1,000	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Phenanthrene	10	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Dibenzo(a,h)anthracene	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Indeno(1,2,3-cd)pyrene	7	mg/kg	0.14 U	0.14 U	0.14 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U
Pyrene	1,000	mg/kg	0.1 U	0.1 U	0.1 U	0.33 U	0.35	0.33 U	0.34 U	0.34 U
Aniline	1,000	mg/kg	0.2 U	0.21 U	0.2 U	NA	NA	NA	NA	NA
4-Chloroaniline	1	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA
Dibenzofuran	100	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA	NA

Location			TP-5A (0-2)	TP-6A (0-2)	TP-7A (0-2)	TP-20 (EPG-S3)	TP-22 (EPG-S6)	TP-29	TP-30
Sample Date			10/20/2022	10/20/2022	10/20/2022	9/28/1999	9/28/1999	2/7/2000	2/7/2000
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Depth (Feet Below Grade)			0-2	0-2	0-2	1-3	1-3	1-3	1-3
Analyte	MassDEP RCS-1	Units	Results						
2-Methylnaphthalene	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	0.33 U	0.34 U
Acetophenone	1,000	mg/kg	0.17 U	0.17 U	0.17 U	NA	NA	NA	NA
2,4,6-Trichlorophenol	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA
2-Chlorophenol	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA
2,4-Dichlorophenol	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA
2,4-Dimethylphenol	0.7	mg/kg	0.071 U	0.072 U	0.072 U	0.33 U	0.33 U	NA	NA
2-Nitrophenol	100	mg/kg	0.37 U	0.37 U	0.37 U	0.33 U	0.33 U	NA	NA
4-Nitrophenol	100	mg/kg	0.24 U	0.24 U	0.24 U	0.33 U	0.33 U	NA	NA
2,4-Dinitrophenol	3	mg/kg	0.82 U	0.83 U	0.82 U	0.33 U	0.33 U	NA	NA
Pentachlorophenol	3	mg/kg	0.34 U	0.34 U	0.34 U	0.33 U	0.33 U	NA	NA
Phenol	1	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA
2-Methylphenol	500	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA
3-Methylphenol/4-Methylphenol	500	mg/kg	0.24 U	0.25 U	0.25 U	0.33 U	0.33 U	NA	NA
2,4,5-Trichlorophenol	4	mg/kg	0.17 U	0.17 U	0.17 U	0.33 U	0.33 U	NA	NA
Biphenyl	0.05	mg/kg	0.034 U	0.034 U	0.034 U	NA	NA	NA	NA
Total Massachusetts Contingency Plan 14 Metals (MCP 14 Metals)									
Antimony, Total	20	mg/kg	1.97 U	2.02 U	2.01 U	NA	NA	NA	NA
Arsenic, Total	20	mg/kg	1.55	0.51	1.54	NA	NA	NA	NA
Barium, Total	1,000	mg/kg	1.69	0.987	2.06	NA	NA	NA	NA
Beryllium, Total	90	mg/kg	0.197 U	0.202 U	0.201 U	NA	NA	NA	NA
Cadmium, Total	70	mg/kg	0.394 U	0.404 U	0.402 U	NA	NA	NA	NA
Chromium, Total	100	mg/kg	1.74	0.477	1.85	NA	NA	NA	NA
Lead, Total	200	mg/kg	1.97 U	2.74	2.01 U	11 U	45	NA	NA
Mercury, Total	20	mg/kg	0.074 U	0.076 U	0.078 U	NA	NA	NA	NA
Nickel, Total	600	mg/kg	2.45	1.01 U	2.05	NA	NA	NA	NA
Selenium, Total	400	mg/kg	1.97 U	2.02 U	2.01 U	NA	NA	NA	NA
Silver, Total	100	mg/kg	0.394 U	0.404 U	0.402 U	NA	NA	NA	NA
Thallium, Total	8	mg/kg	1.97 U	2.02 U	2.01 U	NA	NA	NA	NA
Vanadium, Total	400	mg/kg	2.46	1.94	3.25	NA	NA	NA	NA
Zinc, Total	1,000	mg/kg	6.11	2.02 U	6.9	NA	NA	NA	NA
Volatile Organic Compounds (VOCs)									
Methylene chloride	0.1	mg/kg	0.0039 U	0.0037 U	0.0039 U	NA	NA	NA	NA
1,1-Dichloroethane	0.4	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Chloroform	0.2	mg/kg	0.0012 U	0.0011 U	0.0012 U	NA	NA	NA	NA
Carbon tetrachloride	5	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
1,2-Dichloropropane	0.1	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Dibromochloromethane	0.005	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
1,1,2-Trichloroethane	0.1	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Tetrachloroethene	1	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
Chlorobenzene	1	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
Trichlorofluoromethane	1,000	mg/kg	0.0031 U	0.0029 U	0.0031 U	NA	NA	NA	NA
1,2-Dichloroethane	0.1	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
1,1,1-Trichloroethane	30	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
Bromodichloromethane	0.1	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
trans-1,3-Dichloropropene	0.01	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
cis-1,3-Dichloropropene	0.01	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
1,3-Dichloropropene, Total	0.01	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
1,1-Dichloropropene	NS	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
Bromoform	0.1	mg/kg	0.0031 U	0.0029 U	0.0031 U	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	0.005	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
Benzene	2	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
Toluene	30	mg/kg	0.00082	0.00074 U	0.0023	NA	NA	NA	NA
Ethylbenzene	40	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Chloromethane	100	mg/kg	0.0031 U	0.0029 U	0.0031 U	NA	NA	NA	NA
Bromomethane	0.5	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Vinyl chloride	0.7	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Chloroethane	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,1-Dichloroethene	3	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
trans-1,2-Dichloroethene	1	mg/kg	0.0012 U	0.0011 U	0.0012 U	NA	NA	NA	NA
Trichloroethene	0.3	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
1,2-Dichlorobenzene	9	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,3-Dichlorobenzene	3	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,4-Dichlorobenzene	0.7	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Methyl tert butyl ether	0.1	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
p/m-Xylene	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
o-Xylene	100	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Xylenes, Total	100	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
cis-1,2-Dichloroethene	0.1	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
1,2-Dichloroethene, Total	300	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Dibromomethane	500	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,2,3-Trichloropropane	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Styrene	3	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Dichlorodifluoromethane	1,000	mg/kg	0.0078 U	0.0074 U	0.0078 U	NA	NA	NA	NA
Acetone	6	mg/kg	0.02 U	0.018 U	0.02 U	NA	NA	NA	NA
Carbon disulfide	100	mg/kg	0.0078 U	0.0074 U	0.0078 U	NA	NA	NA	NA
Methyl ethyl ketone	4	mg/kg	0.0078 U	0.0074 U	0.0078 U	NA	NA	NA	NA
Methyl isobutyl ketone	0.4	mg/kg	0.0078 U	0.0074 U	0.0078 U	NA	NA	NA	NA
2-Hexanone	100	mg/kg	0.0078 U	0.0074 U	0.0078 U	NA	NA	NA	NA
Bromochloromethane	NS	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Tetrahydrofuran	500	mg/kg	0.0031 U	0.0029 U	0.0031 U	NA	NA	NA	NA
2,2-Dichloropropane	NS	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,2-Dibromoethane	0.1	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
1,3-Dichloropropane	500	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	0.1	mg/kg	0.00039 U	0.00037 U	0.00039 U	NA	NA	NA	NA
Bromobenzene	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
n-Butylbenzene	NS	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
sec-Butylbenzene	NS	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
tert-Butylbenzene	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
o-Chlorotoluene	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA

Location			TP-5A (0-2)	TP-6A (0-2)	TP-7A (0-2)	TP-20 (EPG-S3)	TP-22 (EPG-S6)	TP-29	TP-30
Sample Date			10/20/2022	10/20/2022	10/20/2022	9/28/1999	9/28/1999	2/7/2000	2/7/2000
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Depth (Feet Below Grade)			0-2	0-2	0-2	1-3	1-3	1-3	1-3
Analyte	MassDEP RCS-1	Units	Results						
p-Chlorotoluene	NS	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	10	mg/kg	0.0024 U	0.0022 U	0.0023 U	NA	NA	NA	NA
Hexachlorobutadiene	30	mg/kg	0.0031 U	0.0029 U	0.0031 U	NA	NA	NA	NA
Isopropylbenzene	1,000	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
p-Isopropyltoluene	100	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
Naphthalene	4	mg/kg	0.0031 U	0.0029 U	0.0031 U	NA	NA	NA	NA
n-Propylbenzene	100	mg/kg	0.00078 U	0.00074 U	0.00078 U	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,2,4-Trichlorobenzene	2	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,3,5-Trimethylbenzene	10	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,2,4-Trimethylbenzene	1,000	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Diethyl ether	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Diisopropyl Ether	100	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Ethyl-Tert-Butyl-Ether	NS	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
Tertiary-Amyl Methyl Ether	NS	mg/kg	0.0016 U	0.0015 U	0.0016 U	NA	NA	NA	NA
1,4-Dioxane	0.2	mg/kg	0.063 U	0.059 U	0.062 U	NA	NA	NA	NA
Per and Polyfluoroalkyl Substances (PFAS)									
Perfluorobutanoic Acid (PFBA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluoropentanoic Acid (PFPeA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorohexanoic Acid (PFHxA)	NS	mg/kg	0.00023 U	NA	NA	NA	NA	NA	NA
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	NS	mg/kg	0.000921 U	NA	NA	NA	NA	NA	NA
Perfluorohexanoic Acid (PFHxA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluoropentanesulfonic Acid (PFPeS)	NS	mg/kg	0.000921 U	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	0.0005	mg/kg	0.00023 U	NA	NA	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	0.0003	mg/kg	0.00023 U	NA	NA	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	0.00072	mg/kg	0.00023 U	NA	NA	NA	NA	NA	NA
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluoroheptanesulfonic Acid (PFHpS)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	0.00032	mg/kg	0.00023 U	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	0.002	mg/kg	0.00023 U	NA	NA	NA	NA	NA	NA
Perfluorodecanoic Acid (PFDA)	0.0003	mg/kg	0.00023 U	NA	NA	NA	NA	NA	NA
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorononanesulfonic Acid (PFNS)	NS	mg/kg	0.000921 U	NA	NA	NA	NA	NA	NA
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluoroundecanoic Acid (PFUnA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorodecanesulfonic Acid (PFDS)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorooctanesulfonamide (FOSA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEFOSAA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorododecanoic Acid (PFDoA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorotridecanoic Acid (PFTriDA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Perfluorotetradecanoic Acid (PFTA)	NS	mg/kg	0.00046 U	NA	NA	NA	NA	NA	NA
Volatile Petroleum Hydrocarbons (VPH)									
C9-C10 Aromatics	100	mg/kg	4.36 U	4.43 U	5.24 U	NA	NA	NA	NA
C5-C8 Aliphatics, Adjusted	100	mg/kg	4.36 U	4.43 U	5.24 U	NA	NA	NA	NA
C9-C12 Aliphatics, Adjusted	1,000	mg/kg	4.36 U	4.43 U	5.24 U	NA	NA	NA	NA

Notes:

1. U indicates analyte not detected above the laboratory reporting limit. Laboratory reporting limit shown.
2. NA = not analyzed
3. mg/kg = milligrams per kilogram
4. NS = no standard
5. MassDEP RCS-1 is the Massachusetts Department of Environmental Protection 2019 Reportable Concentration for Category S-1 Soil.

Table 2 - Groundwater Analytical Results

Sample Location				DWW-1	DWW-1	MW-1	MW-2	MW-3
Sample Date				10/21/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022
Sample Matrix				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Laboratory				Alpha Analytical	New England Testing	New England Testing	New England Testing	New England Testing
Depth to Groundwater (feet below grade)				104.78	104.71	91.51	104.95	102.95
Total Well Depth				127.3	127.3	100.1	113.3	111.11
Analyte	Units	MassDEP RCGW-1	Units	Results				
Dioxins & Furans								
2,3,7,8-TCDD	NA	NS	ug/l	9.43E-06 U	NA	NA	NA	NA
1,2,3,7,8-PeCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
OCDD	NA	NS	ug/l	0.0000943 U	NA	NA	NA	NA
2,3,7,8-TCDF	NA	NS	ug/l	9.43E-06 U	NA	NA	NA	NA
1,2,3,7,8-PeCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
2,3,4,7,8-PeCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
OCDF	NA	NS	ug/l	0.0000943 U	NA	NA	NA	NA
Total TCDD	NA	NS	ug/l	9.43E-06 U	NA	NA	NA	NA
Total PeCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
Total HxCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
Total HpCDD	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
Total TCDF	NA	NS	ug/l	9.43E-06 U	NA	NA	NA	NA
Total PeCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
Total HxCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
Total HpCDF	NA	NS	ug/l	0.0000472 U	NA	NA	NA	NA
Total PCDD	NA	NS	ug/l	9.43E-06 U	NA	NA	NA	NA
Total PCDF	NA	NS	ug/l	9.43E-06 U	NA	NA	NA	NA
Toxic Equivalency (TEQ)	ug/l	0.00003	ug/l	2.8E-08 U	NA	NA	NA	NA
Extractable Petroleum Hydrocarbons (EPH)								
C9-C18 Aliphatics	ug/l	700	ug/l	100 U	NA	NA	NA	NA
C19-C36 Aliphatics	ug/l	14,000	ug/l	100 U	NA	NA	NA	NA
C11-C22 Aromatics, Adjusted	ug/l	200	ug/l	100 U	NA	NA	NA	NA
Dissolved Massachusetts Contingency Plan 14 Metals (Disolved MCP 14 Metals)								
Antimony, Dissolved	ug/l	6	ug/l	4 U	NA	NA	NA	NA
Arsenic, Dissolved	ug/l	10	ug/l	5 U	NA	NA	NA	NA
Barium, Dissolved	ug/l	2,000	ug/l	10 U	NA	NA	NA	NA
Beryllium, Dissolved	ug/l	4	ug/l	0.5 U	NA	NA	NA	NA
Cadmium, Dissolved	ug/l	4	ug/l	4 U	NA	NA	NA	NA
Chromium, Dissolved	ug/l	100	ug/l	10 U	NA	NA	NA	NA
Lead, Dissolved	ug/l	10	ug/l	10 U	NA	NA	NA	NA
Mercury, Dissolved	ug/l	2	ug/l	0.2 U	NA	NA	NA	NA
Nickel, Dissolved	ug/l	100	ug/l	25 U	NA	NA	NA	NA
Selenium, Dissolved	ug/l	50	ug/l	10 U	NA	NA	NA	NA
Silver, Dissolved	ug/l	7	ug/l	7 U	NA	NA	NA	NA
Thallium, Dissolved	ug/l	2	ug/l	1 U	NA	NA	NA	NA
Vanadium, Dissolved	ug/l	30	ug/l	10 U	NA	NA	NA	NA
Zinc, Dissolved	ug/l	900	ug/l	50 U	NA	NA	NA	NA
Polychlorinated Biphenyls (PCBs)								
Aroclor 1016	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1221	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1232	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1242	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1248	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1254	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1260	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1262	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
Aroclor 1268	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA
PCBs, Total	ug/l	0.5	ug/l	0.25 U	NA	NA	NA	NA

Sample Location				DWW-1	DWW-1	MW-1	MW-2	MW-3
Sample Date				10/21/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022
Sample Matrix				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Laboratory				Alpha Analytical	New England Testing	New England Testing	New England Testing	New England Testing
Depth to Groundwater (feet below grade)				104.78	104.71	91.51	104.95	102.95
Total Well Depth				127.3	127.3	100.1	113.3	111.11
Analyte	Units	MassDEP RCGW-1	Units	Results				
Semivolatile Organic Compounds (SVOCs)								
1,2,4-Trichlorobenzene	ug/l	70	ug/l	5 U	NA	NA	NA	NA
Bis(2-chloroethyl)ether	ug/l	30	ug/l	2 U	NA	NA	NA	NA
1,2-Dichlorobenzene	ug/l	600	ug/l	2 U	NA	NA	NA	NA
1,3-Dichlorobenzene	ug/l	100	ug/l	2 U	NA	NA	NA	NA
1,4-Dichlorobenzene	ug/l	5	ug/l	2 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	ug/l	80	ug/l	5 U	NA	NA	NA	NA
2,4-Dinitrotoluene	ug/l	30	ug/l	5 U	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/l	1,000	ug/l	5 U	NA	NA	NA	NA
Azobenzene	ug/l	500	ug/l	2 U	NA	NA	NA	NA
4-Bromophenyl phenyl ether	ug/l	1,000	ug/l	2 U	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	ug/l	30	ug/l	2 U	NA	NA	NA	NA
Bis(2-chloroethoxy)methane	ug/l	5,000	ug/l	5 U	NA	NA	NA	NA
Isophorone	ug/l	1,000	ug/l	5 U	NA	NA	NA	NA
Nitrobenzene	ug/l	5,000	ug/l	2 U	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	ug/l	6	ug/l	3 U	NA	NA	NA	NA
Butyl benzyl phthalate	ug/l	1,000	ug/l	5 U	NA	NA	NA	NA
Di-n-butylphthalate	ug/l	500	ug/l	5 U	NA	NA	NA	NA
Di-n-octylphthalate	ug/l	10,000	ug/l	5 U	NA	NA	NA	NA
Diethyl phthalate	ug/l	2,000	ug/l	5 U	NA	NA	NA	NA
Dimethyl phthalate	ug/l	300	ug/l	5 U	NA	NA	NA	NA
Biphenyl	NA	0.9	ug/l	0.73 U	NA	NA	NA	NA
Aniline	ug/l	10,000	ug/l	2 U	NA	NA	NA	NA
4-Chloroaniline	ug/l	20	ug/l	5 U	NA	NA	NA	NA
Dibenzofuran	ug/l	1,000	ug/l	2 U	NA	NA	NA	NA
Acetophenone	ug/l	10,000	ug/l	5 U	NA	NA	NA	NA
2,4,6-Trichlorophenol	ug/l	10	ug/l	5 U	NA	NA	NA	NA
2-Chlorophenol	ug/l	10	ug/l	2 U	NA	NA	NA	NA
2,4-Dichlorophenol	ug/l	10	ug/l	5 U	NA	NA	NA	NA
2,4-Dimethylphenol	ug/l	60	ug/l	5 U	NA	NA	NA	NA
2-Nitrophenol	ug/l	1,000	ug/l	10 U	NA	NA	NA	NA
4-Nitrophenol	ug/l	1,000	ug/l	10 U	NA	NA	NA	NA
2,4-Dinitrophenol	ug/l	200	ug/l	20 U	NA	NA	NA	NA
Phenol	ug/l	1	ug/l	5 U	NA	NA	NA	NA
2-Methylphenol	ug/l	5,000	ug/l	5 U	NA	NA	NA	NA
3-Methylphenol/4-Methylphenol	ug/l	5,000	ug/l	5 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/l	200	ug/l	5 U	NA	NA	NA	NA
Acenaphthene	ug/l	20	ug/l	0.1 U	NA	NA	NA	NA
2-Chloronaphthalene	ug/l	10,000	ug/l	0.2 U	NA	NA	NA	NA
Fluoranthene	ug/l	90	ug/l	0.1 U	NA	NA	NA	NA
Hexachlorobutadiene	ug/l	0.6	ug/l	0.5 U	NA	NA	NA	NA
Naphthalene	ug/l	140	ug/l	0.1 U	NA	NA	NA	NA
Benzo(a)anthracene	ug/l	1	ug/l	0.1 U	NA	NA	NA	NA
Benzo(a)pyrene	ug/l	0.2	ug/l	0.1 U	NA	NA	NA	NA
Benzo(b)fluoranthene	ug/l	1	ug/l	0.1 U	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/l	1	ug/l	0.1 U	NA	NA	NA	NA
Chrysene	ug/l	2	ug/l	0.1 U	NA	NA	NA	NA
Acenaphthylene	ug/l	30	ug/l	0.1 U	NA	NA	NA	NA
Anthracene	ug/l	30	ug/l	0.1 U	NA	NA	NA	NA
Benzo(ghi)perylene	ug/l	20	ug/l	0.1 U	NA	NA	NA	NA
Fluorene	ug/l	30	ug/l	0.1 U	NA	NA	NA	NA
Phenanthrene	ug/l	40	ug/l	0.1 U	NA	NA	NA	NA
Dibenzo(a,h)anthracene	ug/l	0.5	ug/l	0.1 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	ug/l	0.5	ug/l	0.1 U	NA	NA	NA	NA
Pyrene	ug/l	20	ug/l	0.1 U	NA	NA	NA	NA
2-Methylnaphthalene	ug/l	10	ug/l	0.1 U	NA	NA	NA	NA
Pentachlorophenol	ug/l	1	ug/l	0.8 U	NA	NA	NA	NA
Hexachlorobenzene	ug/l	1	ug/l	0.8 U	NA	NA	NA	NA
Hexachloroethane	ug/l	8	ug/l	0.8 U	NA	NA	NA	NA

Sample Location				DWW-1	DWW-1	MW-1	MW-2	MW-3
Sample Date				10/21/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022
Sample Matrix				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Laboratory				Alpha Analytical	New England Testing	New England Testing	New England Testing	New England Testing
Depth to Groundwater (feet below grade)				104.78	104.71	91.51	104.95	102.95
Total Well Depth				127.3	127.3	100.1	113.3	111.11
Analyte	Units	MassDEP RCGW-1	Units	Results				
Volatile Organic Compounds (VOCs)								
1,1,1,2-Tetrachloroethane	ug/l	5	ug/l	20 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/l	200	ug/l	20 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/l	2	ug/l	20 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/l	5	ug/l	20 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/l	70	ug/l	20 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	ug/l	7	ug/l	20 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	NA	NA	ug/l	40 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NA	NA	ug/l	40 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/l	70	ug/l	40 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	ug/l	10,000	ug/l	40 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/l	100	ug/l	40 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	ug/l	0.02	ug/l	40 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/l	600	ug/l	20 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/l	5	ug/l	20 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, Total	NA	70	ug/l	20 U	NA	NA	NA	NA
1,2-Dichloropropane	ug/l	3	ug/l	20 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	ug/l	100	ug/l	40 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/l	100	ug/l	20 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	ug/l	5,000	ug/l	40 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene, Total	ug/l	0.4	ug/l	8 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	ug/l	5	ug/l	20 U	1 U	1 U	1 U	1 U
1,4-Dioxane	ug/l	0.3	ug/l	5,000 U	100 U	100 U	100 U	100 U
2,2-Dichloropropane	ug/l	NS	ug/l	40 U	1 U	1 U	1 U	1 U
2-Hexanone	ug/l	1,000	ug/l	100 U	5 U	5 U	5 U	5 U
Acetone	ug/l	6,300	ug/l	100 U	60 U	5 U	5 U	60 U
Benzene	ug/l	5	ug/l	10 U	1 U	1 U	1 U	1 U
Bromobenzene	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
Bromochloromethane	NA	NS	ug/l	40 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	3	ug/l	20 U	1 U	1 U	1 U	1 U
Bromoform	ug/l	4	ug/l	40 U	1 U	1 U	1 U	1 U
Bromomethane	ug/l	7	ug/l	40 U	1 U	1 U	1 U	1 U
Carbon disulfide	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/l	2	ug/l	20 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/l	100	ug/l	20 U	1 U	1 U	1 U	1 U
Chloroethane	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
Chloroform	ug/l	50	ug/l	11 U	1 U	1 U	1 U	1 U
Chloromethane	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/l	20	ug/l	20 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/l	0.5	ug/l	8 U	0.3* U	0.3* U	0.3* U	0.3* U
Dibromochloromethane	ug/l	2	ug/l	20 U	1 U	1 U	1 U	1 U
Dibromomethane	ug/l	5,000	ug/l	40 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	ug/l	10,000	ug/l	40 U	1 U	1 U	1 U	1 U
Diethyl ether	ug/l	1,000	ug/l	40 U	5 U	5 U	5 U	5 U
Diisopropyl Ether	ug/l	1000	ug/l	40 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	700	ug/l	20 U	1 U	1 U	1 U	1 U
Ethyl-Tert-Butyl-Ether	NA	NS	ug/l	40 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	ug/l	0.6	ug/l	12 U	0.3* U	0.3* U	0.3* U	0.3* U
Isopropylbenzene	ug/l	10,000	ug/l	40 U	1 U	1 U	1 U	1 U
Methyl ethyl ketone	ug/l	4,000	ug/l	100 U	5 U	5 U	5 U	5 U
Methyl isobutyl ketone	ug/l	350	ug/l	100 U	5 U	5 U	5 U	5 U
Methyl tert butyl ether	ug/l	70	ug/l	40 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/l	5	ug/l	40 U	1 U	1 U	1 U	2 U
Naphthalene	ug/l	140	ug/l	40 U	1 U	1 U	1 U	1 U
n-Butylbenzene	NA	NS	ug/l	40 U	1 U	1 U	1 U	1 U
n-Propylbenzene	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
o-Chlorotoluene	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
o-Xylene	ug/l	3,000	ug/l	20 U	1 U	1 U	1 U	1 U
p/m-Xylene	ug/l	3,000	ug/l	40 U	2 U	2 U	2 U	2 U

Sample Location				DWW-1	DWW-1	MW-1	MW-2	MW-3
Sample Date				10/21/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022
Sample Matrix				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Laboratory				Alpha Analytical	New England Testing	New England Testing	New England Testing	New England Testing
Depth to Groundwater (feet below grade)				104.78	104.71	91.51	104.95	102.95
Total Well Depth				127.3	127.3	100.1	113.3	111.11
Analyte	Units	MassDEP RCGW-1	Units	Results				
p-Chlorotoluene	NA	NS	ug/l	40 U	1 U	1 U	1 U	1 U
p-Isopropyltoluene	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	NA	NS	ug/l	40 U	1 U	1 U	1 U	1 U
Styrene	ug/l	100	ug/l	20 U	1 U	1 U	1 U	1 U
tert-Amyl Alcohol	NA	1,000		NA	5 U	5 U	5 U	5 U
tert-Butyl alcohol	ug/l	1,000	ug/l	NA	5 U	5 U	5 U	5 U
tert-Butylbenzene	ug/l	1,000	ug/l	40 U	1 U	1 U	1 U	1 U
Tertiary-Amyl Methyl Ether	NA	NS	ug/l	40 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/l	5	ug/l	20 U	1 U	1 U	1 U	1 U
Tetrahydrofuran	ug/l	5,000	ug/l	3800	123	5 U	5 U	5 U
Toluene	ug/l	1,000	ug/l	20 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/l	80	ug/l	20 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/l	0.5	ug/l	8 U	0.3* U	0.3* U	0.3* U	0.3* U
Trichloroethene	ug/l	5	ug/l	20 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	ug/l	10,000	ug/l	40 U	1 U	1 U	1 U	1 U
Vinyl chloride	ug/l	2	ug/l	20 U	1 U	1 U	1 U	1 U
Xylenes, Total	ug/l	3,000	ug/l	20 U	1 U	1 U	1 U	1 U
Per and Polyfluoroalkyl Substances (PFAS)								
Perfluorobutanoic Acid (PFBA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluoropentanoic Acid (PFPeA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorobutanesulfonic Acid (PFBS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorohexanoic Acid (PFHxA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluoropentanesulfonic Acid (PFPeS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluoroheptanoic Acid (PFHpA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorooctanoic Acid (PFOA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluoroheptanesulfonic Acid (PFHpS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorononanoic Acid (PFNA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorodecanoic Acid (PFDA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorononanesulfonic Acid (PFNS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluoroundecanoic Acid (PFUnA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorodecanesulfonic Acid (PFDS)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorooctanesulfonamide (FOSA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorododecanoic Acid (PFDoA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorotridecanoic Acid (PFTrDA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Perfluorotetradecanoic Acid (PFTA)	NA	NS	ug/l	0.00189 U	NA	NA	NA	NA
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	ug/l	0.02	ug/l	0.00189 U	NA	NA	NA	NA
Herbicides								
Dalapon	ug/l	10,000	ug/l	NA	1 U	NS	NS	NS
Dicamba	ug/l	5,000	ug/l	NA	1 U	NS	NS	NS
Dichloroprop	NA	NS	ug/l	NA	1 U	NS	NS	NS
2,4-D	ug/l	1,000	ug/l	NA	1 U	NS	NS	NS
2,4,5-TP (Silvex)	ug/l	1,000	ug/l	NA	1 U	NS	NS	NS
2,4,5-T	ug/l	1,000	ug/l	NA	1 U	NS	NS	NS
2,4-DB	ug/l	1,000	ug/l	NA	1 U	NS	NS	NS
Dinoseb	ug/l	5,000	ug/l	NA	1 U	NS	NS	NS
MCPP	NA	NS	ug/l	NA	1 U	NS	NS	NS
MCPA	NA	1,000	ug/l	NA	1 U	NS	NS	NS
Pesticides								
alpha-BHC	ug/l	500	ug/l	NA	0.02 U	NS	NS	NS
gamma-BHC (Lindane)	ug/l	0.2	ug/l	NA	0.02 U	NS	NS	NS
beta-BHC	ug/l	100	ug/l	NA	0.02 U	NS	NS	NS
delta-BHC	ug/l	0.2	ug/l	NA	0.02 U	NS	NS	NS
Heptachlor	ug/l	0.4	ug/l	NA	0.02 U	NS	NS	NS

Sample Location				DWW-1	DWW-1	MW-1	MW-2	MW-3
Sample Date				10/21/2022	12/6/2022	12/6/2022	12/6/2022	12/6/2022
Sample Matrix				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Laboratory				Alpha Analytical	New England Testing	New England Testing	New England Testing	New England Testing
Depth to Groundwater (feet below grade)				104.78	104.71	91.51	104.95	102.95
Total Well Depth				127.3	127.3	100.1	113.3	111.11
Analyte	Units	MassDEP RCGW-1	Units	Results				
Aldrin	ug/l	0.5	ug/l	NA	0.02 U	NS	NS	NS
Heptachlor epoxide	ug/l	0.2	ug/l	NA	0.02 U	NS	NS	NS
gamma-Chlordane	ug/l	2	ug/l	NA	0.02 U	NS	NS	NS
alpha-Chlordane	ug/l	2	ug/l	NA	0.02 U	NS	NS	NS
Chlordane	ug/l	2	ug/l	NA	0.2 U	NS	NS	NS
4,4'-DDE	ug/l	0.05	ug/l	NA	0.02 U	NS	NS	NS
Endosulfan I	ug/l	2	ug/l	NA	0.02 U	NS	NS	NS
Dieldrin	ug/l	0.1	ug/l	NA	0.02 U	NS	NS	NS
Endrin	ug/l	2	ug/l	NA	0.02 U	NS	NS	NS
4,4'-DDD	ug/l	0.2	ug/l	NA	0.02 U	NS	NS	NS
Endosulfan II	ug/l	2	ug/l	NA	0.02 U	NS	NS	NS
4,4'-DDT	ug/l	0.3	ug/l	NA	0.02 U	NS	NS	NS
Endrin aldehyde	ug/l	100	ug/l	NA	0.02 U	NS	NS	NS
Methoxychlor	ug/l	10	ug/l	NA	0.02 U	NS	NS	NS
Endosulfan sulfate	ug/l	2	ug/l	NA	0.02 U	NS	NS	NS
Endrin Ketone	ug/l	NS	ug/l	NA	0.02 U	NS	NS	NS
Toxaphene	ug/l	100	ug/l	NA	0.5 U	NS	NS	NS
Volatile Petroleum Hydrocarbons (VPH)								
C9-C10 Aromatics	ug/l	200	ug/l	200 U	100 U	NS	NS	NS
C5-C8 Aliphatics, Adjusted	ug/l	300	ug/l	696	100 U	NS	NS	NS
C9-C12 Aliphatics, Adjusted	ug/l	700	ug/l	200 U	100 U	NS	NS	NS

Notes:

1. U indicates analyte not detected above the laboratory reporting limit. Laboratory reporting limit shown.
2. Gray highlight indicates laboratory reporting limit is above regulatory standard.
3. Yellow highlight indicates that the sample includes non-petroleum hydrocarbons (tetrahydrofuran) within the C5-C8 range and is biased high and not representative of actual conditions. The sample was recollected and re-analyzed and determined to not contain any petroleum hydrocarbons above the laboratory reporting limit. Refer to the narrative in Alpha laboratory report for additional details on the biased C5-C8 result.
4. NA = not analyzed.
5. ug/l = micrograms per liter.
6. NS = no standard.
7. * = Laboratory reporting limit is above the applicable standard. Sample analyzed to method detection limit to achieve a lower detection limit. The method detection limit is shown.

ATTACHMENT A

HISTORICAL TABLES, FIGURES AND LOGS

**TOWN OF TRURO
TRURO BURN DUMP
SOUTH HIGHLAND ROAD**

BORING LOG
MONITORING WELL NO. MW-1
Page 1 of 2

Drilling Company: Dragin Drilling, Inc.	Date Started: Sept 30, 1999
Drill Rig: CME 75	Date Finished: Oct 1, 1999
Drilling Method: 4.25" ID, 8" OD Hollow Stem Auger	Geologist: Andrew M. Miller
Sampling Method: Split Spoon	Driller: George Henner

DEPTH	USCS CODE	DESCRIPTION
3-5	SP	SAND, medium 80%, fine 15%, coarse 5%; fine rounded gravel present, but <1%. 5YR5/8 yellowish red. Damp.
8-10	SP	SAND, medium 90%, fine 5%, coarse 5%. 7.5YR5/4 brown. Damp.
13-15	SP	SAND, medium 90%, fine 8%, coarse 2%. 2.5Y6/4 light yellowish brown. Damp.
18-20	SP	SAND, medium 95%, coarse 5%, fine present, but <1%. 7.5YR6/6 brownish yellow. Damp.
23-25	SP	SAND, same as 18-20. Color - alternating layers of 7.5YR6/6 brownish yellow and 2.5Y6/4 light yellowish brown. Each layer approx 0.25" thick; no lithology change with color change.
28-30	SP	SAND, medium 85%, fine 15%, coarse present, but <1%. 10YR6/6 brownish yellow. Damp.
33-35	SP	SAND, medium 95%, fine 5%. Layering and color same as 23-25. Damp.
38-40	SP	SAND, lithology, color, and layering same as 23-25. Damp.
43-45	SP	SAND, lithology and color same as 23-25, except for one layer of 2.5Y4/2 dark grayish brown. Layers are approx 0.5" thick. Damp.
48-50	SP	SAND, medium 80%, coarse 15%, fine rounded gravel 5%. Alternating layers of 5YR4/6 yellowish red and 10YR7/3 very pale brown; layers are approx 0.5" thick, no lithology change with change in color. Damp.
53-55	SP	SAND, medium 70%, coarse 15%, fine rounded gravel 15%. 7.5YR5/6 strong brown. Damp.
58-60	SP	SAND, medium 80%, coarse 10%, fine 10%. 7.5YR7/4 pink. Damp.
63-65	SP	SAND, medium 90%, coarse 10%, fine rounded gravel present, but <1%. 7.5YR4/3 brown (63-64) and 7.5YR6/6 reddish yellow (64-65). Damp.

**TOWN OF TRURO
TRURO BURN DUMP
SOUTH HIGHLAND ROAD**

BORING LOG
MONITORING WELL NO. MW-1
Page 2 of 2

DEPTH	USCS CODE	DESCRIPTION
68-70	SP	SAND, fine to medium 100%, coarse present, but <1%. 7.5YR7/3 pink with streaks of 7.5YR6/6 reddish yellow from 69-70. Damp.
73-75	SP	SAND, medium 95%, fine 5%. Alternating layers of 10YR6/8 brownish yellow and 10YR7/3 very pale brown; layers are 0.25" to 0.5" thick; no lithology change with color change. Damp.
78-80	SP GP SP	78-78.5: SAND, same as 73-75. 78.5-79: GRAVEL, fine, rounded 80%; Sand, medium 20%. 10YR6/3 pale brown. 79-80: SAND, medium 95%, fine 5%. 10YR7/2 light gray. Damp.
83-85	SP	SAND, medium 90%, coarse 5%, fine 5%. 10YR8/4 very pale brown with spots of 10YR6/6 brownish yellow. Damp.
88-90	SP	SAND, medium 90%, coarse 5%, fine 5%. 10YR6/4 light yellowish brown. Wet.
93-95	SP	SAND, medium 95%, fine 5%. 10YR7/4 very pale brown. Saturated.
-	-	End of split spoon samples at 95 ft. Bottom of boring at 97 ft.

Depths are in feet below land surface.

Descriptions in accordance with Unified Soil Classification System (USCS).

Color in accordance with Munsell Color Chart for soils.

Wellhead protection consists of a 2 ft by 2 ft concrete pad and 4" diameter above-ground steel protective casing with lock.

**TOWN OF TRURO
TRURO BURN DUMP
SOUTH HIGHLAND ROAD**

BORING LOG
MONITORING WELL NO. MW-2
Page 1 of 2

Drilling Company: Dragin Drilling, Inc.	Date Started: Sept 30, 1999
Drill Rig: CME 75	Date Finished: Oct 1, 1999
Drilling Method: 4.25" ID, 8" OD Hollow Stem Auger	Geologist: Andrew M. Miller
Sampling Method: Split Spoon	Driller: George Henner

DEPTH	USCS CODE	DESCRIPTION
8-10	SP	SAND, medium 85%, coarse 10%; fine 5%. 7.5YR6/8 reddish yellow. Damp.
18-20	SP	SAND, medium 100%. Alternating layers of 7.5YR5/8 strong brown and 7.5YR7/4 pink; layers are 0.25" to 0.5" thick; no lithology change with color change. Damp.
28-30	SP	SAND, same as 18-20, but fine rounded gravel present (<1%). Damp.
38-40	SP	SAND, medium 95%, fine 5%, fine rounded gravel present, but <1%. 10YR4/6 dark yellowish brown. Damp.
48-50	SP	SAND, medium 75%, coarse 25%. 2.5Y5/3 light olive brown with a 0.5" thick layer of 2.5Y4/2 dark grayish brown; no lithology change with color change. Damp.
58-60	SP	SAND, medium 90%, fine 10%,. 10YR7/3 very pale brown except for a 1" thick layer of 10YR3/4 dark yellowish brown at 59.5; no lithology change with color change. Damp.
68-70	SP	SAND, fine 90%, medium 5%, Silt 5%. 10YR6/6 brownish yellow with some streaks of 7.5YR6/6 reddish yellow; no lithology change with color change. Damp.
78-80	SP SP	78-79: SAND, medium 90%, fine 10%, coarse present, but <1%. 7.5YR7/3 pink. Damp. 79-80: SAND, fine 95%, Silt 5%. Color: alternating layers of 7.5YR7/3 pink (1" thick) and 7.5YR5/8 strong brown (0.1" thick). Damp.
88-90	SP	SAND, fine to medium 100%, coarse sand and fine gravel present, but <1%. 7.5YR7/4 pink with occasional streaks of 7.5YR5/6 strong brown. Damp.

**TOWN OF TRURO
TRURO BURN DUMP
SOUTH HIGHLAND ROAD**

BORING LOG
MONITORING WELL NO. MW-2
Page 2 of 2

DEPTH	USCS CODE	DESCRIPTION
98-100	SP	SAND, medium 85%, coarse 10%, fine 5%, fine rounded gravel present, but <1%. SILT layer, approx 0.2" at 98.5 ft (silt 70% and fine sand 30%). 10YR5/6 yellowish brown. Damp.
108-110	SP	108-109: SAND, medium 95%, fine and coarse 5%. 10YR4/4 dark yellowish brown. Wet. 109-110: SAND, medium 60%, fine 40%. 2.5Y5/6 light olive brown. Wet.
-	-	End of split spoon samples at 110 ft. Bottom of boring at 110 ft.

Depths are in feet below land surface.

Descriptions in accordance with Unified Soil Classification System (USCS).

Color in accordance with Munsell Color Chart for soils.

Wellhead protection consists of a 2 ft by 2 ft concrete pad and 4" diameter above-ground steel protective casing with lock.

**TOWN OF TRURO
TRURO BURN DUMP
SOUTH HIGHLAND ROAD**

BORING LOG
MONITORING WELL NO. MW-3
Page 1 of 2

Drilling Company: Dragin Drilling, Inc.	Date Started: Oct 1, 1999
Drill Rig: CME 75	Date Finished: Oct 1, 1999
Drilling Method: 4.25" ID, 8" OD Hollow Stem Auger	Geologist: Andrew M. Miller
Sampling Method: Split Spoon	Driller: George Henner

DEPTH	USCS CODE	DESCRIPTION
8-10	SP	SAND, medium 100%, fine and coarse present, but <1%. 10YR6/6 brownish yellow. Damp.
18-20	SP	SAND, medium 95%, fine 5%. 10YR6/8 brownish yellow. Damp.
28-30	SP	SAND, medium 100%, fine and coarse present, but <1%, a few pieces of fine rounded gravel also present. 10YR5/8 yellowish brown (28-29) and 10YR4/6 dark yellowish brown (29-30); no lithology change with color change. Damp.
38-40	SP	SAND, medium 95%, fine 5%. 10YR6/4 light yellowish brown. Damp.
48-50	SP	SAND, medium 100%. 10YR6/6 brownish yellow with occasional streaks of 10YR8/6 yellow; no lithology change with color change. Damp.
58-60	SP	58-59: SAND, fine to medium 100%. 10YR6/6 brownish yellow. 59-60: SAND, fine 60%, medium 40% with one layer of SAND, fine 75% and Silt 25%. 10YR7/4 very pale brown. Damp.
68-70	SP	SAND, medium 90%, coarse 2%, fine to medium rounded gravel 8%. 5YR5/6 yellowish red. Damp.
78-80	SP	SAND, medium 95%, fine and coarse 5%. 10YR7/4 very pale brown with some mottling of 10YR5/6 yellowish brown. Damp.
88-90	SP	SAND, medium 100%, coarse present, but <1%. 2.5Y7/4 pale yellow. Damp.

**TOWN OF TRURO
TRURO BURN DUMP
SOUTH HIGHLAND ROAD**

BORING LOG
MONITORING WELL NO. MW-3
Page 2 of 2

DEPTH	USCS CODE	DESCRIPTION
98-100	SP	SAND, same as 88-90. Damp.
108-110	SP	SAND, fine 60%, medium 35%, Silt 5%. 2.5Y6/4 light yellowish brown. Saturated.
-	-	End of split spoon samples at 110 ft. Bottom of boring at 112 ft.

Depths are in feet below land surface.

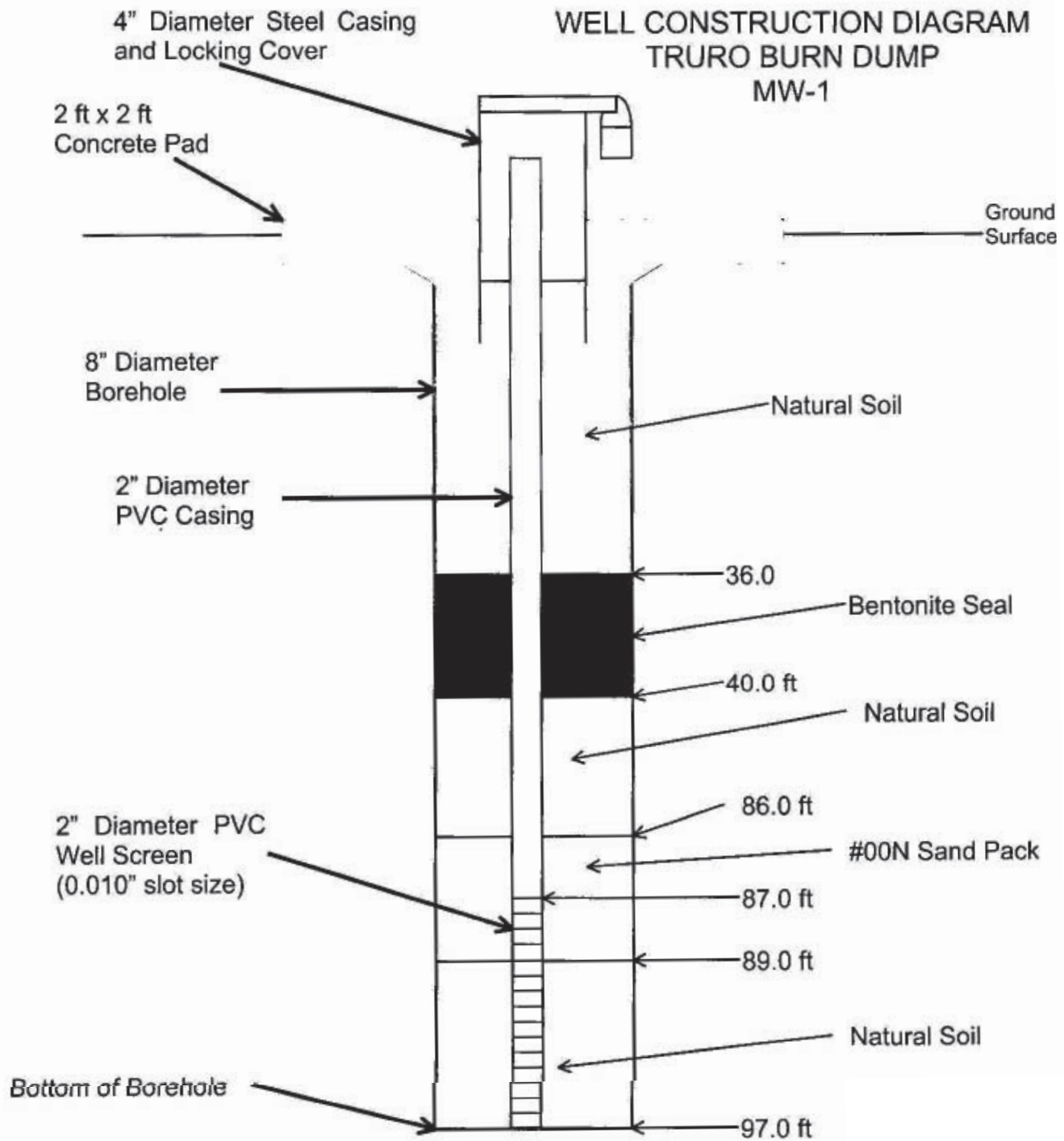
Descriptions in accordance with Unified Soil Classification System (USCS).

Color in accordance with Munsell Color Chart for soils.

Wellhead protection consists of a 2 ft by 2 ft concrete pad and 4" diameter above-ground steel protective casing with lock.

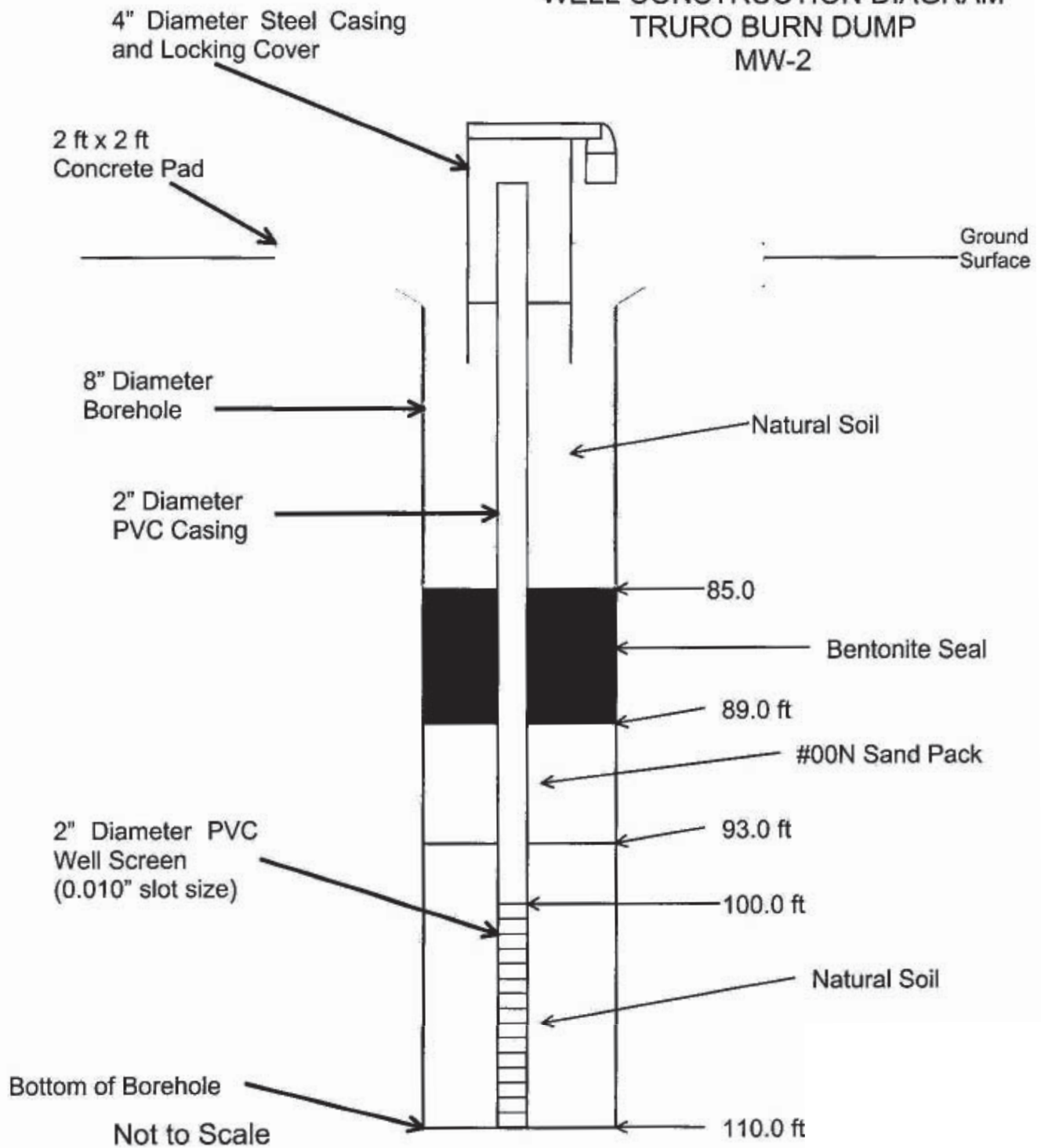
Appendix C – Monitoring Well Construction Logs

WELL CONSTRUCTION DIAGRAM
TRURO BURN DUMP
MW-1

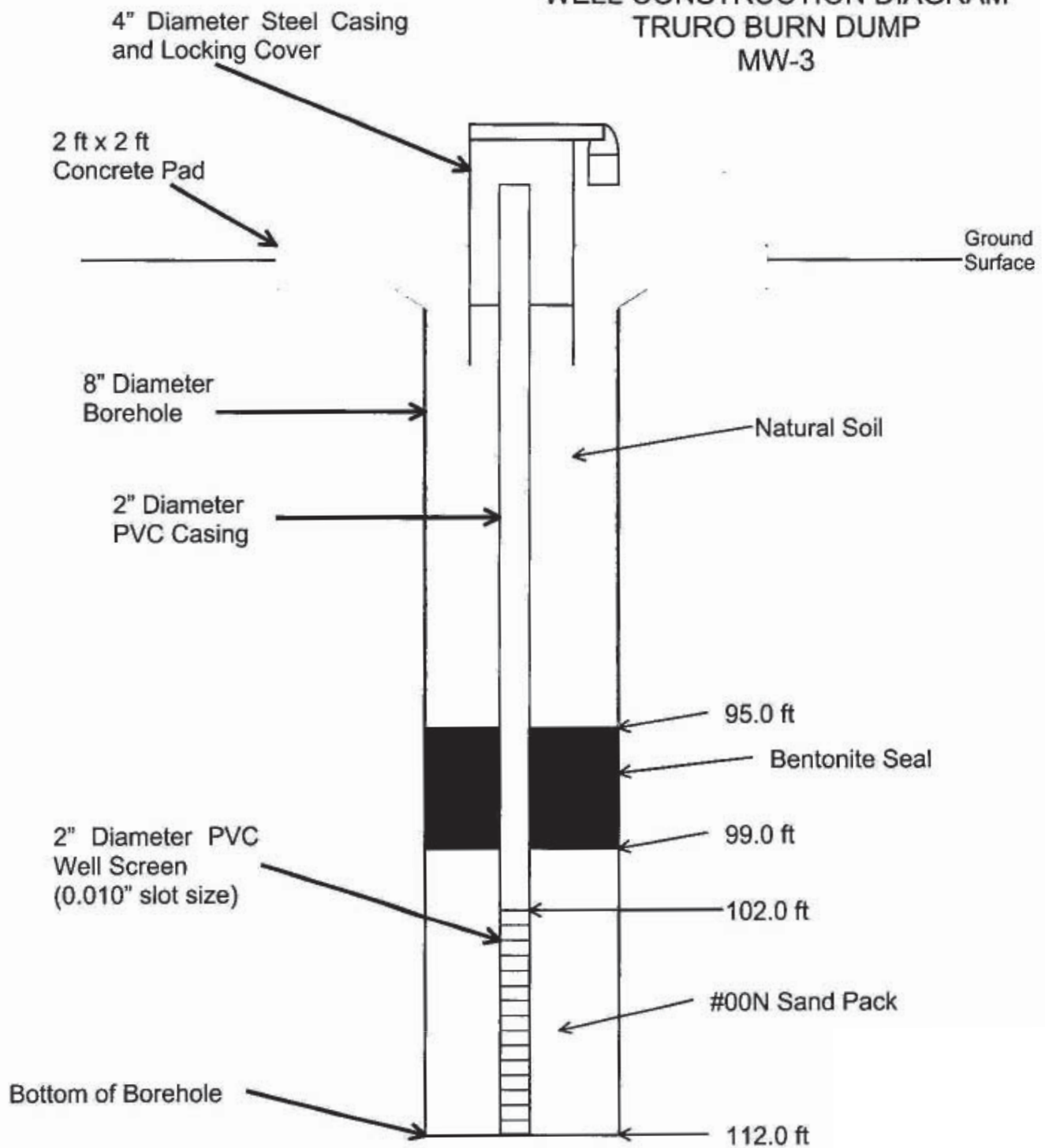


Not to Scale

WELL CONSTRUCTION DIAGRAM
TRURO BURN DUMP
MW-2



WELL CONSTRUCTION DIAGRAM
TRURO BURN DUMP
MW-3



Not to Scale

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By MNW **Date:** 9/27/99
Checked By: **Date:**

Test Pit No: TP-1

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 9:00
Time completed: 9:07

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			Very minor traces of litter at surface reddish-brown, tan sands.	Easy	None		
4							
6							

Bottom of Excavation @ 6'

8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

Pit Dimensions: 6 feet long x 3 feet wide x 6 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By MNW **Date:** 9/27/99
Checked By: **Date:**

Test Pit No: TP-2

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 9:10
Time complete: 9:20

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			Loam & sand, dark brown, broken glass, no odor, some metal	Easy			1
4							
6			Light orange sand				
8							

Bottom of Excavation @ 8'

10							
12							
14							
16							
18							
20							
22							

REMARKS:

1. Trench excavated 50'L x 3'W x 3' D to TP-3. Dark brown sand with glass and metal to 2.5' depth underlain by orange sand, little silt, consistently found along trench. Refuse material included box springs, possible crushed drum, few bricks.

Pit Dimensions: feet long x feet wide x feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

[illegible]

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By MNW **Date:** 9/27/99
Checked By: **Date:**

Test Pit No: TP-4

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started 9:35
Time comple 9:40

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		none	Brown material: glass, metal, dark brown sand and ash. No odor	Easy			1, 2
4							
6			Orange sand, no slit				
8							
10			Bottom of Excavation @ 8'				
12							
14							
16							
18							
20							
22							

REMARKS:

- Burn material(glass and occasional piece of metal) encountered to 2-3' depth, underlain by orange sand.
- TP-4 at location of EPG-S1

Pit Dimensions: feet long x feet wide x feet deep

LEGEND

Boulder Count

Size Range	Letter
6"- 18"	A
18"- 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro

Location: S. Highland Rd. Lf

Client: Town of Truro

Contractor/Operator: DPW

Equipment: CAT 312 Backhoe

Capacity/Reach: 16'

Weather: Clear

Performed By MNW

Date:

9/27/99

Checked By:

Date:

Test Pit No: **TP-5**

Location: See Figure 2

Approx. Ground Elevation:

Datum:

Project No.

Time Started: 9:40

Time complete: 9:50

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			Loam, dark brown, no refuse material Orange sand	Easy			1
4			Bottom of Excavation @ 2'				
6							
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

1. At end of trench from TP-4

Pit Dimensions: feet long x feet wide x feet deep

LEGEND

Boulder Count

Size Range Letter

6"- 18" A

18"- 36" B

36" Plus C

Excavation Effort

E = Easy

M = Moderate

D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By: MNW
Checked By:

Date: 9/27/99
Date:

Test Pit No: TP-6

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 9:55
Time complete: 10:15

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			Burn dump material Dark grey-black sand and ash material, glass; occasional metal	Easy			1, 2
4							
6							
8							
10			Orange sand				

Bottom of Excavation @ 10'

12							
14							
16							
18							
20							
22							

REMARKS:

1. Trench excavated to TP-7. Approx 10' L x 3' W x 10' D. Burn material consistently encountered
2. TP-6 at same location of EPG-S4

Pit Dimensions: feet long x feet wide x feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By: MNW
Checked By:

Date: 9/27/99
Date:

Test Pit No: TP-7

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 10:20
Time complete: 10:40

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			0-9' burn material: glass, metal, ash A horizon of unburned material at 2.5 - 5.0. Some concrete, concrete posts. Possible remnant of stove, Black material possibly tar?				1
4							
6							
8							
10			Orange sand				
12			Bottom of Excavation @ 10'				
14							
16							
18							
20							
22							

REMARKS:

1. TP-7 at location of EPG-S5

Pit Dimensions: feet long x feet wide x feet deep

LEGEND

Boulder Count

Size Range	Letter
6"- 18"	A
18"- 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

[illegible]

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By MNW **Date:** 9/27/99
Checked By: **Date:**

Test Pit No: TP-9

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 12:30
Time comple 12:40

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			Burn material, glass ash, plastic steel cable, metal pipe, brown sand				
4							
6							
8							
10							
12							
14							
16							
18		None	Orange sand.	E			
20			Bottom of Excavation @ 18'				
22							

REMARKS:

1. Excavation is approx 100' from house

Pit Dimensions: 20 feet long x 4 feet wide x 18 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG															
Project: Truro Location: S. Highland Rd. Lf Client: Town of Truro Contractor/Operator: DPW Equipment: CAT 312 Backhoe Capacity/Reach: 16' Weather: Clear Performed By MNW Checked By:					Test Pit No: TP-10 Location: See Figure 2 Approx. Ground Elevation: Datum: Project No. Time Started: 12:40 Time complete: 12:50										
					Date: 9/27/99										
					Date:										
Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.								
					Qty.	Class									
2		None	Tan-brown sand, sand fill material	E			1								
4															
6			Burn dump material, glass, metal, ash	E											
8															
10		None	Orange sand, filter	E											
12			Bottom of Excavation @ 10'												
14															
16															
18															
20															
22															
<u>REMARKS:</u> 1. TP-10 at location of EPG-S7					LEGEND <u>Boulder Count</u> <table style="width: 100%;"> <tr> <td style="text-align: left;">Size Range</td> <td style="text-align: left;">Letter</td> </tr> <tr> <td>6"- 18"</td> <td>A</td> </tr> <tr> <td>18"- 36"</td> <td>B</td> </tr> <tr> <td>36" Plus</td> <td>C</td> </tr> </table> <u>Excavation Effort</u> E = Easy M = Moderate D = Difficult			Size Range	Letter	6"- 18"	A	18"- 36"	B	36" Plus	C
Size Range	Letter														
6"- 18"	A														
18"- 36"	B														
36" Plus	C														
<u>Pit Dimensions:</u> 15 feet long x 3 feet wide x 10 feet deep															

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By: MNW
Checked By:

Date: 9/27/99
Date:

Test Pit No: TP-11

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 12:50
Time complete: 13:00

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Sand fill material	E			
4							
6			Burn dump material: glass, metal, concrete block, dark brown sands ash material	E			
8			Bottom of Excavation @ 8'				
10							
12							
14							
16							
18							
20							
22							

REMARKS:

Pit Dimensions: 8 feet long x 3 feet wide x 8 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By: MNW **Date:** 9/27/99
Checked By: **Date:**

Test Pit No: TP-12

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 12:55
Time complete: 13:00

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Sand and loam, tan-dark brown	E			
4			Ash-pink and red, burn material: rocks, little glass				1
6							
8			Lt. Grey sand, orange sand				
10			Bottom of Excavation @ 8'				
12							
14							
16							
18							
20							
22							

REMARKS:

1. Appears to be coming out of refuse.

Pit Dimensions: 6 feet long x 3 feet wide x 8 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG							
Project: Truro Location: S. Highland Rd. Lf Client: Town of Truro Contractor/Operator: DPW Equipment: CAT 312 Backhoe Capacity/Reach: 16' Weather: Clear Performed By MNW Date: 9/27/99 Checked By: Date:						Test Pit No: TP-13 Location: See Figure 2 Approx. Ground Elevation: Datum: Project No. Time Started: 13:00 Time comple 13:10	
Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Lt. Brown- dark brown sand with some glass and refuse	E			1
		None	Tan sand				
4			Bottom of Excavation @ 3'				
6							
8							
10							
12							
14							
16							
18							
20							
22							
REMARKS: 1. Fill material looks to be limited to edge of tree line. Pit Dimensions: 6 feet long x 3 feet wide x 3 feet deep					LEGEND Boulder Count Size Range Letter 6"- 18" A 18"- 36" B 36" Plus C Excavation Effort E = Easy M = Moderate D = Difficult		

[illegible]

[illegible]

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By MNW **Date:** 9/27/99
Checked By: **Date:**

Test Pit No: TP-16

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 13:30
Time comple: 13:40

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			Burn material, cable, metal Layer of ash material, white from 5'-8', Brown sand material.	E			
4							
6							
8							
10							
12							
14							
16							

18			Bottom of Excavation @ 16'				
20							
22							

REMARKS:

Pit Dimensions: 10 feet long x 3 feet wide x 16 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: Clear
Performed By: MNW
Checked By:

Date: 9/27/99
Date:

Test Pit No: TP-17

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 13:35
Time complete: 13:40

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
			Grey sand	E			1
2			Orange sand	E			
4			Dark brown sand and burned refuse. Metal, steel, cable, metal pipe, some glass				
6							
8			Orange sand				
10			Bottom of Excavation @ 8'				
12							
14							
16							
18							
20							
22							

REMARKS:

1. Approx 20' N of stockade fence. On edge of tree line. Didn't come out of refuse, but beginning to turn out.

Pit Dimensions: 8 feet long x 3 feet wide x 8 feet deep

LEGEND

Boulder Count

Size Range	Letter
6"- 18"	A
18"- 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG							
Project: Truro Location: S. Highland Rd. Lf Client: Town of Truro Contractor/Operator: DPW Equipment: CAT312 Backhoe Capacity/Reach: 16' Weather: Clear Performed By: MNW Date: 9/27/99 Checked By: Date:				Test Pit No: TP-18 Location: See Figure 2 Approx. Ground Elevation: Datum: Project No. Time Started: 13:40 Time complete: 13:45			
Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Black-brown sand some traces of burn dump material	E			
4		None	Orange sand				
6			Bottom of Excavation @ 5'				
8							
10							
12							
14							
16							
18							
20							
22							
REMARKS: Pit Dimensions: 6 feet long x 3 feet wide x 5 feet deep					LEGEND Boulder Count Size Range Letter 6" - 18" A 18" - 36" B 36" Plus C Excavation Effort E = Easy M = Moderate D = Difficult		

EXPLORATORY TEST PIT LOG

13:55

[illegible]

D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: High Clds, 70's.
Performed By: MNW / AM
Checked By:

Date: 9/28/99
Date:

Test Pit No: TP-20

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 7:10
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, little silt	E			1
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

1. TP-20 @ same location as EPG-S3

Pit Dimensions: feet long x feet wide x 4' feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
 Location: S. Highland Rd. LF
 Client: Town of Truro
 Contractor/Operator: DPW
 Equipment: CAT 312 Backhoe
 Capacity/Reach: 16'
 Weather: High clouds, 70's
 Performed By: MNW / AM
 Checked By:

Date: 9/28/99
 Date:

Test Pit No: **TP-21**

Location: See Figure 2
 Approx. Ground Elevation:
 Datum:
 Project No.
 Time Started:
 Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange -brown sand, No silt				
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

Pit Dimensions: feet long x feet wide x 4' feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: High Clds, 70's.
Performed By: MNW / AM
Checked By:

Date: 9/28/99
Date:

Test Pit No: TP-22

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started:
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2			Grey sand and silt				1,2,3
4							
6		None	Orange-brown sand				
8							
10			Bottom of Excavation @ 8'				
12							
14							
16							
18							
20							
22							

REMARKS:

- TP-22 at same location as EPG-S6
- Grey sand may be street sweepings
- EPG-S6 sampled from pile excavated from TP-22; from only within the grey sand & silt (0-4').

Pit Dimensions: feet long x feet wide x 8 feet deep

LEGEND

Boulder Count
 Size Range Letter
 6" - 18" A
 18" - 36" B
 36" Plus C
Excavation Effort
 E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd, Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: High Clds, 70's.
Performed By: MNW / AM
Checked By:

Date: 9/28/99
Date:

Test Pit No: TP-23

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started:
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, No silt				
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

Pit Dimensions: feet long x feet wide x 4 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

[illegible]

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: CAT 312 Backhoe
Capacity/Reach: 16'
Weather: High Clds, 70's
Performed By: MNW / AM
Checked By:

Date: 9/28/99
Date:

Test Pit No: TP-25

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started:
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, No silt				1
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

1. Located approximately 30-35' northwest of MW-3.

Pit Dimensions: feet long x feet wide x feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG							
Project: Truro Location: S. Highland Rd. Lf Client: Town of Truro Contractor/Operator: DPW Equipment: JD 310B Backhoe Capacity/Reach: 16' Weather: Cloudy, 40's. Performed By: PAM Date: 2/7/00 Checked By: Date:				Test Pit No: TP-26 Location: See Figure 2 Approx. Ground Elevation: Datum: Project No. Time Started 9:00 Time completed:			
Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2 4		None	Orange-brown sand, little silt	E			1
6 8 10 12 14 16 18 20 22			Bottom of Excavation @ 4'				
REMARKS: 1. TP-26 located approximately 80' from nearest dwelling. Pit Dimensions: 5 feet long x 3 feet wide x 4 feet deep					LEGEND <u>Boulder Count</u> Size Range Letter 6"- 18" A 18"- 36" B 36" Plus C <u>Excavation Effort</u> E = Easy M = Moderate D = Difficult		

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: JD 310B Backhoe
Capacity/Reach: 16'
Weather: Cloudy, 40's.
Performed By: PAM
Checked By:

Date: 2/7/00
Date:

Test Pit No: TP-27

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 9:15
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, little silt	E			1
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

1. TP-27 located approximately 50' from South Highland Rd.

Pit Dimensions: 5 feet long x 3 feet wide x 4 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: JD 310B Backhoe
Capacity/Reach: 16'
Weather: Cloudy, 40's.
Performed By: PAM
Checked By:

Date: 2/7/00
Date:

Test Pit No: TP-28

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started 9:40
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, little silt	E			1
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

- TP-28 located approximately 30' outside of refuse.

Pit Dimensions: 5 feet long x 3 feet wide x 4 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG							
Project: Truro Location: S. Highland Rd. Lf Client: Town of Truro Contractor/Operator: DPW Equipment: JD 310B Backhoe Capacity/Reach: 16' Weather: Cloudy, 40's. Performed By PAM Date: 2/7/00 Checked By: Date:				Test Pit No: TP-29 Location: See Figure 2 Approx. Ground Elevation: Datum: Project No. Time Started 10:00 Time completed:			
Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, little silt	E			1
4			Bottom of Excavation @ 4'				
6							
8							
10							
12							
14							
16							
18							
20							
22							
REMARKS: 1. TP-29 located approximately 50' from South Highland Rd. Pit Dimensions: 5 feet long x 3 feet wide x 4 feet deep					LEGEND Boulder Count Size Range Letter 6"- 18" A 18"- 36" B 36" Plus C Excavation Effort E = Easy M = Moderate D = Difficult		

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: JD 310B Backhoe
Capacity/Reach: 16'
Weather: Cloudy, 40's.
Performed By: PAM
Checked By:

Date: 2/7/00
Date:

Test Pit No: TP-30

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 10:30
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, little silt	E			1
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

1. TP-30 located approximately 50' north of MW-2.

Pit Dimensions: 9 feet long x 3 feet wide x 4 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Project: Truro
Location: S. Highland Rd. Lf
Client: Town of Truro
Contractor/Operator: DPW
Equipment: JD 310B Backhoe
Capacity/Reach: 16'
Weather: Cloudy, 40's.
Performed By: PAM
Checked By:

Date: 2/7/00
Date:

Test Pit No: TP-31

Location: See Figure 2
Approx. Ground Elevation:
Datum:
Project No.
Time Started: 10:50
Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Orange-brown sand, little silt	E			1
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

1. TP-31 located approximately 30' outside of refuse.

Pit Dimensions: 5 feet long x 3 feet wide x 4 feet deep

LEGEND

Boulder Count

Size Range	Letter
6" - 18"	A
18" - 36"	B
36" Plus	C

Excavation Effort

E = Easy
 M = Moderate
 D = Difficult

EXPLORATORY TEST PIT LOG

Time completed:

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2 4		None	Dark-brown/black sand and burn dump material (glass, brick, metal, ash, etc.)	M			1
6 8 10 12 14 16 18 20 22			Bottom of Excavation @ 4'				

D = Difficult

EXPLORATORY TEST PIT LOG

Project:	Truro							Test Pit No: TP-33								
Location:	S. Highland Rd. Lf															
Client:	Town of Truro									Location: See Figure 2						
Contractor/Operator:	DPW									Approx. Ground Elevation:						
Equipment:	JD 310B Backhoe									Datum:						
Capacity/Reach:	16'									Project No.						
Weather:	Cloudy, 40's.									Time Started: 11:50						
Performed By	PAM	Date:	2/7/00								Time completed:					
Checked By:		Date:														

Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2		None	Dark-brown/black sand and burn dump material (glass, brick, metal, ash, etc.)	M			1
4							
6			Bottom of Excavation @ 4'				
8							
10							
12							
14							
16							
18							
20							
22							

REMARKS:

- TP-33 located within limit of refuse.

LEGEND

Boulder Count

Size Range	Letter
6"- 18"	A
18"- 36"	B
36" Plus	C

Excavation Effort

E = Easy

M = Moderate

D = Difficult

Pit Dimensions: 5 feet long x 3 feet wide x 4 feet deep

[illegible]

EXPLORATORY TEST PIT LOG							
Project: Truro Location: S. Highland Rd. Lf Client: Town of Truro Contractor/Operator: DPW Equipment: JD 310B Backhoe Capacity/Reach: 16' Weather: Cloudy, 40's. Performed By: PAM Date: 2/7/00 Checked By: Date:				Test Pit No: TP-35 Location: See Figure 2 Approx. Ground Elevation: Datum: Project No. Time Started: 12:45 Time completed:			
Depth of Strata Change (feet)	Sample No.	Groundwater Observation	Soil Description	Excavation Effort	Boulder Count		Remark No.
					Qty.	Class	
2 4		None	Dark-brown/black sand and burn dump material (glass, brick, metal, ash, etc.)	M			1
6 8 10 12 14 16 18 20 22			Bottom of Excavation @ 4'				
REMARKS: 1. TP-34 located within limit of refuse and approx. 100 feet from dwelling. Pit Dimensions: 5 feet long x 3 feet wide x 4 feet deep					LEGEND Boulder Count Size Range Letter 6"- 18" A 18"- 36" B 36" Plus C Excavation Effort E = Easy M = Moderate D = Difficult		

TABLE 1 - PAH and Total Lead Analysis on soil samples from the Truro So. Highland Road L.F
Samples collected on September 28, 1999 & February 7, 2000

Test Pit Location Sample ID, No. Comments	MCP Method 1 S-1/GV-1 Standard	TP-4 EPG S1	TP-3 EPG S2	TP-20 EPG S3	TP-6 EPG S4	TP-7 EPG S5	TP-22 EPG S6	TP-10 EPG S7	TP-15 EPG S8	TP-18 EPG S9	TP-25 EPG S10	TP 26	TP 27	TP 28	TP 29	TP 30	TP 31	TP 32	TP 33	TP 34	TP 35	SITE WIDE AVE
<i>Polynuclear Aromatic Hydrocarbons (PAHs) by Method 8270 (ug/kg)</i>																						
Acenaphthylene	100,000	165	180	165	170	760	165	170	175	175	170	165	170	175	165	170	170	185	175	180	170	201.0
Phenanthrene	700,000	165	1100	165	170	360	165	170	175	1300	170	165	170	175	165	170	170	185	175	180	15000	1024.8
Anthracene	1,000,000	165	180	165	170	175	165	170	175	175	170	165	170	175	165	170	170	185	175	180	3500	338.3
Fluoranthene	1,000,000	165	2500	165	170	490	450	170	175	2500	170	165	170	175	165	170	170	185	175	180	30000	1925.5
Pyrene	700,000	165	2300	165	170	1100	330	170	175	1700	170	165	170	175	165	170	170	185	175	180	20000	1400.0
Benzo(a)anthracene	700	165	1300	165	170	175	165	170	175	1000	170	165	170	175	165	170	170	185	175	180	14000	960.5
Chrysene	7,000	165	1300	165	170	470	165	170	175	1000	170	165	170	175	165	170	170	185	175	180	11000	825.3
Benzo(b)fluoranthene	700	75	2100	75	75	2100	350	75	75	2200	75	165	75	175	165	75	75	185	175	180	16000	1223.5
Benzo(k)fluoranthene	7,000	165	690	165	170	660	165	170	175	880	170	165	170	175	165	170	170	185	175	180	5400	518.3
Benzo(a)pyrene	700	165	1500	165	170	1800	165	170	175	1100	170	165	170	175	165	170	170	185	175	180	13000	1006.8
Indeno(1,2,3-cd)pyrene	700	165	540	165	170	175	165	170	175	175	170	165	170	175	165	170	170	185	175	180	8600	611.3
Dibenzo(a,h)anthracene	700	165	180	165	170	175	165	170	175	175	170	165	170	175	165	170	170	185	175	180	2200	273.3
Benzo(g,h,i)perylene	1,000,000	165	430	165	170	175	165	170	175	175	170	165	170	175	165	170	170	185	175	180	7600	555.8
<i>Lead (EPA 200.7/6010 Metal Analysis)</i>																						
Total Lead (mg/Kg)	300	5.0	810	5.5	20	660	45	93	64	210	5.5											191.9

Notes:
1 170 = Not Detected / Calculate Site Wide Average using 1/2 Reporting Limit or Method Detection Limit (whichever is less)
2 ug/kg = micrograms per kilogram (approximately equal to part per billion (ppb))
3 810 = Bold indicates result that exceeds the MCP Method 1 Standard.
4 Soil samples obtained from 1-3' below ground surface (Composite)

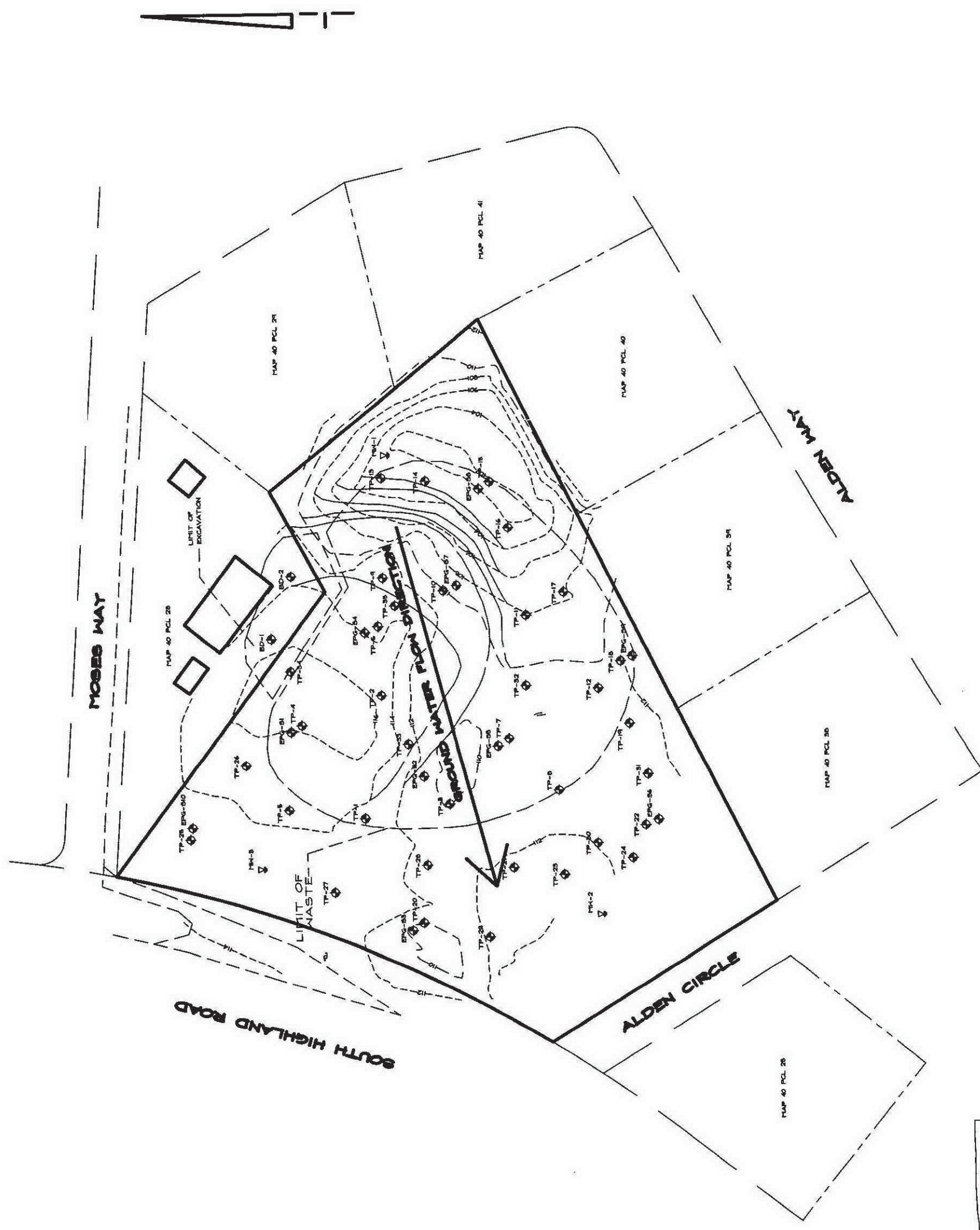
TABLE 2 - VOC, SVOC, Metals, pH, and Spec Cond. Analysis on GW samples from S. Highland Road LF
Samples collected on October 7, 1999

Sample I.D. Comments	MCP Method I GW-1 Standard	MW-1	MW-2	MW-3
Volatile Organics ($\mu\text{g/L}$)		BRL	BRL	BRL
Semivolatile Organics ($\mu\text{g/L}$)		BRL	BRL	BRL
pH		5.4	6.0	6.1
Spec Cond ($\mu\text{mhos/cm @ } 25^\circ\text{C}$)		90	96	110
Metals		BRL	29	BRL
Copper ($\mu\text{g/L}$)	NS	BRL	9	BRL
Lead ($\mu\text{g/L}$)	15	BRL		
NS = No Standard Listed BRL = Below Reporting Limit $\mu\text{g/L}$ = micrograms per Litre (approximately equal to part per billion (ppb))				

**TABLE 3 - Groundwater Elevations from So. Highland Road LF
Elevations taken on October 7, 1999 and October 17, 1999**

WELL NUMBER	TOC	October 7, 1999		October 17, 1999	
		DTW	WT ELEV	DTW	WT ELEV
MW-1	100.20	91.92	8.28	91.92	8.28
MW-2	113.26	105.27	7.99	105.31	7.95
MW-3	111.75	103.77	7.98	103.81	7.94
NOTES: 1. TOC is the Elevation of the top of casing, based on an assumed elevation of 110.00 feet above sea level at an iron pin in the center of Moses Way at the intersection of South Highland Road. 2. DTW is the depth to water (in feet) measured from the top of casing. DTW measurements were made during a 10 minute time interval to minimize the potential effects of tidal fluctuations. 3. WT ELEV is the elevation of the water table (in feet)					

SOUTH HIGHLAND BURN DUMP	
PHASE IV AS-BUILT REPORT	
FIGURE 1	
DESCRIPTION:	
DETAILED SITE PLAN FROM PHASE IV RIP	
SCALE	HORIZ. 1"=80'
DATE: APRIL 2005	
SYMBOLS	
TP-1	TEST PIT LOCATION
EPG-S1	SOIL SAMPLE LOCATION
	MONITORING WELL
NOTES:	
1. SOLID CONTOURS REFLECT CURRENT TOPO DUE TO WASTE CONSOLIDATION FROM OFF SITE.	
2. LIMIT OF OFF SITE WASTE RELOCATED DURING WASTE EXCAVATION AND RELOCATION IS SHOWN ON ADJACENT PARCEL.	
3. SAMPLE POINTS BD-1 AND BD-2 ARE CONFIRMATORY SAMPLES COLLECTED TO DEMONSTRATE ALL WASTE CONTAMINATED SOIL REMOVED FROM OFF SITE PARCEL.	
east cape engineering, inc. CIVIL ENGINEERS LAND SURVEYORS 44 RTE 28 ORLEANS, MA TEL: (508) 255-7120	





TOWN OF TRURO

HEALTH DEPARTMENT

P.O. Box 2030, Truro MA 02666

Tel: 508-349-7004 Fax: 508-349-5508

WELL PERMIT APPLICATION

Construction/Replacement Fee: \$50.00

Decommission Fee: \$25.00

ENTERED

Application Date: 9/9/2009 Authority c/o Art Huttin
Owner's Name: Truro Housing Project
Property Location: 25 South Highland Rd (Lot 1) Map 40 Parcel 167
Well Driller: Desmond Well Drilling Phone: 508 240 1000
Mailing Address: P.O. Box 2783 Town/State/Zip: Orleans MA 02653

Well Completion Report:

Well Use: ☒ New Domestic ☐ Replacement Domestic ☐ Decommissioned Well(public or domestic) ☐ Public Water Supply ☐ Monitoring ☐ Irrigation

☐ Geothermal (for Ground Source Heat Pumps) Type of System: ☐ closed-loop ☐ open
Geothermal wells under 15,000 gpd must be registered with MassDEP. Systems in excess of
15,000 gpd require a MassDEP National Pollution Discharge Elimination System (NPDES) permit.

Casing Type: PVC Diameter (inches) and Length 4" x 120'Total Well Depth: 120' Screen Slot # _____ Length _____ from _____ to _____

Static Water Level below land surface: _____ ft.

Water test submitted: ☐ Yes ☐ No

Water sample must be tested by a Certified Laboratory for: • Coliform • pH • Conductivity • Iron • Nitrates
• Sodium • Volatile Organic Compounds (VOCs)

(This section to be completed by the Truro Health Department)

Well Permit Number: 09-024 Date Issued: _____

Water Analysis Received: _____

Registration Number or NPDES permit for Geothermal Wells Received: _____

Building Permit Number (if applicable): _____

Reviewing Health Agent: _____

(signature)



Massachusetts Department of Conservation and Recreation
Office of Water Resources
Well Completion Report

21-SEP-09 10:41:29

WELL LOCATION

264286

GPS North: 42° 1.506' GPS West: -70° 41.128'

Address: 25-1, South Highland Road

Subdivision Name:

City/Town: Truro

Assessors Map: 40

Board of Health permit obtained: Y



Property Owner/Client: c/o Art Hultin

Mailing Address: P.O. Box 504

City/Town, State: North Truro MA

Assessors Lot #: 167

Permit Number: 09-024

Date Issued: 09/09/2009

Work Performed

New Well

Proposed use

Domestic

Drilling Method Overburden

Auger

Drilling Method Bedrock

CASING

From (ft)	To (ft)	Type	Thickness	Diameter
1.00	-117.00	PVC	Schedule 40	4.00

SCREEN

From (ft)	To (ft)	Type	Slot Size	Diameter
-117.00	-121.00	Stainless Steel Well Point	.010	4.00

WELL SEAL / FILTER PACK / ABANDONMENT MATERIAL

From (ft)	To (ft)	Material Description	Purpose
-----------	---------	----------------------	---------

WELL TEST DATA (ALL SECTIONS MANDATORY FOR PRODUCTION WELLS)

Date	Method	Yield (GPM)	Time Pumped (hrs & min)	Pumping Level (Ft. BGS)	Time to Recover (Hrs & Min)	Recovery (Ft. BGS)
09/16/2009	Constant Rate Pump	12.0000	1:30	109.0000	0:01	106

STATIC WATER LEVEL (ALL WELLS)

Date	Depth Below Ground
Measured	Surface (ft)
09/16/2009	106

PERMANENT PUMP (IF AVAILABLE)

Pump Description:

Type:

Nominal Pump Capacity:

Intake Depth:

Horsepower:

ADDITIONAL WELL INFORMATION

Developed: Yes Fracture Enhancement: No
Disinfected: Yes Well Seal Type: None
Total Well Depth: 121.000 Depth to Bedrock:

Comments:

WELL DRILLER'S STATEMENT

Driller: Thomas E Desmond III
Supervisor: Thomas Desmond III Rig #: 100
Firm: Desmond Well Drilling Inc.
Registration #: 764 Date Complete: 09/16/2009

OVERBURDEN

From (ft)	To (ft)	Description	Color	Comment	Water Zone	Loss/Add of Fluid	Drill Stem Drop	Drill Rate
.00	45.00	Fine to Coarse Sand	Brown		No	N/A		
45.00	50.00	Cobbles	Brown	& clay	No	N/A		
50.00	121.00	Fine to Coarse Sand	Brown		Yes	N/A		

BEDROCK

From (ft)	To (ft)	Code	Comment	Water Zone	Drill Stem Drop	Extra Large	Drill Rate	Rust Stain	Loss/Add of	# of Frac per ft
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CERTIFICATE OF ANALYSIS

Barnstable County Health Laboratory

Report Prepared For:

Report Dated: 9/17/2009

Sally Desmond

Desmond Well Drilling

P O Box 2783

Orleans, MA 02653

Order No.: G0954675



Laboratory ID #: 0954675-01

Description: Water - Drinking Water

Sample #:

Sampling Location Lot 1 South Highland Rd Truro, MA

Collected: 9/16/2009

Collected by: Customer

Received: 9/16/2009

Test Parameters

ITEM	RESULT	UNITS	RL	MCL	Method #	Tested
Barium	ND	mg/L	0.0020	2.0	EPA 200.7	9/16/2009
Cadmium	ND	mg/L	0.0010	0.005	EPA 200.7	9/16/2009
Chromium	ND	mg/L	0.0020	0.1	EPA 200.7	9/16/2009

Routine

ITEM	RESULT	UNITS	RL	MCL	Method #	Tested
Nitrate as Nitrogen	0.31	mg/L	0.10	10	EPA 300.0	9/16/2009
Copper	ND	mg/L	0.10	1.3	SM 3111B	9/17/2009
Iron	ND	mg/L	0.10	0.3	SM 3111B	9/17/2009
Sodium	14	mg/L	1.0	20	SM 3111B	9/17/2009
Total Coliform	A	P/A	0	0	SM9223	9/16/2009
Conductance	150	umohs/cm	2.0		EPA 120.1	9/16/2009
pH	6.8	pH-units	0		SM 4500 H-B	9/16/2009

Water sample meets the recommended limits for drinking water of all the above tested parameters.

Attached please find the laboratory certified parameter list.

Approved By:

Gongmin Li
(Lab Director)
9/17/09

ND = None Detected

RL = Reporting Limit

MCL = Maximum Contaminant Level

Superior Court House, P.O. Box 427, Barnstable, MA 02630 Ph: 508-375-6605



CERTIFICATE OF ANALYSIS

Report For:

Barnstable County Health Laboratory

Sally Desmond

Report Dated: 9/17/2009

Desmond Well Drilling

Order No.: G0954675

P O Box 2783

Orleans, MA 02653



Laboratory ID #: 0954675-01

Description: Water - Drinking Water

Sample #:

Sampling Location Lot 1 South Highland Rd Truro, MA

Collected: 9/16/2009

Collected by: Customer

Received: 9/16/2009

EPA 524.2 - Volatile Organics by GC/MS

ITEM	RESULT	UNITS	RL	MCL	Method #	Analyst	Tested	Note
Dichlorodifluoromethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Chloromethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Vinyl chloride	ND	ug/L	0.50	2.0	EPA 524.2	yn	9/16/2009	
Bromomethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,1,1-Trichloroethane	ND	ug/L	0.50	200	EPA 524.2	yn	9/16/2009	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,1,2-Trichloroethane	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	
1,1-Dichloroethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,1-Dichloroethene	ND	ug/L	0.50	7.0	EPA 524.2	yn	9/16/2009	
1,1-Dichloropropene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,2,3-Trichlorobenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,2,3-Trichloropropane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,2,4-Trichlorobenzene	ND	ug/L	0.50	70	EPA 524.2	yn	9/16/2009	Note
1,2,4-Trimethylbenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,2-Dichlorobenzene	ND	ug/L	0.50	600	EPA 524.2	yn	9/16/2009	
1,2-Dichloroethane	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	
1,2-Dichloropropane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,3,5-Trimethylbenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,3-Dichlorobenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,3-Dichloropropane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
1,4-Dichlorobenzene	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	
2,2-Dichloropropane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
2-Chlorotoluene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
4-Chlorotoluene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Benzene	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	Note
Bromobenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Bromochloromethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Bromodichloromethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Bromoform	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Carbon tetrachloride	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	

ND = None Detected

RL = Reporting Limit

MCL = Maximum Contaminant Level

Superior Court House, P.O. Box 427, Barnstable, MA 02630 Ph: 508-375-6605



CERTIFICATE OF ANALYSIS

Report For:
Sally Desmond
Desmond Well Drilling
P O Box 2783
Orleans, MA 02653

Barnstable County Health Laboratory

Report Dated: 9/17/2009

Order No.: G0954675



Laboratory ID #: 0954675-01

Description: Water - Drinking Water

Sample #:

Sampling Location: Lot 1 South Highland Rd Truro, MA

Collected: 9/16/2009

Collected by: Customer

Received: 9/16/2009

EPA 524.2 - Volatile Organics by GC/MS

ITEM	RESULT	UNITS	RL	MCL	Method #	Analyst	Tested	Note
Chlorobenzene	ND	ug/L	0.50	100	EPA 524.2	yn	9/16/2009	
Chloroethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Chloroform	ND	ug/L	0.50	80	EPA 524.2	yn	9/16/2009	
cis-1,2-Dichloroethene	ND	ug/L	0.50	70	EPA 524.2	yn	9/16/2009	
cis-1,3-Dichloropropene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Dibromochloromethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Dibromomethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Ethylbenzene	ND	ug/L	0.50	700	EPA 524.2	yn	9/16/2009	
Hexachlorobutadiene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Isopropylbenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Methylene chloride	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	
Methyl-tert-butyl ether	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Naphthalene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
n-Butylbenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
n-Propylbenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
p-Isopropyltoluene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
sec-Butylbenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Styrene	ND	ug/L	0.50	100	EPA 524.2	yn	9/16/2009	
tert-Butylbenzene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Tetrachloroethene	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	
Toluene	ND	ug/L	0.50	1000	EPA 524.2	yn	9/16/2009	
Total xylenes	ND	ug/L	0.50	10000	EPA 524.2	yn	9/16/2009	
trans-1,2-Dichloroethene	ND	ug/L	0.50	100	EPA 524.2	yn	9/16/2009	
trans-1,3-Dichloropropene	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	
Trichloroethene	ND	ug/L	0.50	5.0	EPA 524.2	yn	9/16/2009	
Trichlorofluoromethane	ND	ug/L	0.50		EPA 524.2	yn	9/16/2009	

Water sample meets the recommended limits for drinking water of all the above tested parameters.

Attached please find the laboratory certified parameter list.

Approved By:

Gongmin Li
(Lab Director)
9/17/09

ND = None Detected

RL = Reporting Limit

MCL = Maximum Contaminant Level

Superior Court House, P.O. Box 427, Barnstable, MA 02630 Ph: 508-375-6605

ATTACHMENT B

AUL

Form 1075

NOTICE OF ACTIVITY AND USE LIMITATION

M.G.L. c. 21E, § 6 and 310 CMR 40.0000

Disposal Site Name: South Highland Burn Dump
DEP Release Tracking No.: 4-000897

This Notice of Activity and Use Limitation ("Notice") is made as of this 31 day of March, 2005, by The Town of Truro, together with its successors and assigns (collectively "Owner").

WITNESSETH:

WHEREAS, The Town of Truro is the owner in fee simple of that certain parcel of vacant land located in Truro, Barnstable County, Massachusetts, pursuant to a deed recorded with the Barnstable County Registry of Deeds in Book 469, Page 144, and in Book 485, Page 528;

WHEREAS, said parcel of land, which is more particularly bounded and described in Exhibit A, attached hereto and made a part hereof ("Property") is subject to this Notice of Activity and Use Limitation. The Property is shown on a plan recorded in the Barnstable County Registry of Deeds in Plan Book 174, Plan 145;

WHEREAS, a portion of the Property ("Portion of the Property") is subject to this Notice of Activity and Use Limitation. The Portion of the Property is more particularly bounded and described in Exhibit A-1, attached hereto and made a part hereof. The Portion of the Property is shown on a plan recorded with the Barnstable County Registry of Deeds in Plan Book 598, Plan 23;

WHEREAS, the Portion of the Property comprises all of a disposal site as the result of a release of oil and/or hazardous material. Exhibit B is a sketch plan showing the relationship of the Portion of the Property subject to this Notice of Activity and Use Limitation to the boundaries of said disposal site existing within the limits of the Property and to the extent such boundaries have been established. Exhibit B is attached hereto and made a part hereof; and

WHEREAS, one or more response actions have been selected for the Disposal Site in accordance with M.G.L. c. 21E ("Chapter 21E") and the Massachusetts Contingency Plan, 310 CMR 40.0000 ("MCP"). Said response actions are based upon (a) the restriction of human access to and contact with oil and/or hazardous material in soil and/or (b) the restriction of certain activities occurring in, on, through, over or under the Portion of the Property. The basis for such restrictions is set forth in an Activity and Use Limitation Opinion ("AUL Opinion"), dated March 28, 2005, (which is attached hereto as Exhibit C and made a part hereof);

NOW, THEREFORE, notice is hereby given that the activity and use limitations set forth in said AUL Opinion are as follows:

1. Activities and Uses Consistent with the AUL Opinion. The AUL Opinion provides that a condition of No Significant Risk to health, safety, public welfare or the environment exists for any foreseeable period of time (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the Portion of the Property:

(i) Short duration passive recreational uses such as hiking, picnicking, dog walking, ball playing, or the like, as long as such activities do not impact the capping system or penetrate the ground surface.;

(ii) Such other activities or uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare or the environment than the activities and uses set forth in this Paragraph; and

(iv) Such other activities and uses not identified in Paragraph 2 as being Activities and Uses Inconsistent with the AUL.

2. Activities and Uses Inconsistent with the AUL Opinion. Activities and uses which are inconsistent with the objectives of this Notice of Activity and Use Limitation, and which, if implemented at the Portion of the Property, may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

(i) Any activity that will damage, penetrate or compromise the integrity of the capping system;

(ii) Any excavation, digging, trenching, etc., that penetrates the ground surface;

(iii) Construction of any structures, temporary or permanent, such as buildings, dwellings, septic systems, wells, etc; and

(iv) Operation of any motorized vehicles including cars, trucks, motorcycles, ATVs, Etc. The only permitted vehicles in the AUL area are mowers and other similar vehicles necessary for the maintenance of the vegetative cover on the cap.

3. Obligations and Conditions Set Forth in the AUL Opinion. If applicable, obligations and/or conditions to be undertaken and/or maintained at the Portion of the Property to maintain a condition of No Significant Risk as set forth in the AUL Opinion shall include the following:

(i) Maintenance of the vegetative support layer of the cap which this AUL applies. This includes annual mowing, inspection and repair of erosion, and maintenance of the drainage basin.

4. Proposed Changes in Activities and Uses. Any proposed changes in activities and uses at the

Portion of the Property which may result in higher levels of exposure to oil and/or hazardous material than currently exist shall be evaluated by an LSP who shall render an Opinion, in accordance with 310 CMR 40.1080 *et seq.*, as to whether the proposed changes will present a significant risk of harm to health, safety, public welfare or the environment. Any and all requirements set forth in the Opinion to meet the objective of this Notice shall be satisfied before any such activity or use is commenced.

5. Violation of a Response Action Outcome. The activities, uses and/or exposures upon which this Notice is based shall not change at any time to cause a significant risk of harm to health, safety, public welfare, or the environment or to create substantial hazards due to exposure to oil and/or hazardous material without the prior evaluation by an LSP in accordance with 310 CMR 40.1080 *et seq.*, and without additional response actions, if necessary, to achieve or maintain a condition of No Significant Risk or to eliminate substantial hazards.

If the activities, uses, and/or exposures upon which this Notice is based change without the prior evaluation and additional response actions determined to be necessary by an LSP in accordance with 310 CMR 40.1080 *et seq.*, the owner or operator of the Portion of the Property subject to this Notice at the time that the activities, uses and/or exposures change, shall comply with the requirements set forth in 310 CMR 40.0020.

6. Incorporation Into Deeds, Mortgages, Leases, and Instruments of Transfer. This Notice shall be incorporated either in full or by reference into all future deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer, whereby an interest in and/or a right to use the Property or a portion thereof is conveyed.

Owner hereby authorizes and consents to the filing and recordation and/or registration of this Notice, said Notice to become effective when executed under seal by the undersigned LSP, and recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office.

WITNESS the execution hereof under seal this 31 day of March, 2005.

Pamela T Nolan
On Behalf of the Town of Truro

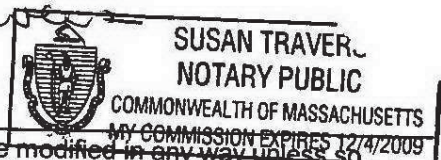
COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss

March 31, 2005

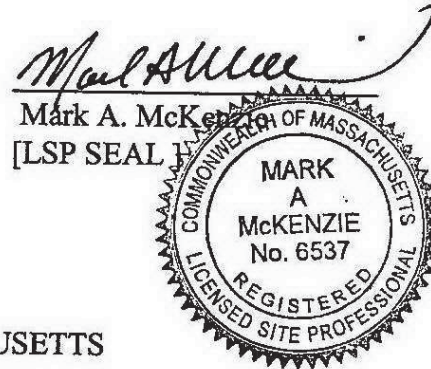
Then personally appeared the above-named Pamela Nolan and acknowledged the foregoing instrument to be her free act and deed before me,

Susan Traver
Notary Public:
My Commission Expires:



The undersigned LSP hereby certifies that he executed the aforesaid Activity and Use Limitation Opinion attached hereto as Exhibit C and made a part hereof and that in his Opinion this Notice of Activity and Use Limitation is consistent with the terms set forth in said Activity and Use Limitation Opinion.

Date: 3/31/05



COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss

March 31, 2005

Then personally appeared the above named Mark A. McKenzie and acknowledged the foregoing instrument to be his free act and deed before me,

Notary Public: 
My Commission Expires:

Upon recording, return to:

Mark McKenzie, LSP
East Cape Engineering, Inc
P.O. Box 1525
Orleans, MA 02653

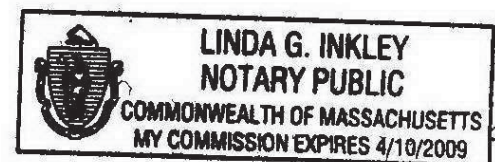


Exhibit A

Legal Description of Parcel Containing Area Subject to AUL

A certain parcel of land as owned by the Town of Truro on South Highland Road in Truro MA is described as follows:

BEGINNING at a point on South Highland Road

THENCE S 52°-42'-59" E for a distance of two hundred sixty and 98/100 (260.98) feet to a point,

THENCE N 61°-35'-21"E for a distance of eighty-four and 00/100 (84.00) feet to a point, thence S 38°-19'-19" E for a distance of 200.00 feet to a point,

THENCE S 63°-29'-46" W for a distance of four hundred eighty-three and 59/100 (483.59) feet to a point,

THENCE N 31°-02'-59" W for a distance of one hundred ninety-two and 92/100 (196.92) feet to a point,

THENCE along South Highland Road on a radius of nine hundred ninety-two and 52/100 (992.52) feet for a distance of three hundred forty-eight and 71/100 (348.71) feet to the point of beginning.

Containing 3.02 acres more or less as shown on a plan entitled Plan of Land in Truro Belonging to the Town of Truro dated February 1963 and recorded in the Barnstable County Registry of Deeds in Plan Book 174, Plan 145.

Exhibit A-1
Legal Description of Area Subject to AUL

A portion of a parcel of land as owned by the Town of Truro on South Highland Road in Truro MA subject to an Activity and Use Limitation under the MCP is described as follows:

BEGINNING at a point on South Highland Road

THENCE S 52°-42'-59" E for a distance of two hundred sixty and 98/100 (260.98) feet to a point,

THENCE N 61°-35'-21"E for a distance of eighty-four and 00/100 (84.00) feet to a point, thence S 38°-19'-19" E for a distance of 200.00 feet to a point,

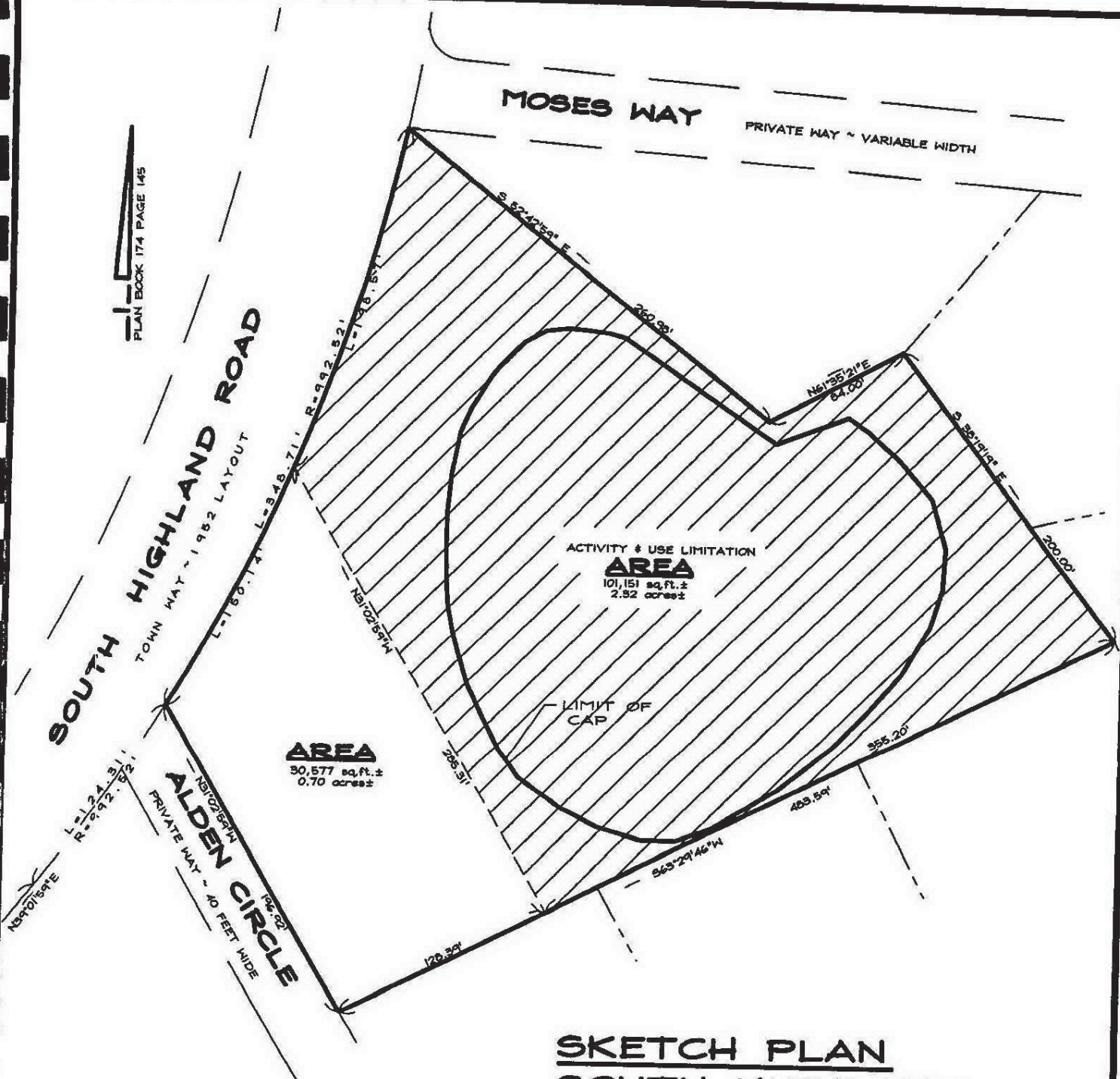
THENCE S 63°-29'-46" W for a distance of four hundred eighty-three and 59/100 (483.59) feet to a point,

THENCE N 31°-02'-59" W for a distance of two hundred eighty-five and 31/100 (285.31) feet to a point,

THENCE along South Highland Road on a radius of nine hundred ninety-two and 52/100 (992.52) feet for a distance of one hundred ninety-eight and 57/100 (198.57) feet to the point of beginning.

Containing 2.32 acres more or less as shown on a plan entitled Plan of Land Showing Area to be Restricted by an Activity and Use Limitation (Reference RTN 4-000897) dated March 28, 2005 and recorded in the Barnstable County Registry of Deeds in Plan Book 598, Plan 23.

PLAN BOOK 174 PAGE 145



SKETCH PLAN
SOUTH HIGHLAND
BURN DUMP
 RTN 4-000897
SOUTH HIGHLAND RD.
TRURO, MA

EAST CAPE ENGINEERING INC.
 CIVIL ENGINEERS
 LAND SURVEYORS
 44 RTE. 28 ORLEANS, MA. 02653
 (508) 255-7120

PREPARED FOR:
TOWN OF TRURO
 SCALE: 1"=80' MARCH 28, 2005

Exhibit C

AUL Opinion

South Highland Burn Dump
South Highland Road, Truro, MA
RTN 4-0000897
March 28, 2005

Introduction: This Activity and Use Limitation (AUL) Opinion summarizes the background for this disposal site, remedial actions taken at the site, the reason why an AUL is required for this disposal site, and discusses the limitations imposed by the AUL.

Site History: The property is owned by the Town of Truro and was operated as a municipal open burning dump from 1940 until 1964. The site received waste from mainly residential solid waste, however it is reported that waste was also received from the North Truro AFS. The site has been vacant since burning operations were stopped except for reported disposal of street sweeping materials at the site during the 1960's and 1970's

Summary of Site Investigation/Alternatives Analysis : The result of the site investigation was that there is a large area of buried burn waste including ash, metal, and glass over an area of approximately 60,000 square feet at an estimated volume of 10,000 cubic yards. The analytical results of soil sampling at the site revealed levels of metals and PAHs in excess of the Method 1 risk assessment levels. Due to the variable concentration of contaminants in landfilled burn debris, it is assumed that the entire mass of waste would be expected to have contaminant concentrations in excess of Method 1 standards.

After an analysis of four options ranging from full excavation to fencing the site and prohibiting any future use, the selected option was installation of a GCL cap and implementation of an Activity and Use Limitation.

Implementation of the Selected Remedy: The option constructed included re-grading the surface of the burn dump to promote run-off, placement of a sand subgrade layer, installation of a geosynthetic clay liner (GCL), and a barrier protection layer consisting of twelve inches of sand and six inches of loam. The surface was then seeded with grass seed. This work was completed during fall 2004.

Purpose of the Activity and Use Limitation: An Activity and Use Limitation (AUL) is used to protect the public health, safety, and the environment at a disposal site where contamination (in this case burn dump residual) remains. Protection occurs by limiting the activities and uses of the site that could impact or expose the contaminants to persons or the environment. In this case, the activities at a portion of this parcel where the engineered cap is installed must be limited to prevent damage to the cap system which provides the barrier to humans and the environment. The area that this AUL applies is shown on Exhibit A-1 and the location of the capped area relative to the area that the AUL applies is shown on the sketch plan labeled Exhibit B.

Uses that are Allowed in the Area of the AUL: The following activities are permitted within the AUL area:

- 1) Short duration passive recreational uses such as hiking, picnicking, dog walking, ball playing, or the like, as long as such activities do not impact the capping system or penetrate the ground surface.

Uses that are Prohibited in the Area of the AUL: The following activities are prohibited within the AUL area:

- 1) Any activity that will damage, penetrate or compromise the integrity of the capping system.
- 2) Any excavation, digging, trenching, etc., that penetrates the ground surface.
- 3) Construction of any structures, temporary or permanent, such as buildings, dwellings, septic systems, wells, etc.
- 4) Operation of any motorized vehicles including cars, trucks, motorcycles, ATVs, Etc. The only permitted vehicles in the AUL area are mowers and other similar vehicles necessary for the maintenance of the vegetative cover on the cap.

The following obligations and conditions are set forth in this AUL opinion to ensure a continuing condition of No Significant Risk:

Maintenance of the vegetative support layer of the cap which this AUL applies. This includes annual mowing, inspection and repair of erosion, and maintenance of the drainage basin.

If these provisions as outlined above are maintained and adhered to, a condition of No Significant Risk will continued to be achieved at the portion of the site in which this AUL addresses. If you have any questions, the LSP of record for this site can be contacted.



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113A

ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number

4 - 897

A. DISPOSAL SITE LOCATION:

1. Disposal Site Name: South Highland Burn Dump

2. Street Address: South Highland Rd

3. City/Town: Truro

4. ZIP Code: 02666-0000

B. THIS FORM IS BEING USED TO: (check one)

- ☒ 1. Provide the LSP Opinion for a **Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1074.
- ☐ 2. Provide the LSP Opinion for an **Evaluation of Changes in Land Uses/Activities and/or Site Conditions after a Response Action Outcome Statement**, pursuant to 310 CMR 40.1080. Include BWSC113A as an attachment to BWSC113. Section A and C do not need to be completed.
- ☐ 3. Provide the LSP Opinion for an **Amended Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1081(4).
- ☐ 4. Provide the LSP Opinion for a **Partial Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(3).
- ☐ 5. Provide the LSP Opinion for a **Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(1)(d).
- ☐ 6. Provide the LSP Opinion for a **Grant of Environmental Restriction**, pursuant to 310 CMR 40.1071.
- ☐ 7. Provide the LSP Opinion for an **Amendment of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1081(3).
- ☐ 8. Provide the LSP Opinion for a **Partial Release of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1083(2).
- ☐ 9. Provide the LSP Opinion for a **Release of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1083(1)(c).
- ☐ 10. Provide the LSP Opinion for a **Confirmatory Activity and Use Limitation**, pursuant to 310 CMR 40.1085(4).

(Unless otherwise noted above, all sections of this form (BWSC113A) must be completely filled out, printed, stamped, signed with black ink and attached as an exhibit to the AUL Document to be recorded and/or registered with the Registry of Deeds and/or Land Registration Office.)

C. AUL INFORMATION:

1. Is the address of the property subject to AUL different from the disposal site address listed above?

☒ a. No ☐ b. Yes If yes, then fill out address section below.

2. Street Address: _____

3. City/Town: _____

4. ZIP Code: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113A

ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number

4 - 897

D. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B indicates that a **Notice of Activity and Use Limitation** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1074;

> if Section B indicates that an **Evaluation of Changes in Land Uses/Activities and/or Site Conditions after a Response Action Outcome Statement** is being submitted, this evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1080;

> if Section B indicates that an **Amended Notice of Activity and Use Limitation or Amendment to a Grant of Environmental Restriction** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 40.1081;

> if Section B indicates that a **Termination or a Partial Termination of a Notice of Activity and Use Limitation, or a Release or Partial Release of a Grant of Environmental Restriction** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1083;

> if Section B indicates that a **Grant of Environmental Restriction** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1071;

> if Section B indicates that a **Confirmatory Activity and Use Limitation** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1085(4);

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 6537

2. First Name: Mark

3. Last Name: McKenzie

4. Telephone: (508) 255-7120

5. Ext.: _____

6. FAX: (508) 255-3176

7. Signature: _____

8. Date: _____

03/20/2005
mm/dd/yyyy

9. LSP Stamp:



ATTACHMENT C

TEST PIT LOGS

Depth to Water: N/A

Depth	Description	USCS Code	Color	Comments	TOV (PPM)
0-6"	Brown top soil with organic material (leafs)	SM	Br	No odor or evidence of burn dump debris	<0.1
6"-2'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	
2-4'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
4-6'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
6-8'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1

Depth to Water: N/A

Depth	Description	USCS Code	Color	Comments	TOV (PPM)
0-6"	Brown top soil with organic material (leaves)	SM	Br	No odor or evidence of burn dump debris	<0.1
6"-2'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	
2-4'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
4-6'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
6-8'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1



TEST PIT LOG: TP-3A

Project: 22098

Client: Town of Truro

Excavator: Town of Truro DPW

Equipment: Excavator

Location: 25 South Highland Road

Date: 10/20/2022

Completion Depth: 2'

Elevation: NA

Inspector: BJM

Depth to Water: N/A

<u>Proportions</u>	<u>Color</u>	<u>USCS Code</u>	<u>Size</u>	<u>Misc.</u>
trace (trc) 0 - 10%	Blue (Bl)	Well-Graded Gravel (GW)	Fine = (f)	Fine to Coarse = (f-c)
little (li) 10 - 20%	Red (R)	Poorly-Graded Gravel (GP)	Medium = (m)	Very = (v)
some (so) 20 - 35%	Light (lt)	Silty Gravels, Gravel-Sand-Silt Mixtures (GM)	Coarse = (c)	More/Less = (+/-)
and 35 - 50%	Dark (dk)	Clayey Gravels, Gravel-Sand-Clay Mixtures (GC)		
	Rust (Ru)	Well-Graded Sand (SW)		
	Brown (Br)	Poorly-Graded Sand (SP)		
	Orange (Or)	Silty Sands, Sand Silt Mixtures (SM)		
	Black (Blk)	Clayey Sands, Sand-Clay Mixtures (SC)		
	<u>Angular</u>	Inorganic Silts, Clayey Silts of Low to Medium Plasticity (ML)		
	Round (rnd.)	Inorganic Silts, Micaceous, or Diatomaceous Silty Soils, Elastic Silts (MH)		
	Angular (ang.)	Inorganic Clays of Low to Medium Plasticity, Gravely, Sandy, and Silty Clays (CL)		

Depth	Description	USCS Code	Color	Comments	TOV (PPM)
0-2'	Dry, brown silty sand	SM	Br	No odor or evidence of burn dump debris. Excavator electrical failure, excavation stopped.	<0.1

Depth to Water: N/A

Depth	Description	USCS Code	Color	Comments	TOV (PPM)
0-6"	Brown top soil with organic material (leaves)	SM	Br	No odor or evidence of burn dump debris	<0.1
6"-2'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	
2-4'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
4-6'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
6-8'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1

Depth to Water: N/A

Depth	Description	USCS Code	Color	Comments	TOV (PPM)
0-6"	Brown top soil with organic material (leaves)	SM	Br	No odor or burn dump debris	<0.1
6"-2'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	
2-4'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
4-6'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
6-8'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1

Depth to Water: N/A

Depth	Description	USCS Code	Color	Comments	TOV (PPM)
0-6"	Brown top soil with organic material (leaves)	SM	Br	No odor or burn dump debris	<0.1
6"-2'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	
2-4'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
4-6'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
6-8'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1

Depth to Water: N/A

Depth	Description	USCS Code	Color	Comments	TOV (PPM)
0-6"	Brown top soil with organic material (leaves)	SM	Br	No odor or burn dump debris	<0.1
6"-2'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	
2-4'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
4-6'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1
6-8'	Dry, fine to medium tan to orange sand	SP	Br/Or	No odor or evidence of burn dump debris	<0.1

ATTACHMENT D

PHOTOGRAPHICAL DOCUMENTATION

Photo Log - Test Pits (October 2022)



Photo 1: General Site conditions are mostly wooded and vegetated.



Photo 2: General test pit excavation.

Photo Log - Test Pits (October 2022)



Photo 3: General test pit excavation.



Photo 4: General test pit excavation.

ATTACHMENT E
LABORATORY REPORTS



ANALYTICAL REPORT

Lab Number:	L2259120
Client:	Horseley & Witten, Inc. Sextant Hill Office Park 90 Route 6A Sandwich, MA 02563
ATTN:	Brian Massa
Phone:	(508) 833-6600
Project Name:	SOUTH HIGHLAND
Project Number:	22098
Report Date:	11/21/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2259120-01	DWW-1	WATER	TRURO	10/21/22 12:05	10/21/22

Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is 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 within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
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).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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
A response to questions G, H and I 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)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
For any questions answered "No", please refer to the case narrative section on the following page(s).		

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

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 Alpha 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, solids and tissues are reported on a dry 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, Alpha'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 Alpha Project Manager and made arrangements for Alpha 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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

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.

MCP Related Narratives

Volatile Organics

L2259120-01D2: A copy of the continuing calibration standard is included as an addendum to this report.

In reference to question G:

L2259120-01D: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

L2259120-01D: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,4-dioxane (0.0016)

Average Response Factor: 1,4-dioxane

L2259120-01D: The associated continuing calibration standard is outside the acceptance criteria for several compounds; however, it is within overall method allowances. Associated results are considered to be biased high if the %D is negative and biased low if the %D is positive. A copy of the continuing calibration standard is included as an addendum to this report.

Semivolatile Organics by SIM

L2259120-01 and WG1705106-1,2,3: The initial calibration utilized a quadratic fit for Pentachlorophenol.

EPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

VPH

L2259120-01D: It should be noted that based on review of the VPH chromatograms there is the potential that

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Case Narrative (continued)

non-hydrocarbon compounds are being included in the summation of the C5-C8 Aliphatics range. This could result in a greater concentration being reported for this range than would otherwise be the case. The VPH gas chromatographic method is subject to the inclusion of non-hydrocarbon compounds in carbon range summations if the non-hydrocarbon compound is amenable to the method operating conditions and elutes within the range's retention time window. A copy of the chromatogram is included as an attachment to this report.

In reference to question G:

L2259120-01D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample. One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Dissolved Metals

In reference to question G:

L2259120-01: One or more of the target analytes did not achieve the requested CAM reporting limits.

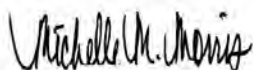
Non-MCP Related Narratives

Perfluorinated Alkyl Acids by Isotope Dilution

WG1706450-1R: The sample was re-analyzed due to QC failures in the original analysis. The results of the re-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:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 11/21/22

QC OUTLIER SUMMARY REPORT

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics - Westborough Lab								
8260D	Batch QC	WG1707538-3	Bromoform	LCS	69	70-130	01	potential low bias
8260D	Batch QC	WG1707538-3	1,2-Dibromo-3-chloropropane	LCS	67	70-130	01	potential low bias
MCP Semivolatile Organics - Westborough Lab								
8270E	DWW-1	L2259120-01	2,4,6-Tribromophenol	Surrogate	118	15-110	-	potential high bias
8270E	Batch QC	WG1704614-2	2,4,6-Tribromophenol	Surrogate	145	15-110	-	potential high bias
8270E	Batch QC	WG1704614-3	Acenaphthene	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	1,2,4-Trichlorobenzene	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Bis(2-chloroethyl)ether	LCSD	27	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2-Chloronaphthalene	LCSD	24	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	1,2-Dichlorobenzene	LCSD	28	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	1,3-Dichlorobenzene	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	1,4-Dichlorobenzene	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2,6-Dinitrotoluene	LCSD	22	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Azobenzene	LCSD	22	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Fluoranthene	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	4-Bromophenyl phenyl ether	LCSD	27	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Bis(2-chloroisopropyl)ether	LCSD	27	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Bis(2-chloroethoxy)methane	LCSD	22	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Hexachlorobutadiene	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Hexachloroethane	LCSD	27	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Naphthalene	LCSD	22	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Nitrobenzene	LCSD	24	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Di-n-butylphthalate	LCSD	22	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Diethyl phthalate	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Acenaphthylene	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Fluorene	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Biphenyl	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Aniline	LCSD	28	20	01	non-directional bias

QC OUTLIER SUMMARY REPORT

Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
8270E	Batch QC	WG1704614-3	Dibenzofuran	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2-Methylnaphthalene	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Acetophenone	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2,4,6-Trichlorophenol	LCSD	22	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2-Chlorophenol	LCSD	27	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2,4-Dichlorophenol	LCSD	23	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2-Nitrophenol	LCSD	22	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	4-Nitrophenol	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Pentachlorophenol	LCSD	25	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	Phenol	LCSD	24	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	3-Methylphenol/4-Methylphenol	LCSD	21	20	01	non-directional bias
8270E	Batch QC	WG1704614-3	2,4,6-Tribromophenol	Surrogate	118	15-110	-	potential high bias
MCP Semivolatile Organics by SIM - Westborough Lab								
8270E-SIM	DWW-1	L2259120-01	2,4,6-Tribromophenol	Surrogate	114	15-110	-	potential high bias
8270E-SIM	Batch QC	WG1705106-2	2-Fluorobiphenyl	Surrogate	24	30-130	-	potential low bias
8270E-SIM	Batch QC	WG1705106-2	4-Terphenyl-d14	Surrogate	23	30-130	-	potential low bias
8270E-SIM	Batch QC	WG1705106-3	Acenaphthene	LCSD	22	20	01	non-directional bias
8270E-SIM	Batch QC	WG1705106-3	Naphthalene	LCSD	22	20	01	non-directional bias
8270E-SIM	Batch QC	WG1705106-3	Benzo(k)fluoranthene	LCSD	22	20	01	non-directional bias
8270E-SIM	Batch QC	WG1705106-3	Chrysene	LCSD	21	20	01	non-directional bias
8270E-SIM	Batch QC	WG1705106-3	Hexachloroethane	LCSD	21	20	01	non-directional bias
8270E-SIM	Batch QC	WG1705106-3	Phenol-d6	Surrogate	14	15-110	-	potential low bias
8270E-SIM	Batch QC	WG1705106-3	Nitrobenzene-d5	Surrogate	27	30-130	-	potential low bias
8270E-SIM	Batch QC	WG1705106-3	2-Fluorobiphenyl	Surrogate	20	30-130	-	potential low bias
8270E-SIM	Batch QC	WG1705106-3	4-Terphenyl-d14	Surrogate	20	30-130	-	potential low bias

ORGANICS

VOLATILES

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

SAMPLE RESULTS

Lab ID: L2259120-01 D2
 Client ID: DWW-1
 Sample Location: TRURO

Date Collected: 10/21/22 12:05
 Date Received: 10/21/22
 Field Prep: Refer to COC

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 11/03/22 06:21
 Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Tetrahydrofuran	3800		ug/l	100	26.	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	121		70-130

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01 D

Date Collected: 10/21/22 12:05

Client ID: DWW-1

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Analytical Method: 141,8260D

Analytical Date: 11/02/22 20:02

Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	40	14.	20
1,1-Dichloroethane	ND		ug/l	20	4.2	20
Chloroform	11	J	ug/l	20	4.4	20
Carbon tetrachloride	ND		ug/l	20	2.7	20
1,2-Dichloropropane	ND		ug/l	20	2.7	20
Dibromochloromethane	ND		ug/l	20	3.0	20
1,1,2-Trichloroethane	ND		ug/l	20	2.9	20
Tetrachloroethene	ND		ug/l	20	3.6	20
Chlorobenzene	ND		ug/l	20	3.6	20
Trichlorofluoromethane	ND		ug/l	40	3.2	20
1,2-Dichloroethane	ND		ug/l	20	2.6	20
1,1,1-Trichloroethane	ND		ug/l	20	3.2	20
Bromodichloromethane	ND		ug/l	20	3.8	20
trans-1,3-Dichloropropene	ND		ug/l	8.0	3.3	20
cis-1,3-Dichloropropene	ND		ug/l	8.0	2.9	20
1,3-Dichloropropene, Total	ND		ug/l	8.0	2.9	20
1,1-Dichloropropene	ND		ug/l	40	4.8	20
Bromoform	ND		ug/l	40	5.0	20
1,1,2,2-Tetrachloroethane	ND		ug/l	20	3.3	20
Benzene	ND		ug/l	10	3.2	20
Toluene	ND		ug/l	20	4.1	20
Ethylbenzene	ND		ug/l	20	3.3	20
Chloromethane	ND		ug/l	40	4.0	20
Bromomethane	ND		ug/l	40	5.1	20
Vinyl chloride	ND		ug/l	20	1.4	20
Chloroethane	ND		ug/l	40	2.7	20
1,1-Dichloroethene	ND		ug/l	20	3.4	20
trans-1,2-Dichloroethene	ND		ug/l	20	3.3	20

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01 D

Date Collected: 10/21/22 12:05

Client ID: DWW-1

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	20	3.5	20
1,2-Dichlorobenzene	ND		ug/l	20	3.7	20
1,3-Dichlorobenzene	ND		ug/l	20	3.7	20
1,4-Dichlorobenzene	ND		ug/l	20	3.7	20
Methyl tert butyl ether	ND		ug/l	40	3.3	20
p/m-Xylene	ND		ug/l	40	6.6	20
o-Xylene	ND		ug/l	20	7.8	20
Xylenes, Total	ND		ug/l	20	6.6	20
cis-1,2-Dichloroethene	ND		ug/l	20	3.7	20
1,2-Dichloroethene, Total	ND		ug/l	20	3.3	20
Dibromomethane	ND		ug/l	40	7.3	20
1,2,3-Trichloropropane	ND		ug/l	40	3.5	20
Styrene	ND		ug/l	20	7.2	20
Dichlorodifluoromethane	ND		ug/l	40	4.9	20
Acetone	ND		ug/l	100	29.	20
Carbon disulfide	ND		ug/l	40	6.0	20
Methyl ethyl ketone	ND		ug/l	100	39.	20
Methyl isobutyl ketone	ND		ug/l	100	8.3	20
2-Hexanone	ND		ug/l	100	10.	20
Bromochloromethane	ND		ug/l	40	3.0	20
Tetrahydrofuran	4000	E	ug/l	40	10.	20
2,2-Dichloropropane	ND		ug/l	40	4.1	20
1,2-Dibromoethane	ND		ug/l	40	3.9	20
1,3-Dichloropropane	ND		ug/l	40	4.2	20
1,1,1,2-Tetrachloroethane	ND		ug/l	20	3.3	20
Bromobenzene	ND		ug/l	40	3.0	20
n-Butylbenzene	ND		ug/l	40	3.8	20
sec-Butylbenzene	ND		ug/l	40	3.6	20
tert-Butylbenzene	ND		ug/l	40	3.9	20
o-Chlorotoluene	ND		ug/l	40	4.3	20
p-Chlorotoluene	ND		ug/l	40	3.7	20
1,2-Dibromo-3-chloropropane	ND		ug/l	40	7.1	20
Hexachlorobutadiene	ND		ug/l	12	4.3	20
Isopropylbenzene	ND		ug/l	40	3.7	20
p-Isopropyltoluene	ND		ug/l	40	3.8	20
Naphthalene	ND		ug/l	40	4.3	20
n-Propylbenzene	ND		ug/l	40	3.5	20



Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01 D

Date Collected: 10/21/22 12:05

Client ID: DWW-1

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	40	4.7	20
1,2,4-Trichlorobenzene	ND		ug/l	40	4.4	20
1,3,5-Trimethylbenzene	ND		ug/l	40	4.3	20
1,2,4-Trimethylbenzene	ND		ug/l	40	3.8	20
Diethyl ether	ND		ug/l	40	3.3	20
Diisopropyl Ether	ND		ug/l	40	8.5	20
Ethyl-Tert-Butyl-Ether	ND		ug/l	40	3.6	20
Tertiary-Amyl Methyl Ether	ND		ug/l	40	5.6	20
1,4-Dioxane	ND		ug/l	5000	1200	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	119		70-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
 Analytical Date: 11/02/22 19:16
 Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1707538-5					
Methylene chloride	ND		ug/l	2.0	0.68
1,1-Dichloroethane	ND		ug/l	1.0	0.21
Chloroform	ND		ug/l	1.0	0.22
Carbon tetrachloride	ND		ug/l	1.0	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	1.0	0.15
1,1,2-Trichloroethane	ND		ug/l	1.0	0.14
Tetrachloroethene	ND		ug/l	1.0	0.18
Chlorobenzene	ND		ug/l	1.0	0.18
Trichlorofluoromethane	ND		ug/l	2.0	0.16
1,2-Dichloroethane	ND		ug/l	1.0	0.13
1,1,1-Trichloroethane	ND		ug/l	1.0	0.16
Bromodichloromethane	ND		ug/l	1.0	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.40	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.40	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.40	0.14
1,1-Dichloropropene	ND		ug/l	2.0	0.24
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	1.0	0.20
Ethylbenzene	ND		ug/l	1.0	0.17
Chloromethane	ND		ug/l	2.0	0.20
Bromomethane	ND		ug/l	2.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.0	0.13
1,1-Dichloroethene	ND		ug/l	1.0	0.17
trans-1,2-Dichloroethene	ND		ug/l	1.0	0.16
Trichloroethene	ND		ug/l	1.0	0.18

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
 Analytical Date: 11/02/22 19:16
 Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1707538-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	0.18
1,3-Dichlorobenzene	ND		ug/l	1.0	0.19
1,4-Dichlorobenzene	ND		ug/l	1.0	0.19
Methyl tert butyl ether	ND		ug/l	2.0	0.17
p/m-Xylene	ND		ug/l	2.0	0.33
o-Xylene	ND		ug/l	1.0	0.39
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.19
1,2-Dichloroethene, Total	ND		ug/l	1.0	0.16
Dibromomethane	ND		ug/l	2.0	0.36
1,2,3-Trichloropropane	ND		ug/l	2.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	2.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	2.0	0.30
Methyl ethyl ketone	ND		ug/l	5.0	1.9
Methyl isobutyl ketone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Bromochloromethane	ND		ug/l	2.0	0.15
Tetrahydrofuran	ND		ug/l	2.0	0.52
2,2-Dichloropropane	ND		ug/l	2.0	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.0	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	0.16
Bromobenzene	ND		ug/l	2.0	0.15
n-Butylbenzene	ND		ug/l	2.0	0.19
sec-Butylbenzene	ND		ug/l	2.0	0.18
tert-Butylbenzene	ND		ug/l	2.0	0.20
o-Chlorotoluene	ND		ug/l	2.0	0.22

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 11/02/22 19:16
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1707538-5					
p-Chlorotoluene	ND		ug/l	2.0	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	0.35
Hexachlorobutadiene	ND		ug/l	0.60	0.22
Isopropylbenzene	ND		ug/l	2.0	0.19
p-Isopropyltoluene	ND		ug/l	2.0	0.19
Naphthalene	ND		ug/l	2.0	0.22
n-Propylbenzene	ND		ug/l	2.0	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.0	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.0	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.0	0.22
1,2,4-Trimethylbenzene	ND		ug/l	2.0	0.19
Diethyl ether	ND		ug/l	2.0	0.16
Diisopropyl Ether	ND		ug/l	2.0	0.42
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	0.18
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28
1,4-Dioxane	ND		ug/l	250	61.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	119		70-130



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 11/03/22 05:59
Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1707740-5					
Tetrahydrofuran	ND		ug/l	2.0	0.52

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	120		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1707538-3 WG1707538-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	120		110		70-130	9		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	94		99		70-130	5		20
1,2-Dichloropropane	100		110		70-130	10		20
Dibromochloromethane	82		86		70-130	5		20
1,1,2-Trichloroethane	83		88		70-130	6		20
Tetrachloroethene	100		99		70-130	1		20
Chlorobenzene	99		97		70-130	2		20
Trichlorofluoromethane	99		99		70-130	0		20
1,2-Dichloroethane	90		93		70-130	3		20
1,1,1-Trichloroethane	100		100		70-130	0		20
Bromodichloromethane	89		94		70-130	5		20
trans-1,3-Dichloropropene	82		85		70-130	4		20
cis-1,3-Dichloropropene	85		91		70-130	7		20
1,1-Dichloropropene	96		98		70-130	2		20
Bromoform	69	Q	73		70-130	6		20
1,1,2,2-Tetrachloroethane	74		77		70-130	4		20
Benzene	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	130		120		70-130	8		20
Bromomethane	87		81		70-130	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1707538-3 WG1707538-4								
Vinyl chloride	130		130		70-130	0		20
Chloroethane	120		120		70-130	0		20
1,1-Dichloroethene	110		110		70-130	0		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	97		98		70-130	1		20
1,2-Dichlorobenzene	95		94		70-130	1		20
1,3-Dichlorobenzene	97		94		70-130	3		20
1,4-Dichlorobenzene	97		95		70-130	2		20
Methyl tert butyl ether	75		83		70-130	10		20
p/m-Xylene	110		110		70-130	0		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	100		110		70-130	10		20
Dibromomethane	90		92		70-130	2		20
1,2,3-Trichloropropane	72		76		70-130	5		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	96		97		70-130	1		20
Acetone	94		100		70-130	6		20
Carbon disulfide	83		79		70-130	5		20
Methyl ethyl ketone	71		82		70-130	14		20
Methyl isobutyl ketone	81		88		70-130	8		20
2-Hexanone	74		82		70-130	10		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	89		100		70-130	12		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1707538-3 WG1707538-4								
2,2-Dichloropropane	99		100		70-130	1		20
1,2-Dibromoethane	84		89		70-130	6		20
1,3-Dichloropropane	89		92		70-130	3		20
1,1,1,2-Tetrachloroethane	84		85		70-130	1		20
Bromobenzene	89		88		70-130	1		20
n-Butylbenzene	98		97		70-130	1		20
sec-Butylbenzene	100		99		70-130	1		20
tert-Butylbenzene	100		98		70-130	2		20
o-Chlorotoluene	96		94		70-130	2		20
p-Chlorotoluene	98		95		70-130	3		20
1,2-Dibromo-3-chloropropane	67	Q	70		70-130	4		20
Hexachlorobutadiene	92		89		70-130	3		20
Isopropylbenzene	97		95		70-130	2		20
p-Isopropyltoluene	100		98		70-130	2		20
Naphthalene	79		81		70-130	3		20
n-Propylbenzene	100		98		70-130	2		20
1,2,3-Trichlorobenzene	85		86		70-130	1		20
1,2,4-Trichlorobenzene	84		84		70-130	0		20
1,3,5-Trimethylbenzene	93		93		70-130	0		20
1,2,4-Trimethylbenzene	93		91		70-130	2		20
Diethyl ether	84		91		70-130	8		20
Diisopropyl Ether	100		110		70-130	10		20
Ethyl-Tert-Butyl-Ether	87		95		70-130	9		20

Lab Control Sample Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1707538-3 WG1707538-4								
Tertiary-Amyl Methyl Ether	75		82		70-130	9		20
1,4-Dioxane	116		124		70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		98		70-130
Toluene-d8	104		101		70-130
4-Bromofluorobenzene	94		92		70-130
Dibromofluoromethane	101		104		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1707740-3 WG1707740-4								
Tetrahydrofuran	93		90		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		95		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	93		94		70-130
Dibromofluoromethane	108		105		70-130

SEMIVOLATILES

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

SAMPLE RESULTS

Lab ID: L2259120-01
Client ID: DWW-1
Sample Location: TRURO

Date Collected: 10/21/22 12:05
Date Received: 10/21/22
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/17/22 06:48
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 11/01/22 05:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.385	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.374	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.225	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.89	0.427	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.89	0.310	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.89	0.232	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.355	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.80	J	ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.650	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.294	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.476	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.287	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.14	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.89	1.06	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.612	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.245	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.925	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.548	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.759	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.351	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.309	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.234	1

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01

Date Collected: 10/21/22 12:05

Client ID: DWW-1

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Refer to COC

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)	82		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	114		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	126		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	121		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	7		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	65		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	86		22-136

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

SAMPLE RESULTS

Lab ID: L2259120-01
Client ID: DWW-1
Sample Location: TRURO

Date Collected: 10/21/22 12:05
Date Received: 10/21/22
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 141,8270E
Analytical Date: 10/28/22 01:50
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/26/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
Azobenzene	ND		ug/l	2.0	0.37	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.6	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	0.73	0.46	1
Aniline	ND		ug/l	2.0	0.68	1
4-Chloroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.50	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.73	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

SAMPLE RESULTS

Lab ID: L2259120-01
Client ID: DWW-1
Sample Location: TRURO

Date Collected: 10/21/22 12:05
Date Received: 10/21/22
Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
2,4-Dimethylphenol	ND		ug/l	5.0	3.0	1
2-Nitrophenol	ND		ug/l	10	0.90	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.65	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.72	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		15-110
Phenol-d6	49		15-110
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	89		30-130
2,4,6-Tribromophenol	118	Q	15-110
4-Terphenyl-d14	109		30-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

SAMPLE RESULTS

Lab ID: L2259120-01
Client ID: DWW-1
Sample Location: TRURO

Date Collected: 10/21/22 12:05
Date Received: 10/21/22
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 141,8270E-SIM
Analytical Date: 11/09/22 17:44
Analyst: ALS

Extraction Method: EPA 3510C
Extraction Date: 10/26/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics by SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.01	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.08	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01

Date Collected: 10/21/22 12:05

Client ID: DWW-1

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics by SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		15-110
Phenol-d6	56		15-110
Nitrobenzene-d5	126		30-130
2-Fluorobiphenyl	92		30-130
2,4,6-Tribromophenol	114	Q	15-110
4-Terphenyl-d14	94		30-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 10/27/22 22:28
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/26/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG1704614-1					
Acenaphthene	ND		ug/l	2.0	0.44
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50
Hexachlorobenzene	ND		ug/l	2.0	0.46
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
2-Chloronaphthalene	ND		ug/l	2.0	0.44
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
Azobenzene	ND		ug/l	2.0	0.37
Fluoranthene	ND		ug/l	2.0	0.28
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorobutadiene	ND		ug/l	2.0	0.97
Hexachloroethane	ND		ug/l	2.0	0.78
Isophorone	ND		ug/l	5.0	1.2
Naphthalene	ND		ug/l	2.0	0.46
Nitrobenzene	ND		ug/l	2.0	0.77
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.6
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38
Dimethyl phthalate	ND		ug/l	5.0	1.8
Benzo(a)anthracene	ND		ug/l	2.0	0.32
Benzo(a)pyrene	ND		ug/l	2.0	0.41

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 10/27/22 22:28
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/26/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG1704614-1					
Benzo(b)fluoranthene	ND		ug/l	2.0	0.35
Benzo(k)fluoranthene	ND		ug/l	2.0	0.37
Chrysene	ND		ug/l	2.0	0.34
Acenaphthylene	ND		ug/l	2.0	0.46
Anthracene	ND		ug/l	2.0	0.33
Benzo(ghi)perylene	ND		ug/l	2.0	0.30
Fluorene	ND		ug/l	2.0	0.41
Phenanthrene	ND		ug/l	2.0	0.33
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.32
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.40
Pyrene	ND		ug/l	2.0	0.28
Biphenyl	ND		ug/l	0.73	0.46
Aniline	ND		ug/l	2.0	0.68
4-Chloroaniline	ND		ug/l	5.0	1.3
Dibenzofuran	ND		ug/l	2.0	0.50
2-Methylnaphthalene	ND		ug/l	2.0	0.45
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.73
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	3.0
2-Nitrophenol	ND		ug/l	10	0.90
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
Pentachlorophenol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
2-Methylphenol	ND		ug/l	5.0	0.65
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.72
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
 Analytical Date: 10/27/22 22:28
 Analyst: SZ

Extraction Method: EPA 3510C
 Extraction Date: 10/26/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG1704614-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	62		15-110
Phenol-d6	47		15-110
Nitrobenzene-d5	63		30-130
2-Fluorobiphenyl	88		30-130
2,4,6-Tribromophenol	103		15-110
4-Terphenyl-d14	104		30-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E-SIM
Analytical Date: 11/09/22 17:27
Analyst: ALS

Extraction Method: EPA 3510C
Extraction Date: 10/26/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 01 Batch: WG1705106-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.01
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.08
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E-SIM
 Analytical Date: 11/09/22 17:27
 Analyst: ALS

Extraction Method: EPA 3510C
 Extraction Date: 10/26/22 21:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 01 Batch: WG1705106-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		15-110
Phenol-d6	50		15-110
Nitrobenzene-d5	127		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	68		15-110
4-Terphenyl-d14	88		30-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/01/22 22:23
Analyst: AC

Extraction Method: ALPHA 23528
Extraction Date: 11/01/22 05:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01 Batch: WG1706450-1 R					
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)	1.58	J	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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/01/22 22:23
Analyst: AC

Extraction Method: ALPHA 23528
Extraction Date: 11/01/22 05:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01 Batch: WG1706450-1 R					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	110		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		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)	105		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	108		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	110		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	101		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	112		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	85		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	109		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	42		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	83		22-136

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1704614-2 WG1704614-3								
Acenaphthene	103		82		40-140	23	Q	20
1,2,4-Trichlorobenzene	101		80		40-140	23	Q	20
Hexachlorobenzene	118		98		40-140	19		20
Bis(2-chloroethyl)ether	84		64		40-140	27	Q	20
2-Chloronaphthalene	103		81		40-140	24	Q	20
1,2-Dichlorobenzene	95		72		40-140	28	Q	20
1,3-Dichlorobenzene	89		72		40-140	21	Q	20
1,4-Dichlorobenzene	91		72		40-140	23	Q	20
3,3'-Dichlorobenzidine	100		86		40-140	15		20
2,4-Dinitrotoluene	114		94		40-140	19		20
2,6-Dinitrotoluene	113		91		40-140	22	Q	20
Azobenzene	95		76		40-140	22	Q	20
Fluoranthene	112		91		40-140	21	Q	20
4-Bromophenyl phenyl ether	128		98		40-140	27	Q	20
Bis(2-chloroisopropyl)ether	76		58		40-140	27	Q	20
Bis(2-chloroethoxy)methane	86		69		40-140	22	Q	20
Hexachlorobutadiene	97		77		40-140	23	Q	20
Hexachloroethane	85		65		40-140	27	Q	20
Isophorone	82		68		40-140	19		20
Naphthalene	95		76		40-140	22	Q	20
Nitrobenzene	84		66		40-140	24	Q	20
Bis(2-ethylhexyl)phthalate	122		100		40-140	20		20
Butyl benzyl phthalate	115		96		40-140	18		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1704614-2 WG1704614-3								
Di-n-butylphthalate	118		95		40-140	22	Q	20
Di-n-octylphthalate	126		104		40-140	19		20
Diethyl phthalate	114		92		40-140	21	Q	20
Dimethyl phthalate	108		89		40-140	19		20
Benzo(a)anthracene	120		98		40-140	20		20
Benzo(a)pyrene	119		100		40-140	17		20
Benzo(b)fluoranthene	116		97		40-140	18		20
Benzo(k)fluoranthene	120		99		40-140	19		20
Chrysene	110		91		40-140	19		20
Acenaphthylene	110		89		40-140	21	Q	20
Anthracene	109		90		40-140	19		20
Benzo(ghi)perylene	99		85		40-140	15		20
Fluorene	111		90		40-140	21	Q	20
Phenanthrene	104		86		40-140	19		20
Dibenzo(a,h)anthracene	104		91		40-140	13		20
Indeno(1,2,3-cd)pyrene	126		109		40-140	14		20
Pyrene	110		94		40-140	16		20
Biphenyl	107		87		40-140	21	Q	20
Aniline	61		46		40-140	28	Q	20
4-Chloroaniline	74		68		40-140	8		20
Dibenzofuran	111		88		40-140	23	Q	20
2-Methylnaphthalene	103		82		40-140	23	Q	20
Acetophenone	91		72		40-140	23	Q	20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1704614-2 WG1704614-3								
2,4,6-Trichlorophenol	121		97		30-130	22	Q	20
2-Chlorophenol	100		76		30-130	27	Q	20
2,4-Dichlorophenol	113		90		30-130	23	Q	20
2,4-Dimethylphenol	73		68		30-130	7		20
2-Nitrophenol	99		79		30-130	22	Q	20
4-Nitrophenol	84		68		30-130	21	Q	20
2,4-Dinitrophenol	105		88		30-130	18		20
Pentachlorophenol	95		74		30-130	25	Q	20
Phenol	70		55		30-130	24	Q	20
2-Methylphenol	88		72		30-130	20		20
3-Methylphenol/4-Methylphenol	88		71		30-130	21	Q	20
2,4,5-Trichlorophenol	124		101		30-130	20		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	90		71		15-110
Phenol-d6	69		57		15-110
Nitrobenzene-d5	88		72		30-130
2-Fluorobiphenyl	117		93		30-130
2,4,6-Tribromophenol	145	Q	118	Q	15-110
4-Terphenyl-d14	126		107		30-130

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01 Batch: WG1705106-2 WG1705106-3								
Acenaphthene	102		82		40-140	22	Q	20
2-Chloronaphthalene	109		90		40-140	19		20
Fluoranthene	107		90		40-140	17		20
Hexachlorobutadiene	96		79		40-140	19		20
Naphthalene	101		81		40-140	22	Q	20
Benzo(a)anthracene	109		92		40-140	17		20
Benzo(a)pyrene	113		95		40-140	17		20
Benzo(b)fluoranthene	118		100		40-140	17		20
Benzo(k)fluoranthene	122		98		40-140	22	Q	20
Chrysene	111		90		40-140	21	Q	20
Acenaphthylene	114		94		40-140	19		20
Anthracene	104		86		40-140	19		20
Benzo(ghi)perylene	114		98		40-140	15		20
Fluorene	109		91		40-140	18		20
Phenanthrene	105		87		40-140	19		20
Dibenzo(a,h)anthracene	124		106		40-140	16		20
Indeno(1,2,3-cd)pyrene	123		105		40-140	16		20
Pyrene	108		90		40-140	18		20
2-Methylnaphthalene	104		85		40-140	20		20
Pentachlorophenol	107		89		30-130	18		20
Hexachlorobenzene	115		96		40-140	18		20
Hexachloroethane	100		81		40-140	21	Q	20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01 Batch: WG1705106-2 WG1705106-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	18		15		15-110
Phenol-d6	17		14	Q	15-110
Nitrobenzene-d5	34		27	Q	30-130
2-Fluorobiphenyl	24	Q	20	Q	30-130
2,4,6-Tribromophenol	31		28		15-110
4-Terphenyl-d14	23	Q	20	Q	30-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

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: WG1706450-2								
Perfluorobutanoic Acid (PFBA)	96		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	96		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	96		-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	105		-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	94		-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	97		-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	99		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	108		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	94		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	119		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	107		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	99		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	112		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	106		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	113		-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	105		-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	99		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	101		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	105		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	96		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	96		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	101		-		67-153	-		30

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 Batch: WG1706450-2								
Perfluorotridecanoic Acid (PFTTrDA)	113		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	106		-		59-182	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCS %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	107				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	122				70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	113				12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	111				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	110				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	108				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	100				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	104				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	84				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	54				5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	105				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91				22-136

Matrix Spike Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

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: WG1706450-3 QC Sample: L2258572-02 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	0.503J	38.5	37.9	97		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	ND	38.5	37.8	98		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	34.2	34.4	101		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	36.2	39.0	108		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	ND	38.5	37.3	97		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	36.3	36.0	99		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	38.5	38.1	99		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	35.2	38.1	108		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	ND	38.5	37.1	96		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	36.7	41.3	113		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	36.8	41.1	112		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	ND	38.5	38.8	101		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	35.8	39.8	111		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	38.5	37.9	98		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	37	41.9	113		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	37.1	37.7	102		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	38.5	37.8	98		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	38.5	36.9	96		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	37.2	38.5	103		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	38.5	36.9F	96		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	38.5	38.4	100		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	38.5	39.5	102		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

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: WG1706450-3 QC Sample: L2258572-02 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	38.5	45.2	117		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	38.5	42.4	110		-	-		59-182	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	376	367	98		-	-		57-162	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	36.5	33.8	93		-	-		69-143	-		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	38.5	39.0	101		-	-		40-167	-		30
Perfluorooctadecanoic Acid (PFODA)	ND	38.5	36.2	94		-	-		10-119	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	104				10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	104				12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	95				14-147
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	99				10-165
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96				55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	79				22-136
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	54				10-206

Matrix Spike Analysis**Batch Quality Control****Project Name:** SOUTH HIGHLAND**Project Number:** 22098**Lab Number:** L2259120**Report Date:** 11/21/22

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: WG1706450-3 QC Sample: L2258572-02 Client ID: MS Sample												

Surrogate (Extracted Internal Standard)	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
Perfluoro[13C4]Butanoic Acid (MPFBA)	97				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8				5-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111				70-131

Lab Duplicate Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1706450-4 QC Sample: L2258572-03 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/l	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	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: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1706450-4 QC Sample: L2258572-03 Client ID: DUP Sample						
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
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	ND	ng/l	NC		30
Perfluorooctadecanoic Acid (PFODA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	97		106		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		113		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115		116		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	103		101		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	108		108		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		103		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114		115		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	106		108		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		100		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94		93		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		99		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		96		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	104		107		10-162

Lab Duplicate Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1706450-4 QC Sample: L2258572-03 Client ID: DUP Sample						

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	72		81		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	99		102		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		14		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		74		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		93		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	78		89		22-136
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	106		113		10-165
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	51		57		10-206

SEMIVOLATILES

High Resolution Mass Spectrometry

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

SAMPLE RESULTS

Lab ID: L2259120-01
Client ID: DWW-1
Sample Location: TRURO

Date Collected: 10/21/22 12:05
Date Received: 10/21/22
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 1,8290A
Analytical Date: 11/01/22 21:32
Analyst: CP

Extraction Method: EPA 8290A
Extraction Date: 10/27/22 14:35
Cleanup Method: EPA 8290A
Cleanup Date: 10/31/22

Parameter	Result	Qualifier	EMPC	Units	RL	MDL	Dilution Factor
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab							
2,3,7,8-TCDD	ND			pg/l	9.43	1.96	1
1,2,3,7,8-PeCDD	ND			pg/l	47.2	9.79	1
1,2,3,4,7,8-HxCDD	ND			pg/l	47.2	11.8	1
1,2,3,6,7,8-HxCDD	ND			pg/l	47.2	14.7	1
1,2,3,7,8,9-HxCDD	ND			pg/l	47.2	13.8	1
1,2,3,4,6,7,8-HpCDD	ND			pg/l	47.2	13.7	1
OCDD	ND			pg/l	94.3	24.0	1
2,3,7,8-TCDF	ND			pg/l	9.43	2.89	1
1,2,3,7,8-PeCDF	ND			pg/l	47.2	6.60	1
2,3,4,7,8-PeCDF	ND			pg/l	47.2	9.87	1
1,2,3,4,7,8-HxCDF	ND			pg/l	47.2	10.5	1
1,2,3,6,7,8-HxCDF	ND			pg/l	47.2	15.0	1
1,2,3,7,8,9-HxCDF	ND			pg/l	47.2	15.5	1
2,3,4,6,7,8-HxCDF	ND			pg/l	47.2	14.9	1
1,2,3,4,6,7,8-HpCDF	ND			pg/l	47.2	12.7	1
1,2,3,4,7,8,9-HpCDF	ND			pg/l	47.2	12.0	1
OCDF	ND			pg/l	94.3	30.6	1
Total TCDD	ND			pg/l	9.43	1.96	1
Total PeCDD	ND			pg/l	47.2	9.79	1
Total HxCDD	ND			pg/l	47.2	11.8	1
Total HpCDD	ND			pg/l	47.2	13.7	1
Total TCDF	ND			pg/l	9.43	2.89	1
Total PeCDF	ND			pg/l	47.2	6.60	1
Total HxCDF	ND			pg/l	47.2	10.5	1
Total HpCDF	ND			pg/l	47.2	12.7	1
Total PCDD	ND			pg/l	9.43	1.96	1
Total PCDF	ND			pg/l	9.43	2.89	1
Toxic Equivalency (TEQ)	ND			pg/l	0.028	0.028	1

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01

Date Collected: 10/21/22 12:05

Client ID: DWW-1

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	EMPC	Units	RL	MDL	Dilution Factor
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Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab

Surrogate/Cleanup Standard	% Recovery	Qualifier	Acceptance Criteria
13C12-2,3,7,8-TCDF	63		40-135
13C12-2,3,7,8-TCDD	57		40-135
13C12-1,2,3,7,8-PeCDF	67		40-135
13C12-2,3,4,7,8-PeCDF	66		40-135
13C12-1,2,3,7,8-PeCDD	71		40-135
13C12-1,2,3,4,7,8-HxCDF	74		40-135
13C12-1,2,3,6,7,8-HxCDF	67		40-135
13C12-2,3,4,6,7,8-HxCDF	68		40-135
13C12-1,2,3,7,8,9-HxCDF	73		40-135
13C12-1,2,3,4,7,8-HxCDD	62		40-135
13C12-1,2,3,6,7,8-HxCDD	62		40-135
13C12-1,2,3,4,6,7,8-HpCDF	72		40-135
13C12-1,2,3,4,7,8,9-HpCDF	79		40-135
13C12-1,2,3,4,6,7,8-HpCDD	75		40-135
13C12-OCDD	68		40-135
37CL4-2,3,7,8-TCDD	110		40-135

Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8290A
 Analytical Date: 11/01/22 14:02
 Analyst: CP

Extraction Method: EPA 8290A
 Extraction Date: 10/27/22 14:35
 Cleanup Method: EPA 8290A
 Cleanup Date: 10/31/22

Parameter	Result	Qualifier	EMPC	Units	RL	MDL
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab for sample(s): 01 Batch: WG1704983-1						
2,3,7,8-TCDD	ND			pg/l	10.0	2.08
1,2,3,7,8-PeCDD	ND			pg/l	50.0	10.4
1,2,3,4,7,8-HxCDD	ND			pg/l	50.0	12.5
1,2,3,6,7,8-HxCDD	ND			pg/l	50.0	15.6
1,2,3,7,8,9-HxCDD	ND			pg/l	50.0	14.6
1,2,3,4,6,7,8-HpCDD	ND			pg/l	50.0	14.5
OCDD	ND			pg/l	100	25.4
2,3,7,8-TCDF	ND			pg/l	10.0	3.06
1,2,3,7,8-PeCDF	ND			pg/l	50.0	7.00
2,3,4,7,8-PeCDF	ND			pg/l	50.0	10.5
1,2,3,4,7,8-HxCDF	ND			pg/l	50.0	11.1
1,2,3,6,7,8-HxCDF	ND			pg/l	50.0	15.9
1,2,3,7,8,9-HxCDF	ND			pg/l	50.0	16.5
2,3,4,6,7,8-HxCDF	ND			pg/l	50.0	15.8
1,2,3,4,6,7,8-HpCDF	ND			pg/l	50.0	13.4
1,2,3,4,7,8,9-HpCDF	ND			pg/l	50.0	12.7
OCDF	ND			pg/l	100	32.4
Total TCDD	ND			pg/l	10.0	2.08
Total PeCDD	ND			pg/l	50.0	10.4
Total HxCDD	ND			pg/l	50.0	12.5
Total HpCDD	ND			pg/l	50.0	14.5
Total TCDF	ND			pg/l	10.0	3.06
Total PeCDF	ND			pg/l	50.0	7.00
Total HxCDF	ND			pg/l	50.0	11.1
Total HpCDF	ND			pg/l	50.0	13.4
Total PCDD	ND			pg/l	10.0	2.08
Total PCDF	ND			pg/l	10.0	3.06
Toxic Equivalency (TEQ)	ND			pg/l	0.030	0.030

Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8290A
 Analytical Date: 11/01/22 14:02
 Analyst: CP

Extraction Method: EPA 8290A
 Extraction Date: 10/27/22 14:35
 Cleanup Method: EPA 8290A
 Cleanup Date: 10/31/22

Parameter	Result	Qualifier	EMPC	Units	RL	MDL
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab for sample(s): 01 Batch: WG1704983-1						

Surrogate/Cleanup Standard	%Recovery	Qualifier	Acceptance Criteria
13C12-2,3,7,8-TCDF	71		40-135
13C12-2,3,7,8-TCDD	63		40-135
13C12-1,2,3,7,8-PeCDF	67		40-135
13C12-2,3,4,7,8-PeCDF	61		40-135
13C12-1,2,3,7,8-PeCDD	72		40-135
13C12-1,2,3,4,7,8-HxCDF	82		40-135
13C12-1,2,3,6,7,8-HxCDF	79		40-135
13C12-2,3,4,6,7,8-HxCDF	73		40-135
13C12-1,2,3,7,8,9-HxCDF	76		40-135
13C12-1,2,3,4,7,8-HxCDD	63		40-135
13C12-1,2,3,6,7,8-HxCDD	67		40-135
13C12-1,2,3,4,6,7,8-HpCDF	79		40-135
13C12-1,2,3,4,7,8,9-HpCDF	78		40-135
13C12-1,2,3,4,6,7,8-HpCDD	76		40-135
13C12-OCDD	62		40-135
37CL4-2,3,7,8-TCDD	111		40-135

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab Associated sample(s): 01 Batch: WG1704983-2 WG1704983-3								
2,3,7,8-TCDD	103		108		71-125	5		25
1,2,3,7,8-PeCDD	95		95		76-121	0		25
1,2,3,4,7,8-HxCDD	113		119		80-126	5		25
1,2,3,6,7,8-HxCDD	105		105		78-134	0		25
1,2,3,7,8,9-HxCDD	106		106		76-137	0		25
1,2,3,4,6,7,8-HpCDD	96		96		79-122	0		25
OCDD	110		107		81-135	3		25
2,3,7,8-TCDF	106		112		72-138	6		25
1,2,3,7,8-PeCDF	99		102		82-130	3		25
2,3,4,7,8-PeCDF	94		98		77-129	4		25
1,2,3,4,7,8-HxCDF	110		115		80-130	4		25
1,2,3,6,7,8-HxCDF	108		108		78-134	0		25
1,2,3,7,8,9-HxCDF	117		113		83-130	3		25
2,3,4,6,7,8-HxCDF	107		111		81-130	4		25
1,2,3,4,6,7,8-HpCDF	113		113		81-130	0		25
1,2,3,4,7,8,9-HpCDF	116		110		77-128	5		25
OCDF	126		120		66-150	5		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab Associated sample(s): 01 Batch: WG1704983-2 WG1704983-3

Surrogate/Cleanup Standard	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
13C12-2,3,7,8-TCDF	65		55		40-135
13C12-2,3,7,8-TCDD	59		54		40-135
13C12-1,2,3,7,8-PeCDF	65		58		40-135
13C12-2,3,4,7,8-PeCDF	64		55		40-135
13C12-1,2,3,7,8-PeCDD	73		66		40-135
13C12-1,2,3,4,7,8-HxCDF	74		63		40-135
13C12-1,2,3,6,7,8-HxCDF	73		65		40-135
13C12-2,3,4,6,7,8-HxCDF	71		58		40-135
13C12-1,2,3,7,8,9-HxCDF	75		69		40-135
13C12-1,2,3,4,7,8-HxCDD	61		52		40-135
13C12-1,2,3,6,7,8-HxCDD	66		59		40-135
13C12-1,2,3,4,6,7,8-HpCDF	73		66		40-135
13C12-1,2,3,4,7,8,9-HpCDF	75		72		40-135
13C12-1,2,3,4,6,7,8-HpCDD	73		67		40-135
13C12-OCDD	62		60		40-135
37CL4-2,3,7,8-TCDD	108		109		40-135

PETROLEUM HYDROCARBONS

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01

Client ID: DWW-1

Sample Location: TRURO

Date Collected: 10/21/22 12:05

Date Received: 10/21/22

Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Analytical Method: 135,EPH-19-2.1

Analytical Date: 11/04/22 15:07

Analyst: SC

Extraction Method: EPA 3510C

Extraction Date: 11/03/22 11:39

Cleanup Method1: EPH-19-2.1

Cleanup Date1: 11/04/22

Quality Control Information

Condition of sample received:

Satisfactory

Aqueous Preservative:

Laboratory Provided Preserved
Container

Sample Temperature upon receipt:

Received on Ice

Sample Extraction method:

Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Extractable Petroleum Hydrocarbons - Westborough Lab

C9-C18 Aliphatics	ND		ug/l	100	100.	1
C19-C36 Aliphatics	ND		ug/l	100	100.	1
C11-C22 Aromatics	ND		ug/l	100	100.	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	56		40-140
o-Terphenyl	72		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	78		40-140

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01 D

Client ID: DWW-1

Sample Location: TRURO

Date Collected: 10/21/22 12:05

Date Received: 10/21/22

Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Analytical Method: 131, VPH-18-2.1

Analytical Date: 11/02/22 13:48

Analyst: BAD

Trap: EST, Carboxen B/Carboxen 1000&1001

Analytical Column: Restek, RTX-502.2,
105m, 0.53ID, 3um**Quality Control Information**

Condition of sample received:

Satisfactory

Aqueous Preservative:

Laboratory Provided Preserved
Container

Sample Temperature upon receipt:

Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	696		ug/l	200	200.	2
C9-C12 Aliphatics	ND		ug/l	200	200.	2
C9-C10 Aromatics	ND		ug/l	200	200.	2
C5-C8 Aliphatics, Adjusted	696		ug/l	200	200.	2
C9-C12 Aliphatics, Adjusted	ND		ug/l	200	200.	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	113		70-130
2,5-Dibromotoluene-FID	103		70-130



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 131, VPH-18-2.1
Analytical Date: 11/02/22 13:18
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG1707734-4					
C5-C8 Aliphatics	ND		ug/l	100	100.
C9-C12 Aliphatics	ND		ug/l	100	100.
C9-C10 Aromatics	ND		ug/l	100	100.
C5-C8 Aliphatics, Adjusted	ND		ug/l	100	100.
C9-C12 Aliphatics, Adjusted	ND		ug/l	100	100.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	106		70-130
2,5-Dibromotoluene-FID	97		70-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 11/04/22 10:06
Analyst: SR

Extraction Method: EPA 3510C
Extraction Date: 11/03/22 11:39
Cleanup Method: EPH-19-2.1
Cleanup Date: 11/04/22

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG1707768-1					
C9-C18 Aliphatics	ND		ug/l	100	100.
C19-C36 Aliphatics	ND		ug/l	100	100.
C11-C22 Aromatics	ND		ug/l	100	100.
C11-C22 Aromatics, Adjusted	ND		ug/l	100	100.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	65		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	77		40-140
2-Bromonaphthalene	80		40-140

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1707734-2 WG1707734-3								
C5-C8 Aliphatics	101		109		70-130	8		25
C9-C12 Aliphatics	104		112		70-130	7		25
C9-C10 Aromatics	105		114		70-130	8		25
Benzene	103		111		70-130	7		25
Toluene	105		113		70-130	7		25
Ethylbenzene	107		115		70-130	7		25
p/m-Xylene	107		115		70-130	7		25
o-Xylene	107		115		70-130	7		25
Methyl tert butyl ether	96		102		70-130	6		25
Naphthalene	102		115		70-130	12		25
1,2,4-Trimethylbenzene	105		114		70-130	8		25
Pentane	100		110		70-130	10		25
2-Methylpentane	104		112		70-130	7		25
2,2,4-Trimethylpentane	99		107		70-130	8		25
n-Nonane	103		111		30-130	7		25
n-Decane	107		115		70-130	7		25
n-Butylcyclohexane	103		111		70-130	7		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	114		121		70-130
2,5-Dibromotoluene-FID	104		110		70-130

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1707768-2 WG1707768-3								
C9-C18 Aliphatics	72		89		40-140	21		25
C19-C36 Aliphatics	75		78		40-140	4		25
C11-C22 Aromatics	80		74		40-140	8		25
Naphthalene	67		61		40-140	9		25
2-Methylnaphthalene	70		64		40-140	9		25
Acenaphthylene	71		65		40-140	9		25
Acenaphthene	74		67		40-140	10		25
Fluorene	76		69		40-140	10		25
Phenanthrene	76		71		40-140	7		25
Anthracene	77		72		40-140	7		25
Fluoranthene	79		74		40-140	7		25
Pyrene	79		74		40-140	7		25
Benzo(a)anthracene	81		76		40-140	6		25
Chrysene	83		78		40-140	6		25
Benzo(b)fluoranthene	78		73		40-140	7		25
Benzo(k)fluoranthene	76		71		40-140	7		25
Benzo(a)pyrene	81		75		40-140	8		25
Indeno(1,2,3-cd)Pyrene	78		72		40-140	8		25
Dibenzo(a,h)anthracene	84		78		40-140	7		25
Benzo(ghi)perylene	73		67		40-140	9		25

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1707768-2 WG1707768-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	63		67		40-140
o-Terphenyl	73		68		40-140
2-Fluorobiphenyl	76		70		40-140
2-Bromonaphthalene	79		73		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

PCBS

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

SAMPLE RESULTS

Lab ID: L2259120-01
Client ID: DWW-1
Sample Location: TRURO

Date Collected: 10/21/22 12:05
Date Received: 10/21/22
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 97,8082A
Analytical Date: 11/10/22 13:25
Analyst: MEO

Extraction Method: EPA 3510C
Extraction Date: 11/09/22 20:00
Cleanup Method: EPA 3665A
Cleanup Date: 11/10/22
Cleanup Method: EPA 3660B
Cleanup Date: 11/10/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	0.250	1	A
Aroclor 1221	ND		ug/l	0.250	0.250	1	A
Aroclor 1232	ND		ug/l	0.250	0.250	1	A
Aroclor 1242	ND		ug/l	0.250	0.250	1	A
Aroclor 1248	ND		ug/l	0.250	0.250	1	A
Aroclor 1254	ND		ug/l	0.250	0.250	1	A
Aroclor 1260	ND		ug/l	0.250	0.250	1	A
Aroclor 1262	ND		ug/l	0.250	0.250	1	A
Aroclor 1268	ND		ug/l	0.250	0.250	1	A
PCBs, Total	ND		ug/l	0.250	0.250	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	96		30-150	A
Decachlorobiphenyl	108		30-150	A
2,4,5,6-Tetrachloro-m-xylene	93		30-150	B
Decachlorobiphenyl	112		30-150	B

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8082A
Analytical Date: 11/10/22 12:58
Analyst: MEO

Extraction Method: EPA 3510C
Extraction Date: 11/09/22 20:00
Cleanup Method: EPA 3665A
Cleanup Date: 11/10/22
Cleanup Method: EPA 3660B
Cleanup Date: 11/10/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01 Batch: WG1710283-1						
Aroclor 1016	ND		ug/l	0.250	0.250	A
Aroclor 1221	ND		ug/l	0.250	0.250	A
Aroclor 1232	ND		ug/l	0.250	0.250	A
Aroclor 1242	ND		ug/l	0.250	0.250	A
Aroclor 1248	ND		ug/l	0.250	0.250	A
Aroclor 1254	ND		ug/l	0.250	0.250	A
Aroclor 1260	ND		ug/l	0.250	0.250	A
Aroclor 1262	ND		ug/l	0.250	0.250	A
Aroclor 1268	ND		ug/l	0.250	0.250	A
PCBs, Total	ND		ug/l	0.250	0.250	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	97		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	100		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01 Batch: WG1710283-2 WG1710283-3									
Aroclor 1016	87		87		40-140	1		20	A
Aroclor 1260	80		79		40-140	1		20	A

Surrogate	LCS %Recovery	Qual	LCS %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		84		30-150	A
Decachlorobiphenyl	98		95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	83		85		30-150	B
Decachlorobiphenyl	98		97		30-150	B

METALS

Project Name: SOUTH HIGHLAND**Lab Number:** L2259120**Project Number:** 22098**Report Date:** 11/21/22**SAMPLE RESULTS**

Lab ID: L2259120-01

Date Collected: 10/21/22 12:05

Client ID: DWW-1

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0040	0.0040	1	11/18/22 12:59	11/20/22 14:08	EPA 3005A	97,6020B	EGW
Arsenic, Dissolved	ND		mg/l	0.0050	0.0019	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Barium, Dissolved	ND		mg/l	0.0100	0.0021	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Beryllium, Dissolved	ND		mg/l	0.0005	0.0005	1	11/18/22 12:59	11/20/22 14:08	EPA 3005A	97,6020B	EGW
Cadmium, Dissolved	ND		mg/l	0.0040	0.0010	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Chromium, Dissolved	ND		mg/l	0.0100	0.0021	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Lead, Dissolved	ND		mg/l	0.0100	0.0027	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Mercury, Dissolved	ND		mg/l	0.0002	0.0002	1	11/18/22 13:43	11/20/22 16:04	EPA 7470A	97,7470A	TAA
Nickel, Dissolved	ND		mg/l	0.0250	0.0024	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Selenium, Dissolved	ND		mg/l	0.0100	0.0035	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Silver, Dissolved	ND		mg/l	0.0070	0.0028	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Thallium, Dissolved	ND		mg/l	0.0010	0.0010	1	11/18/22 12:59	11/20/22 14:08	EPA 3005A	97,6020B	EGW
Vanadium, Dissolved	ND		mg/l	0.0100	0.0020	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW
Zinc, Dissolved	0.0127	J	mg/l	0.0500	0.0021	1	11/18/22 12:59	11/21/22 14:55	EPA 3005A	97,6010D	AMW



Project Name: SOUTH HIGHLAND

Lab Number: L2259120

Project Number: 22098

Report Date: 11/21/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1714063-1										
Arsenic, Dissolved	ND		mg/l	0.0050	0.0019	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Barium, Dissolved	ND		mg/l	0.0100	0.0021	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Cadmium, Dissolved	ND		mg/l	0.0040	0.0010	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Chromium, Dissolved	ND		mg/l	0.0100	0.0021	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Lead, Dissolved	ND		mg/l	0.0100	0.0027	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Nickel, Dissolved	ND		mg/l	0.0250	0.0024	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Selenium, Dissolved	ND		mg/l	0.0100	0.0035	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Silver, Dissolved	ND		mg/l	0.0070	0.0028	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Vanadium, Dissolved	ND		mg/l	0.0100	0.0020	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW
Zinc, Dissolved	ND		mg/l	0.0500	0.0021	1	11/18/22 12:59	11/21/22 14:45	97,6010D	AMW

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1714064-1										
Mercury, Dissolved	ND		mg/l	0.0002	0.0002	1	11/18/22 13:43	11/20/22 15:43	97,7470A	TAA

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1714073-1										
Antimony, Dissolved	ND		mg/l	0.0040	0.0040	1	11/18/22 12:59	11/20/22 13:38	97,6020B	EGW
Beryllium, Dissolved	ND		mg/l	0.0005	0.0005	1	11/18/22 12:59	11/20/22 13:38	97,6020B	EGW
Thallium, Dissolved	ND		mg/l	0.0010	0.0010	1	11/18/22 12:59	11/20/22 13:38	97,6020B	EGW



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259120

Report Date: 11/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1714063-2 WG1714063-3								
Arsenic, Dissolved	103		102		80-120	1		20
Barium, Dissolved	98		100		80-120	2		20
Cadmium, Dissolved	100		95		80-120	5		20
Chromium, Dissolved	96		92		80-120	4		20
Lead, Dissolved	97		95		80-120	2		20
Nickel, Dissolved	95		90		80-120	5		20
Selenium, Dissolved	102		101		80-120	1		20
Silver, Dissolved	103		97		80-120	6		20
Vanadium, Dissolved	99		94		80-120	5		20
Zinc, Dissolved	96		92		80-120	4		20
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1714064-2 WG1714064-3								
Mercury, Dissolved	97		96		80-120	1		20
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1714073-2 WG1714073-3								
Antimony, Dissolved	81		92		80-120	13		20
Beryllium, Dissolved	98		96		80-120	2		20
Thallium, Dissolved	92		92		80-120	0		20

Project Name: SOUTH HIGHLAND
Project Number: 22098

Serial_No:11212217:54
Lab Number: L2259120
Report Date: 11/21/22

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(*)
L2259120-01A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2259120-01B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2259120-01C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2259120-01D	Vial HCl preserved	A	NA		4.4	Y	Absent		VPH-18(14)
L2259120-01E	Vial HCl preserved	A	NA		4.4	Y	Absent		VPH-18(14)
L2259120-01F	Vial HCl preserved	A	NA		4.4	Y	Absent		VPH-18(14)
L2259120-01G	Amber 120ml unpreserved	A	7	7	4.4	Y	Absent		MCP-8082-10-LVI(365)
L2259120-01H	Amber 120ml unpreserved	A	7	7	4.4	Y	Absent		MCP-8082-10-LVI(365)
L2259120-01I	Plastic 250ml unpreserved	A	NA		4.4	Y	Absent		A2-537-ISOTOPE(14)
L2259120-01J	Plastic 250ml unpreserved	A	NA		4.4	Y	Absent		A2-537-ISOTOPE(14)
L2259120-01K	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		MCP-8270SIM-21-LVI(7),MCP-8270-21-LVI(7)
L2259120-01L	Amber 250ml unpreserved	A	7	7	4.4	Y	Absent		MCP-8270SIM-21-LVI(7),MCP-8270-21-LVI(7)
L2259120-01M	Plastic 250ml HNO3 preserved split	A	7	<2	4.4	N	Absent		ARCHIVE()
L2259120-01N	Amber 500ml unpreserved	A	7	7	4.4	Y	Absent		A2-DIOXIN-8290(365)
L2259120-01O	Amber 500ml unpreserved	A	7	7	4.4	Y	Absent		A2-DIOXIN-8290(365)
L2259120-01P	Amber 1000ml HCl preserved	A	<2	<2	4.4	Y	Absent		EPH-20(14)
L2259120-01Q	Amber 1000ml HCl preserved	A	<2	<2	4.4	Y	Absent		EPH-20(14)
L2259120-01R	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-CD-6010S-10(180),MCP-BE-6020S-10(180),MCP-AG-6010S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-ZN-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-TL-6020S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-V-6010S-10(180),MCP-SE-6010S-10(180),MCP-NI-6010S-10(180)

Project Name: SOUTH HIGHLAND
Project Number: 22098

Serial_No:11212217:54
Lab Number: L2259120
Report Date: 11/21/22

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: SOUTH HIGHLAND

Project Number: 22098

Serial_No:11212217:54
Lab Number: L2259120

Report Date: 11/21/22

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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

Data Qualifiers

Identified Compounds (TICs).

- 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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259120
Report Date: 11/21/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.
- 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.
- 135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.
- 141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

LIMITATION OF LIABILITIES

Alpha Analytical 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 Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical 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 Alpha Analytical.

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

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

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.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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 332: Perchlorate; **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), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

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 Alpha Project Manager.

Method Blank Summary
Form 4
Volatiles

Client	: Horseley & Witten, Inc.	Lab Number	: L2259120
Project Name	: SOUTH HIGHLAND	Project Number	: 22098
Lab Sample ID	: WG1707538-5	Lab File ID	: VQ221102P04
Instrument ID	: QUIMBY		
Matrix	: WATER	Analysis Date	: 11/02/22 19:16

Client Sample No.	Lab Sample ID	Analysis Date
WG1707538-3LCS	WG1707538-3	11/02/22 18:08
WG1707538-4LCSD	WG1707538-4	11/02/22 18:31
DWW-1	L2259120-01D	11/02/22 20:02

Method Blank Summary
Form 4
Volatiles

Client	: Horseley & Witten, Inc.	Lab Number	: L2259120
Project Name	: SOUTH HIGHLAND	Project Number	: 22098
Lab Sample ID	: WG1707740-5	Lab File ID	: VQ221103A04
Instrument ID	: QUIMBY		
Matrix	: WATER	Analysis Date	: 11/03/22 05:59

Client Sample No.	Lab Sample ID	Analysis Date
WG1707740-3LCS	WG1707740-3	11/03/22 04:51
WG1707740-4LCSD	WG1707740-4	11/03/22 05:13
DWW-1	L2259120-01D2	11/03/22 06:21

Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : QUIMBY
 Lab File ID : VQ221102P01
 Sample No : WG1707538-2
 Channel :

Lab Number : L2259120
 Project Number : 22098
 Calibration Date : 11/02/22 18:08
 Init. Calib. Date(s) : 09/15/22 09/15/22
 Init. Calib. Times : 06:04 08:44

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	136	0
Dichlorodifluoromethane	0.258	0.248	-	3.9	20	124	0
Chloromethane	0.281	0.359	-	-27.8*	20	173	0
Vinyl chloride	0.232	0.299	-	-28.9*	20	172	0
Bromomethane	0.127	0.111	-	12.6	20	121	0
Chloroethane	0.142	0.169	-	-19	20	160	0
Trichlorofluoromethane	0.392	0.388	-	1	20	129	0
Ethyl ether	0.113	0.095	-	15.9	20	117	0
1,1-Dichloroethene	0.22	0.24	-	-9.1	20	147	0
Carbon disulfide	0.529	0.437	-	17.4	20	108	0
Methylene chloride	0.242	0.26	-	-7.4	20	148	0
Acetone	0.049	0.046	-	6.1	20	119	-.01
trans-1,2-Dichloroethene	0.228	0.257	-	-12.7	20	151	0
Methyl tert-butyl ether	0.561	0.422	-	24.8*	20	102	-.01
Diisopropyl ether	0.817	0.823	-	-0.7	20	140	-.01
1,1-Dichloroethane	0.479	0.553	-	-15.4	20	155	0
Ethyl tert-butyl ether	0.732	0.638	-	12.8	20	123	0
cis-1,2-Dichloroethene	0.258	0.273	-	-5.8	20	145	0
2,2-Dichloropropane	0.464	0.462	-	0.4	20	140	0
Bromochloromethane	0.118	0.12	-	-1.7	20	133	0
Chloroform	0.446	0.465	-	-4.3	20	142	0
Carbon tetrachloride	0.378	0.356	-	5.8	20	124	0
Tetrahydrofuran	0.066	0.058	-	12.1	20	120	0
Dibromofluoromethane	0.264	0.268	-	-1.5	20	139	0
1,1,1-Trichloroethane	0.41	0.411	-	-0.2	20	135	-.01
2-Butanone	0.085	0.06	-	29.4*	20	96	0
1,1-Dichloropropene	0.346	0.334	-	3.5	20	129	0
Benzene	0.956	1.005	-	-5.1	20	139	-.01
tert-Amyl methyl ether	0.621	0.467	-	24.8*	20	108	0
1,2-Dichloroethane-d4	0.331	0.311	-	6	20	129	0
1,2-Dichloroethane	0.351	0.317	-	9.7	20	124	0
Trichloroethene	0.246	0.238	-	3.3	20	129	0
Dibromomethane	10	8.993	-	10.1	20	119	0
1,2-Dichloropropane	0.254	0.267	-	-5.1	20	142	0
Bromodichloromethane	0.353	0.314	-	11	20	122	0
1,4-Dioxane	0.00147	0.0017*	-	-15.6	20	152	0
cis-1,3-Dichloropropene	0.419	0.357	-	14.8	20	115	-.01
Chlorobenzene-d5	1	1	-	0	20	129	0
Toluene-d8	1.326	1.375	-	-3.7	20	137	0
Toluene	0.794	0.841	-	-5.9	20	139	0
4-Methyl-2-pentanone	0.079	0.064	-	19	20	109	0
Tetrachloroethene	0.329	0.334	-	-1.5	20	135	0
trans-1,3-Dichloropropene	0.498	0.408	-	18.1	20	108	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : QUIMBY
 Lab File ID : VQ221102P01
 Sample No : WG1707538-2
 Channel :

Lab Number : L2259120
 Project Number : 22098
 Calibration Date : 11/02/22 18:08
 Init. Calib. Date(s) : 09/15/22 09/15/22
 Init. Calib. Times : 06:04 08:44

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,1,2-Trichloroethane	0.205	0.171*	-	16.6	20	113	0
Chlorodibromomethane	0.313	0.255	-	18.5	20	107	0
1,3-Dichloropropane	0.44	0.392	-	10.9	20	117	0
1,2-Dibromoethane	0.231	0.195*	-	15.6	20	111	0
2-Hexanone	0.16	0.119	-	25.6*	20	99	0
Chlorobenzene	0.9	0.891	-	1	20	130	0
Ethylbenzene	1.57	1.637	-	-4.3	20	132	0
1,1,1,2-Tetrachloroethane	0.334	0.281	-	15.9	20	109	0
p/m Xylene	0.607	0.68	-	-12	20	140	0
o Xylene	0.578	0.635	-	-9.9	20	136	0
Styrene	0.978	1.007	-	-3	20	129	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	142	0
Bromoform	0.359	0.249	-	30.6*	20	100	0
Isopropylbenzene	3.124	3.025	-	3.2	20	132	0
4-Bromofluorobenzene	1.005	0.942	-	6.3	20	132	0
Bromobenzene	0.752	0.667	-	11.3	20	126	0
n-Propylbenzene	3.707	3.689	-	0.5	20	135	0
1,1,2,2-Tetrachloroethane	0.573	0.425	-	25.8*	20	112	0
2-Chlorotoluene	2.595	2.495	-	3.9	20	132	0
1,3,5-Trimethylbenzene	2.747	2.563	-	6.7	20	130	0
1,2,3-Trichloropropane	0.496	0.358	-	27.8*	20	105	0
4-Chlorotoluene	2.344	2.286	-	2.5	20	136	0
tert-Butylbenzene	2.391	2.396	-	-0.2	20	136	0
1,2,4-Trimethylbenzene	2.688	2.495	-	7.2	20	129	0
sec-Butylbenzene	3.438	3.455	-	-0.5	20	135	0
p-Isopropyltoluene	3.085	3.08	-	0.2	20	136	0
1,3-Dichlorobenzene	1.489	1.449	-	2.7	20	138	0
1,4-Dichlorobenzene	1.469	1.424	-	3.1	20	135	0
n-Butylbenzene	2.654	2.591	-	2.4	20	134	0
1,2-Dichlorobenzene	1.377	1.304	-	5.3	20	133	0
1,2-Dibromo-3-chloropropan	0.101	0.068	-	32.7*	20	101	0
Hexachlorobutadiene	0.518	0.479	-	7.5	20	132	0
1,2,4-Trichlorobenzene	1.039	0.872	-	16.1	20	122	0
Naphthalene	2.112	1.667	-	21.1*	20	114	0
1,2,3-Trichlorobenzene	0.911	0.777	-	14.7	20	124	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : QUIMBY
 Lab File ID : VQ221103A01
 Sample No : WG1707740-2
 Channel :

Lab Number : L2259120
 Project Number : 22098
 Calibration Date : 11/03/22 04:51
 Init. Calib. Date(s) : 09/15/22 09/15/22
 Init. Calib. Times : 06:04 08:44

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	121	0
Tetrahydrofuran	0.066	0.061	-	7.6	20	112	0
Dibromofluoromethane	0.264	0.285	-	-8	20	132	-.01
1,2-Dichloroethane-d4	0.331	0.322	-	2.7	20	119	0
Chlorobenzene-d5	1	1	-	0	20	118	0
Toluene-d8	1.326	1.38	-	-4.1	20	125	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	132	0
4-Bromofluorobenzene	1.005	0.933	-	7.2	20	121	0

* Value outside of QC limits.



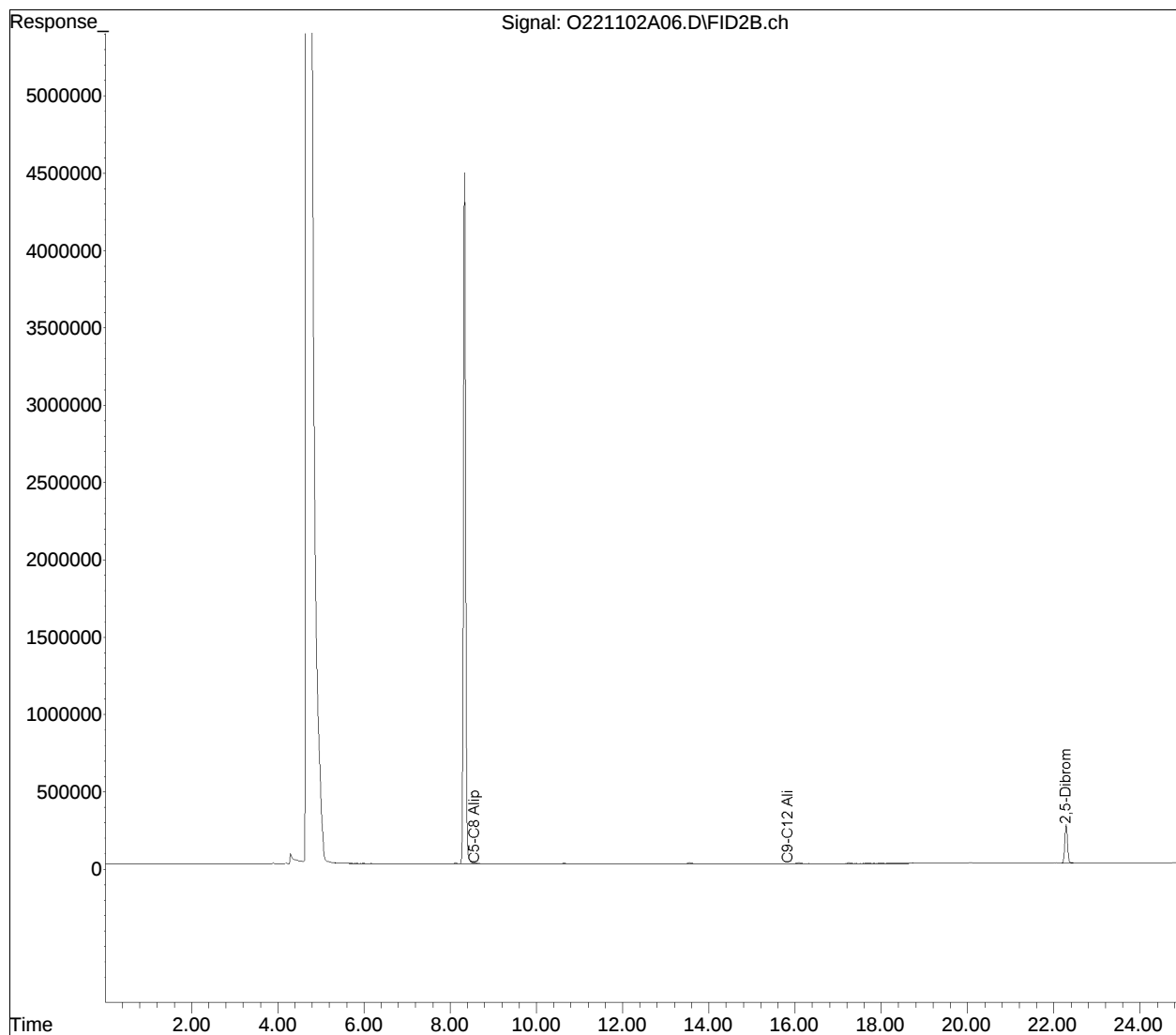
Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES_GC\OVPH\2022\221102Aali\
Data File : 0221102A06.D
Signal(s) : FID2B.ch
Acq On : 2 Nov 2022 1:48 pm
Operator : OVPH:BAD
Sample : 12259120-01d,41,2.5,5,,e
Misc : WG1707734,ICAL19298
ALS Vial : 6 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Nov 02 14:47:57 2022
Quant Method : I:\VOLATILES_GC\OVPH\2022\221102Aali\vph-ali220830N.m
Quant Title : VPH ALIPHATIC
QLast Update : Wed Aug 31 09:59:18 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Sub List : Default - All compounds listed





ANALYTICAL REPORT

Lab Number:	L2259129
Client:	Horseley & Witten, Inc. Sextant Hill Office Park 90 Route 6A Sandwich, MA 02563
ATTN:	Brian Massa
Phone:	(508) 833-6600
Project Name:	SOUTH HIGHLAND
Project Number:	22098
Report Date:	11/15/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2259129-01	TP-7A (0-2)	SOIL	TRURO	10/20/22 09:05	10/21/22
L2259129-02	TP-5A (0-2)	SOIL	TRURO	10/20/22 11:25	10/21/22
L2259129-03	TP-6A (0-2)	SOIL	TRURO	10/20/22 09:55	10/21/22

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is 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 within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
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).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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
A response to questions G, H and I 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
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
For any questions answered "No", please refer to the case narrative section on the following page(s).		

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

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 Alpha 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, solids and tissues are reported on a dry 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, Alpha'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 Alpha Project Manager and made arrangements for Alpha 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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

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.

MCP Related Narratives

Sample Receipt

The analyses performed were specified by the client.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Volatile Organics

L2259129-02 and -03: Initial calibration utilized a quadratic fit for: chloroethane, chlorodibromomethane, 1,1,1,2-tetrachloroethane

In reference to question H:

L2259129-02 and -03: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,4-dioxane (0.0018)

Average Response Factor: 1,4-dioxane

L2259129-01: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,2-dichloropropane (0.1985), 1,4-dioxane (0.0017), cis-1,3-dichloropropene (0.2912)

Average Response Factor: 1,4-dioxane

Verification: carbon disulfide (163%)

L2259129-01, -02, and -03: The associated continuing calibration standard is outside the acceptance criteria for several compounds; however, it is within overall method allowances. Associated results are considered to be biased high if the %D is negative and biased low if the %D is positive. A copy of the continuing calibration standard is included as an addendum to this report.

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Case Narrative (continued)

Semivolatile Organics

L2259129-01, -02, and -03: The initial calibration utilized a quadratic fit for 2,4-Dinitrophenol.

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

EPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

Non-MCP Related Narratives

Perfluorinated Alkyl Acids by Isotope Dilution

L2259129-02, WG1706008-1, and WG1706008-2: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2259129-02: The MeOH fraction of the extraction is reported for perfluorooctanesulfonamide (fosa) due to better extraction efficiency of the perfluoro[13c8]octanesulfonamide (m8fosa) Extracted Internal Standard.

The Extracted Internal Standard recovery for the WG1706008-1 Method Blank, associated with L2259129-02, is below the acceptance criteria for perfluoro[13c8]octanesulfonamide (m8fosa) (less than 5%); however, the associated sample is non-detect to the RL for all associated target analytes; therefore, no further action was taken.

The Extracted Internal Standard recovery for the WG1706008-2 LCS, associated with L2259129-02, is below the acceptance criteria (less than 5%) for perfluoro[13c8]octanesulfonamide (m8fosa) (1%), however, all associated target analytes are within overall LCS criteria; therefore, no further action was taken.

Dioxins & Furans by Isotope Dilution HRMS

The WG1708165-4 MSD recovery, performed on L2259129-02, is outside the acceptance criteria for ocdd

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

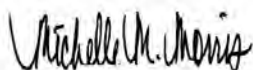
Case Narrative (continued)

(137%). The unacceptable percent recovery is attributed to the elevated concentration of target compound present in the native sample.

The WG1708165-3/-4 MS/MSD RPDs, performed on L2259129-02, are outside the acceptance criteria for 2,3,7,8-tcdf (30%) and 1,2,3,4,7,8-hxcdf (27%).

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:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 11/15/22

QC OUTLIER SUMMARY REPORT

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab								
8290A	Batch QC (L2259129-02)	WG1708165-4	OCDD	MSD	137	73-135	02	potential high bias
8290A	Batch QC (L2259129-02)	WG1708165-4	2,3,7,8-TCDF	MSD	30	25	02	non-directional bias
8290A	Batch QC (L2259129-02)	WG1708165-4	1,2,3,4,7,8-HxCDF	MSD	27	25	02	non-directional bias
MCP Semivolatile Organics - Westborough Lab								
8270E	Batch QC	WG1705503-2	2,4-Dinitrophenol	LCS	131	30-130	01-03	potential high bias
8270E	Batch QC	WG1705503-3	2,4-Dinitrophenol	LCSD	135	30-130	01-03	potential high bias
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab								
LCMSMS-ID	TP-5A (0-2)	L2259129-02	Perfluoro[13C4]Butanoic Acid (MPFBA)	Surrogate	14	61-135	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	Surrogate	18	58-150	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	Surrogate	25	66-128	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	Surrogate	36	71-129	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	Perfluoro[13C8]Octanoic Acid (M8PFOA)	Surrogate	51	75-130	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	Perfluoro[13C9]Nonanoic Acid (M9PFNA)	Surrogate	57	72-140	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	Surrogate	68	75-130	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	Surrogate	9	31-134	-	- - not applicable - -
LCMSMS-ID	TP-5A (0-2)	L2259129-02	N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	Surrogate	11	34-137	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[13C4]Butanoic Acid (MPFBA)	Surrogate	35	61-135	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	Surrogate	42	58-150	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	Surrogate	44	66-128	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	Surrogate	49	71-129	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	Surrogate	74	78-139	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[13C8]Octanoic Acid (M8PFOA)	Surrogate	56	75-130	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[13C9]Nonanoic Acid (M9PFNA)	Surrogate	47	72-140	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	Surrogate	63	79-136	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	Surrogate	51	75-130	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFDA)	Surrogate	52	61-155	-	- - not applicable - -

QC OUTLIER SUMMARY REPORT

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[13C8]Octanesulfonamide (M8FOSA)	Surrogate	2	5-117	-	- - not applicable - -
LCMSMS-ID	Laboratory Method BI	WG1706008-1	Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	Surrogate	43	54-150	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[13C4]Butanoic Acid (MPFBA)	Surrogate	45	61-135	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	Surrogate	49	58-150	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	Surrogate	49	66-128	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	Surrogate	54	71-129	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[13C8]Octanoic Acid (M8PFOA)	Surrogate	62	75-130	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[13C9]Nonanoic Acid (M9PFNA)	Surrogate	54	72-140	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	Surrogate	72	79-136	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	Surrogate	56	75-130	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[13C8]Octanesulfonamide (M8FOSA)	Surrogate	1	5-117	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	Surrogate	33	34-137	-	- - not applicable - -
LCMSMS-ID	Batch QC	WG1706008-2	Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	Surrogate	52	54-150	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-05)	WG1706008-3 R	Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	Surrogate	65	66-128	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[13C4]Butanoic Acid (MPFBA)	Surrogate	5	61-135	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	Surrogate	3	58-150	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	Surrogate	4	66-128	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	Surrogate	6	71-129	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[13C8]Octanoic Acid (M8PFOA)	Surrogate	14	75-130	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[13C9]Nonanoic Acid (M9PFNA)	Surrogate	21	72-140	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	Surrogate	35	75-130	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	Surrogate	15	31-134	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	Surrogate	50	61-155	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	Surrogate	17	34-137	-	- - not applicable - -
LCMSMS-ID	Batch QC (L2258483-06)	WG1706008-4	Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	Surrogate	51	54-150	-	- - not applicable - -

QC OUTLIER SUMMARY REPORT

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Petroleum Hydrocarbons - Westborough Lab								
VPH-18-2.1	TP-5A (0-2)	L2259129-02	2,5-Dibromotoluene-FID	Surrogate	131	70-130	-	potential high bias
VPH-18-2.1	TP-6A (0-2)	L2259129-03	2,5-Dibromotoluene-PID	Surrogate	144	70-130	-	potential high bias
VPH-18-2.1	TP-6A (0-2)	L2259129-03	2,5-Dibromotoluene-FID	Surrogate	145	70-130	-	potential high bias

ORGANICS

VOLATILES

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-01
Client ID: TP-7A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:05
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 141,8260D
Analytical Date: 11/01/22 14:37
Analyst: LAC
Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.9	1.8	1
1,1-Dichloroethane	ND		ug/kg	0.78	0.11	1
Chloroform	ND		ug/kg	1.2	0.11	1
Carbon tetrachloride	ND		ug/kg	0.78	0.18	1
1,2-Dichloropropane	ND		ug/kg	0.78	0.10	1
Dibromochloromethane	ND		ug/kg	0.78	0.11	1
1,1,2-Trichloroethane	ND		ug/kg	0.78	0.21	1
Tetrachloroethene	ND		ug/kg	0.39	0.15	1
Chlorobenzene	ND		ug/kg	0.39	0.10	1
Trichlorofluoromethane	ND		ug/kg	3.1	0.54	1
1,2-Dichloroethane	ND		ug/kg	0.78	0.20	1
1,1,1-Trichloroethane	ND		ug/kg	0.39	0.13	1
Bromodichloromethane	ND		ug/kg	0.39	0.09	1
trans-1,3-Dichloropropene	ND		ug/kg	0.78	0.21	1
cis-1,3-Dichloropropene	ND		ug/kg	0.39	0.12	1
1,3-Dichloropropene, Total	ND		ug/kg	0.39	0.12	1
1,1-Dichloropropene	ND		ug/kg	0.39	0.12	1
Bromoform	ND		ug/kg	3.1	0.19	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.39	0.13	1
Benzene	ND		ug/kg	0.39	0.13	1
Toluene	2.3		ug/kg	0.78	0.42	1
Ethylbenzene	0.45	J	ug/kg	0.78	0.11	1
Chloromethane	ND		ug/kg	3.1	0.73	1
Bromomethane	ND		ug/kg	1.6	0.45	1
Vinyl chloride	ND		ug/kg	0.78	0.26	1
Chloroethane	ND		ug/kg	1.6	0.35	1
1,1-Dichloroethene	ND		ug/kg	0.78	0.19	1
trans-1,2-Dichloroethene	ND		ug/kg	1.2	0.11	1

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-01

Date Collected: 10/20/22 09:05

Client ID: TP-7A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.39	0.11	1
1,2-Dichlorobenzene	ND		ug/kg	1.6	0.11	1
1,3-Dichlorobenzene	ND		ug/kg	1.6	0.12	1
1,4-Dichlorobenzene	ND		ug/kg	1.6	0.13	1
Methyl tert butyl ether	ND		ug/kg	1.6	0.16	1
p/m-Xylene	1.5	J	ug/kg	1.6	0.44	1
o-Xylene	0.59	J	ug/kg	0.78	0.23	1
Xylenes, Total	2.1	J	ug/kg	0.78	0.23	1
cis-1,2-Dichloroethene	ND		ug/kg	0.78	0.14	1
1,2-Dichloroethene, Total	ND		ug/kg	0.78	0.11	1
Dibromomethane	ND		ug/kg	1.6	0.19	1
1,2,3-Trichloropropane	ND		ug/kg	1.6	0.10	1
Styrene	0.17	J	ug/kg	0.78	0.15	1
Dichlorodifluoromethane	ND		ug/kg	7.8	0.72	1
Acetone	ND		ug/kg	20	7.8	1
Carbon disulfide	ND		ug/kg	7.8	0.86	1
Methyl ethyl ketone	ND		ug/kg	7.8	1.7	1
Methyl isobutyl ketone	ND		ug/kg	7.8	1.0	1
2-Hexanone	ND		ug/kg	7.8	0.92	1
Bromochloromethane	ND		ug/kg	1.6	0.16	1
Tetrahydrofuran	ND		ug/kg	3.1	1.2	1
2,2-Dichloropropane	ND		ug/kg	1.6	0.16	1
1,2-Dibromoethane	ND		ug/kg	0.78	0.22	1
1,3-Dichloropropane	ND		ug/kg	1.6	0.13	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.39	0.10	1
Bromobenzene	ND		ug/kg	1.6	0.11	1
n-Butylbenzene	ND		ug/kg	0.78	0.13	1
sec-Butylbenzene	ND		ug/kg	0.78	0.11	1
tert-Butylbenzene	ND		ug/kg	1.6	0.09	1
o-Chlorotoluene	ND		ug/kg	1.6	0.15	1
p-Chlorotoluene	ND		ug/kg	1.6	0.08	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.3	0.78	1
Hexachlorobutadiene	ND		ug/kg	3.1	0.13	1
Isopropylbenzene	ND		ug/kg	0.78	0.09	1
p-Isopropyltoluene	ND		ug/kg	0.78	0.09	1
Naphthalene	ND		ug/kg	3.1	0.51	1
n-Propylbenzene	0.30	J	ug/kg	0.78	0.13	1

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-01
Client ID: TP-7A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:05
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.6	0.25	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.6	0.21	1
1,3,5-Trimethylbenzene	0.43	J	ug/kg	1.6	0.15	1
1,2,4-Trimethylbenzene	1.8		ug/kg	1.6	0.26	1
Diethyl ether	ND		ug/kg	1.6	0.27	1
Diisopropyl Ether	ND		ug/kg	1.6	0.17	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1.6	0.10	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1.6	0.14	1
1,4-Dioxane	ND		ug/kg	62	27.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
Client ID: TP-5A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 11:25
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 141,8260D
Analytical Date: 10/31/22 16:15
Analyst: JIC
Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.9	1.8	1
1,1-Dichloroethane	ND		ug/kg	0.78	0.11	1
Chloroform	ND		ug/kg	1.2	0.11	1
Carbon tetrachloride	ND		ug/kg	0.78	0.18	1
1,2-Dichloropropane	ND		ug/kg	0.78	0.10	1
Dibromochloromethane	ND		ug/kg	0.78	0.11	1
1,1,2-Trichloroethane	ND		ug/kg	0.78	0.21	1
Tetrachloroethene	ND		ug/kg	0.39	0.15	1
Chlorobenzene	ND		ug/kg	0.39	0.10	1
Trichlorofluoromethane	ND		ug/kg	3.1	0.54	1
1,2-Dichloroethane	ND		ug/kg	0.78	0.20	1
1,1,1-Trichloroethane	ND		ug/kg	0.39	0.13	1
Bromodichloromethane	ND		ug/kg	0.39	0.09	1
trans-1,3-Dichloropropene	ND		ug/kg	0.78	0.21	1
cis-1,3-Dichloropropene	ND		ug/kg	0.39	0.12	1
1,3-Dichloropropene, Total	ND		ug/kg	0.39	0.12	1
1,1-Dichloropropene	ND		ug/kg	0.39	0.12	1
Bromoform	ND		ug/kg	3.1	0.19	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.39	0.13	1
Benzene	ND		ug/kg	0.39	0.13	1
Toluene	0.82		ug/kg	0.78	0.43	1
Ethylbenzene	ND		ug/kg	0.78	0.11	1
Chloromethane	ND		ug/kg	3.1	0.73	1
Bromomethane	ND		ug/kg	1.6	0.46	1
Vinyl chloride	ND		ug/kg	0.78	0.26	1
Chloroethane	ND		ug/kg	1.6	0.36	1
1,1-Dichloroethene	ND		ug/kg	0.78	0.19	1
trans-1,2-Dichloroethene	ND		ug/kg	1.2	0.11	1

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02

Date Collected: 10/20/22 11:25

Client ID: TP-5A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.39	0.11	1
1,2-Dichlorobenzene	ND		ug/kg	1.6	0.11	1
1,3-Dichlorobenzene	ND		ug/kg	1.6	0.12	1
1,4-Dichlorobenzene	ND		ug/kg	1.6	0.13	1
Methyl tert butyl ether	ND		ug/kg	1.6	0.16	1
p/m-Xylene	ND		ug/kg	1.6	0.44	1
o-Xylene	ND		ug/kg	0.78	0.23	1
Xylenes, Total	ND		ug/kg	0.78	0.23	1
cis-1,2-Dichloroethene	ND		ug/kg	0.78	0.14	1
1,2-Dichloroethene, Total	ND		ug/kg	0.78	0.11	1
Dibromomethane	ND		ug/kg	1.6	0.19	1
1,2,3-Trichloropropane	ND		ug/kg	1.6	0.10	1
Styrene	ND		ug/kg	0.78	0.15	1
Dichlorodifluoromethane	ND		ug/kg	7.8	0.72	1
Acetone	ND		ug/kg	20	7.8	1
Carbon disulfide	ND		ug/kg	7.8	0.86	1
Methyl ethyl ketone	ND		ug/kg	7.8	1.7	1
Methyl isobutyl ketone	ND		ug/kg	7.8	1.0	1
2-Hexanone	ND		ug/kg	7.8	0.93	1
Bromochloromethane	ND		ug/kg	1.6	0.16	1
Tetrahydrofuran	ND		ug/kg	3.1	1.2	1
2,2-Dichloropropane	ND		ug/kg	1.6	0.16	1
1,2-Dibromoethane	ND		ug/kg	0.78	0.22	1
1,3-Dichloropropane	ND		ug/kg	1.6	0.13	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.39	0.10	1
Bromobenzene	ND		ug/kg	1.6	0.11	1
n-Butylbenzene	ND		ug/kg	0.78	0.13	1
sec-Butylbenzene	ND		ug/kg	0.78	0.11	1
tert-Butylbenzene	ND		ug/kg	1.6	0.09	1
o-Chlorotoluene	ND		ug/kg	1.6	0.15	1
p-Chlorotoluene	ND		ug/kg	1.6	0.09	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.4	0.78	1
Hexachlorobutadiene	ND		ug/kg	3.1	0.13	1
Isopropylbenzene	ND		ug/kg	0.78	0.09	1
p-Isopropyltoluene	ND		ug/kg	0.78	0.09	1
Naphthalene	ND		ug/kg	3.1	0.51	1
n-Propylbenzene	ND		ug/kg	0.78	0.13	1

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
Client ID: TP-5A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 11:25
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.6	0.25	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.6	0.21	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.6	0.15	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.6	0.26	1
Diethyl ether	ND		ug/kg	1.6	0.27	1
Diisopropyl Ether	ND		ug/kg	1.6	0.17	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1.6	0.10	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1.6	0.14	1
1,4-Dioxane	ND		ug/kg	63	28.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	105		70-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-03
Client ID: TP-6A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:55
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 141,8260D
Analytical Date: 10/31/22 16:42
Analyst: JIC
Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.7	1.7	1
1,1-Dichloroethane	ND		ug/kg	0.74	0.11	1
Chloroform	ND		ug/kg	1.1	0.10	1
Carbon tetrachloride	ND		ug/kg	0.74	0.17	1
1,2-Dichloropropane	ND		ug/kg	0.74	0.09	1
Dibromochloromethane	ND		ug/kg	0.74	0.10	1
1,1,2-Trichloroethane	ND		ug/kg	0.74	0.20	1
Tetrachloroethene	ND		ug/kg	0.37	0.14	1
Chlorobenzene	ND		ug/kg	0.37	0.09	1
Trichlorofluoromethane	ND		ug/kg	2.9	0.51	1
1,2-Dichloroethane	ND		ug/kg	0.74	0.19	1
1,1,1-Trichloroethane	ND		ug/kg	0.37	0.12	1
Bromodichloromethane	ND		ug/kg	0.37	0.08	1
trans-1,3-Dichloropropene	ND		ug/kg	0.74	0.20	1
cis-1,3-Dichloropropene	ND		ug/kg	0.37	0.12	1
1,3-Dichloropropene, Total	ND		ug/kg	0.37	0.12	1
1,1-Dichloropropene	ND		ug/kg	0.37	0.12	1
Bromoform	ND		ug/kg	2.9	0.18	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.37	0.12	1
Benzene	ND		ug/kg	0.37	0.12	1
Toluene	0.62	J	ug/kg	0.74	0.40	1
Ethylbenzene	ND		ug/kg	0.74	0.10	1
Chloromethane	ND		ug/kg	2.9	0.69	1
Bromomethane	ND		ug/kg	1.5	0.43	1
Vinyl chloride	ND		ug/kg	0.74	0.25	1
Chloroethane	ND		ug/kg	1.5	0.33	1
1,1-Dichloroethene	ND		ug/kg	0.74	0.18	1
trans-1,2-Dichloroethene	ND		ug/kg	1.1	0.10	1

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-03

Date Collected: 10/20/22 09:55

Client ID: TP-6A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.37	0.10	1
1,2-Dichlorobenzene	ND		ug/kg	1.5	0.11	1
1,3-Dichlorobenzene	ND		ug/kg	1.5	0.11	1
1,4-Dichlorobenzene	ND		ug/kg	1.5	0.13	1
Methyl tert butyl ether	ND		ug/kg	1.5	0.15	1
p/m-Xylene	ND		ug/kg	1.5	0.41	1
o-Xylene	ND		ug/kg	0.74	0.21	1
Xylenes, Total	ND		ug/kg	0.74	0.21	1
cis-1,2-Dichloroethene	ND		ug/kg	0.74	0.13	1
1,2-Dichloroethene, Total	ND		ug/kg	0.74	0.10	1
Dibromomethane	ND		ug/kg	1.5	0.18	1
1,2,3-Trichloropropane	ND		ug/kg	1.5	0.09	1
Styrene	ND		ug/kg	0.74	0.14	1
Dichlorodifluoromethane	ND		ug/kg	7.4	0.67	1
Acetone	17	J	ug/kg	18	7.4	1
Carbon disulfide	ND		ug/kg	7.4	0.81	1
Methyl ethyl ketone	ND		ug/kg	7.4	1.6	1
Methyl isobutyl ketone	ND		ug/kg	7.4	0.94	1
2-Hexanone	ND		ug/kg	7.4	0.87	1
Bromochloromethane	ND		ug/kg	1.5	0.15	1
Tetrahydrofuran	ND		ug/kg	2.9	1.2	1
2,2-Dichloropropane	ND		ug/kg	1.5	0.15	1
1,2-Dibromoethane	ND		ug/kg	0.74	0.20	1
1,3-Dichloropropane	ND		ug/kg	1.5	0.12	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.37	0.10	1
Bromobenzene	ND		ug/kg	1.5	0.11	1
n-Butylbenzene	ND		ug/kg	0.74	0.12	1
sec-Butylbenzene	ND		ug/kg	0.74	0.11	1
tert-Butylbenzene	ND		ug/kg	1.5	0.09	1
o-Chlorotoluene	ND		ug/kg	1.5	0.14	1
p-Chlorotoluene	ND		ug/kg	1.5	0.08	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.2	0.74	1
Hexachlorobutadiene	ND		ug/kg	2.9	0.12	1
Isopropylbenzene	ND		ug/kg	0.74	0.08	1
p-Isopropyltoluene	ND		ug/kg	0.74	0.08	1
Naphthalene	ND		ug/kg	2.9	0.48	1
n-Propylbenzene	ND		ug/kg	0.74	0.13	1

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-03
Client ID: TP-6A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:55
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 Low - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	1.5	0.24	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.5	0.20	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.5	0.14	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.5	0.25	1
Diethyl ether	ND		ug/kg	1.5	0.25	1
Diisopropyl Ether	ND		ug/kg	1.5	0.16	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1.5	0.09	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1.5	0.13	1
1,4-Dioxane	ND		ug/kg	59	26.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	106		70-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
 Analytical Date: 10/31/22 08:51
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-03 Batch: WG1706665-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
 Analytical Date: 10/31/22 08:51
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-03 Batch: WG1706665-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	25	10.
Carbon disulfide	ND		ug/kg	10	1.1
Methyl ethyl ketone	ND		ug/kg	10	2.2
Methyl isobutyl ketone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
Tetrahydrofuran	ND		ug/kg	4.0	1.6
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 10/31/22 08:51
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 02-03 Batch: WG1706665-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	0.33	J	ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Diethyl ether	ND		ug/kg	2.0	0.34
Diisopropyl Ether	ND		ug/kg	2.0	0.21
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	0.13
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	0.18
1,4-Dioxane	ND		ug/kg	80	35.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	101		70-130



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 11/01/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1706849-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
 Analytical Date: 11/01/22 08:18
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1706849-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	25	10.
Carbon disulfide	ND		ug/kg	10	1.1
Methyl ethyl ketone	ND		ug/kg	10	2.2
Methyl isobutyl ketone	ND		ug/kg	10	1.3
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
Tetrahydrofuran	ND		ug/kg	4.0	1.6
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 11/01/22 08:18
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01 Batch: WG1706849-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Diethyl ether	ND		ug/kg	2.0	0.34
Diisopropyl Ether	ND		ug/kg	2.0	0.21
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0	0.13
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0	0.18
1,4-Dioxane	ND		ug/kg	80	35.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03 Batch: WG1706665-3 WG1706665-4								
Methylene chloride	101		98		70-130	3		20
1,1-Dichloroethane	102		99		70-130	3		20
Chloroform	85		82		70-130	4		20
Carbon tetrachloride	109		107		70-130	2		20
1,2-Dichloropropane	119		115		70-130	3		20
Dibromochloromethane	92		88		70-130	4		20
1,1,2-Trichloroethane	86		82		70-130	5		20
Tetrachloroethene	106		100		70-130	6		20
Chlorobenzene	95		91		70-130	4		20
Trichlorofluoromethane	94		90		70-130	4		20
1,2-Dichloroethane	93		90		70-130	3		20
1,1,1-Trichloroethane	102		99		70-130	3		20
Bromodichloromethane	100		97		70-130	3		20
trans-1,3-Dichloropropene	86		81		70-130	6		20
cis-1,3-Dichloropropene	103		99		70-130	4		20
1,1-Dichloropropene	110		106		70-130	4		20
Bromoform	87		85		70-130	2		20
1,1,2,2-Tetrachloroethane	94		90		70-130	4		20
Benzene	110		107		70-130	3		20
Toluene	97		92		70-130	5		20
Ethylbenzene	95		91		70-130	4		20
Chloromethane	120		116		70-130	3		20
Bromomethane	100		97		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03 Batch: WG1706665-3 WG1706665-4								
Vinyl chloride	112		109		70-130	3		20
Chloroethane	107		104		70-130	3		20
1,1-Dichloroethene	100		97		70-130	3		20
trans-1,2-Dichloroethene	99		95		70-130	4		20
Trichloroethene	113		111		70-130	2		20
1,2-Dichlorobenzene	86		85		70-130	1		20
1,3-Dichlorobenzene	90		87		70-130	3		20
1,4-Dichlorobenzene	88		86		70-130	2		20
Methyl tert butyl ether	108		105		70-130	3		20
p/m-Xylene	99		94		70-130	5		20
o-Xylene	95		91		70-130	4		20
cis-1,2-Dichloroethene	95		90		70-130	5		20
Dibromomethane	89		87		70-130	2		20
1,2,3-Trichloropropane	86		86		70-130	0		20
Styrene	96		92		70-130	4		20
Dichlorodifluoromethane	78		75		70-130	4		20
Acetone	108		108		70-130	0		20
Carbon disulfide	108		105		70-130	3		20
Methyl ethyl ketone	83		86		70-130	4		20
Methyl isobutyl ketone	110		107		70-130	3		20
2-Hexanone	100		99		70-130	1		20
Bromochloromethane	93		90		70-130	3		20
Tetrahydrofuran	114		112		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03 Batch: WG1706665-3 WG1706665-4								
2,2-Dichloropropane	99		97		70-130	2		20
1,2-Dibromoethane	85		81		70-130	5		20
1,3-Dichloropropane	97		91		70-130	6		20
1,1,1,2-Tetrachloroethane	93		90		70-130	3		20
Bromobenzene	91		89		70-130	2		20
n-Butylbenzene	91		89		70-130	2		20
sec-Butylbenzene	94		92		70-130	2		20
tert-Butylbenzene	95		93		70-130	2		20
o-Chlorotoluene	92		90		70-130	2		20
p-Chlorotoluene	90		87		70-130	3		20
1,2-Dibromo-3-chloropropane	89		87		70-130	2		20
Hexachlorobutadiene	89		87		70-130	2		20
Isopropylbenzene	99		96		70-130	3		20
p-Isopropyltoluene	95		93		70-130	2		20
Naphthalene	87		86		70-130	1		20
n-Propylbenzene	97		94		70-130	3		20
1,2,3-Trichlorobenzene	85		84		70-130	1		20
1,2,4-Trichlorobenzene	88		87		70-130	1		20
1,3,5-Trimethylbenzene	89		88		70-130	1		20
1,2,4-Trimethylbenzene	88		87		70-130	1		20
Diethyl ether	101		97		70-130	4		20
Diisopropyl Ether	125		122		70-130	2		20
Ethyl-Tert-Butyl-Ether	130		126		70-130	3		20

Lab Control Sample Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 02-03 Batch: WG1706665-3 WG1706665-4								
Tertiary-Amyl Methyl Ether	112		109		70-130	3		20
1,4-Dioxane	106		109		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	81		80		70-130
Toluene-d8	94		92		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	86		86		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1706849-3 WG1706849-4								
Methylene chloride	98		98		70-130	0		20
1,1-Dichloroethane	101		98		70-130	3		20
Chloroform	98		94		70-130	4		20
Carbon tetrachloride	108		104		70-130	4		20
1,2-Dichloropropane	104		100		70-130	4		20
Dibromochloromethane	107		108		70-130	1		20
1,1,2-Trichloroethane	97		97		70-130	0		20
Tetrachloroethene	116		113		70-130	3		20
Chlorobenzene	104		103		70-130	1		20
Trichlorofluoromethane	107		104		70-130	3		20
1,2-Dichloroethane	98		98		70-130	0		20
1,1,1-Trichloroethane	101		97		70-130	4		20
Bromodichloromethane	96		94		70-130	2		20
trans-1,3-Dichloropropene	104		104		70-130	0		20
cis-1,3-Dichloropropene	108		106		70-130	2		20
1,1-Dichloropropene	117		112		70-130	4		20
Bromoform	103		104		70-130	1		20
1,1,2,2-Tetrachloroethane	96		96		70-130	0		20
Benzene	105		102		70-130	3		20
Toluene	101		99		70-130	2		20
Ethylbenzene	105		104		70-130	1		20
Chloromethane	90		85		70-130	6		20
Bromomethane	90		88		70-130	2		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1706849-3 WG1706849-4								
Vinyl chloride	103		98		70-130	5		20
Chloroethane	97		93		70-130	4		20
1,1-Dichloroethene	110		101		70-130	9		20
trans-1,2-Dichloroethene	101		98		70-130	3		20
Trichloroethene	109		106		70-130	3		20
1,2-Dichlorobenzene	102		103		70-130	1		20
1,3-Dichlorobenzene	104		104		70-130	0		20
1,4-Dichlorobenzene	103		102		70-130	1		20
Methyl tert butyl ether	105		104		70-130	1		20
p/m-Xylene	104		102		70-130	2		20
o-Xylene	104		103		70-130	1		20
cis-1,2-Dichloroethene	98		96		70-130	2		20
Dibromomethane	100		100		70-130	0		20
1,2,3-Trichloropropane	102		101		70-130	1		20
Styrene	104		104		70-130	0		20
Dichlorodifluoromethane	86		82		70-130	5		20
Acetone	96		104		70-130	8		20
Carbon disulfide	103		97		70-130	6		20
Methyl ethyl ketone	95		94		70-130	1		20
Methyl isobutyl ketone	89		89		70-130	0		20
2-Hexanone	87		88		70-130	1		20
Bromochloromethane	102		100		70-130	2		20
Tetrahydrofuran	90		91		70-130	1		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1706849-3 WG1706849-4								
2,2-Dichloropropane	109		100		70-130	9		20
1,2-Dibromoethane	107		106		70-130	1		20
1,3-Dichloropropane	104		103		70-130	1		20
1,1,1,2-Tetrachloroethane	109		109		70-130	0		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	106		105		70-130	1		20
sec-Butylbenzene	105		104		70-130	1		20
tert-Butylbenzene	105		103		70-130	2		20
o-Chlorotoluene	105		104		70-130	1		20
p-Chlorotoluene	102		101		70-130	1		20
1,2-Dibromo-3-chloropropane	103		102		70-130	1		20
Hexachlorobutadiene	106		104		70-130	2		20
Isopropylbenzene	105		104		70-130	1		20
p-Isopropyltoluene	107		105		70-130	2		20
Naphthalene	97		98		70-130	1		20
n-Propylbenzene	105		103		70-130	2		20
1,2,3-Trichlorobenzene	102		102		70-130	0		20
1,2,4-Trichlorobenzene	107		105		70-130	2		20
1,3,5-Trimethylbenzene	104		102		70-130	2		20
1,2,4-Trimethylbenzene	103		102		70-130	1		20
Diethyl ether	108		103		70-130	5		20
Diisopropyl Ether	101		97		70-130	4		20
Ethyl-Tert-Butyl-Ether	105		102		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01 Batch: WG1706849-3 WG1706849-4								
Tertiary-Amyl Methyl Ether	106		104		70-130	2		20
1,4-Dioxane	115		111		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		93		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	93		93		70-130

SEMIVOLATILES

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-01
Client ID: TP-7A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:05
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 10/31/22 18:47
Analyst: IM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/28/22 13:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	20.	1
Hexachlorobenzene	ND		ug/kg	72	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	72	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
1,2-Dichlorobenzene	ND		ug/kg	170	31.	1
1,3-Dichlorobenzene	ND		ug/kg	170	29.	1
1,4-Dichlorobenzene	ND		ug/kg	72	30.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	46.	1
2,4-Dinitrotoluene	ND		ug/kg	72	34.	1
2,6-Dinitrotoluene	ND		ug/kg	170	29.	1
Azobenzene	ND		ug/kg	170	16.	1
Fluoranthene	ND		ug/kg	100	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	72	29.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachloroethane	ND		ug/kg	72	28.	1
Isophorone	ND		ug/kg	150	22.	1
Naphthalene	ND		ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	150	25.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	59.	1
Butyl benzyl phthalate	ND		ug/kg	170	43.	1
Di-n-butylphthalate	ND		ug/kg	170	32.	1
Di-n-octylphthalate	ND		ug/kg	170	58.	1
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	72	36.	1
Benzo(a)anthracene	ND		ug/kg	100	19.	1

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-01

Date Collected: 10/20/22 09:05

Client ID: TP-7A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	140	42.	1
Benzo(b)fluoranthene	ND		ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	27.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	26.	1
Anthracene	ND		ug/kg	100	33.	1
Benzo(ghi)perylene	ND		ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	17.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	72	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	ND		ug/kg	100	17.	1
Aniline	ND		ug/kg	200	81.	1
4-Chloroaniline	ND		ug/kg	170	31.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	72	21.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	72	32.	1
2-Chlorophenol	ND		ug/kg	72	20.	1
2,4-Dichlorophenol	ND		ug/kg	72	28.	1
2,4-Dimethylphenol	ND		ug/kg	72	56.	1
2-Nitrophenol	ND		ug/kg	370	64.	1
4-Nitrophenol	ND		ug/kg	240	70.	1
2,4-Dinitrophenol	ND		ug/kg	820	80.	1
Pentachlorophenol	ND		ug/kg	340	38.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	26.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	27.	1
2,4,5-Trichlorophenol	ND		ug/kg	170	33.	1
Biphenyl	ND		ug/kg	34	22.	1

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-01
Client ID: TP-7A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:05
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Semivolatile Organics - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		30-130
Phenol-d6	78		30-130
Nitrobenzene-d5	75		30-130
2-Fluorobiphenyl	77		30-130
2,4,6-Tribromophenol	69		30-130
4-Terphenyl-d14	67		30-130

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-02

Date Collected: 10/20/22 11:25

Client ID: TP-5A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Extraction Method: ALPHA 23528

Analytical Method: 134,LCMSMS-ID

Extraction Date: 10/31/22 14:50

Analytical Date: 11/12/22 23:59

Analyst: SG

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.460	0.021	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.460	0.042	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.230	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.921	0.059	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.460	0.048	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.921	0.077	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.230	0.042	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.230	0.056	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.230	0.039	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.460	0.165	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.460	0.126	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.230	0.069	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.230	0.120	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.230	0.062	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.460	0.264	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.921	0.275	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.460	0.186	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.460	0.043	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.460	0.141	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.094	J	ng/g	0.460	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.460	0.065	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.460	0.188	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.460	0.050	1

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02

Date Collected: 10/20/22 11:25

Client ID: TP-5A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

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)	14	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	18	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	114		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)	25	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	36	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	114		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	51	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	105		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	57	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	107		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	123		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	9	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	11	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		24-159

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
 Client ID: TP-5A (0-2)
 Sample Location: TRURO

Date Collected: 10/20/22 11:25
 Date Received: 10/21/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 11/14/22 14:45
 Analyst: JW
 Percent Solids: 96%

Extraction Method: ALPHA 23528
 Extraction Date: 10/31/22 14:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.460	0.090	1
Surrogate (Extracted Internal Standard)			% Recovery	Qualifier	Acceptance Criteria	
Perfluoro[13C8]Octanesulfonamide (M8FOSA)			91		5-117	

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
Client ID: TP-5A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 11:25
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 10/31/22 19:11
Analyst: IM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/28/22 13:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	19.	1
Hexachlorobenzene	ND		ug/kg	71	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	71	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
1,2-Dichlorobenzene	ND		ug/kg	170	30.	1
1,3-Dichlorobenzene	ND		ug/kg	170	29.	1
1,4-Dichlorobenzene	ND		ug/kg	71	30.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	45.	1
2,4-Dinitrotoluene	ND		ug/kg	71	34.	1
2,6-Dinitrotoluene	ND		ug/kg	170	29.	1
Azobenzene	ND		ug/kg	170	16.	1
Fluoranthene	ND		ug/kg	100	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	71	29.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachloroethane	ND		ug/kg	71	28.	1
Isophorone	ND		ug/kg	150	22.	1
Naphthalene	ND		ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	150	25.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	59.	1
Butyl benzyl phthalate	ND		ug/kg	170	43.	1
Di-n-butylphthalate	ND		ug/kg	170	32.	1
Di-n-octylphthalate	ND		ug/kg	170	58.	1
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	71	36.	1
Benzo(a)anthracene	ND		ug/kg	100	19.	1

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-02

Date Collected: 10/20/22 11:25

Client ID: TP-5A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	140	42.	1
Benzo(b)fluoranthene	ND		ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	27.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	26.	1
Anthracene	ND		ug/kg	100	33.	1
Benzo(ghi)perylene	ND		ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	16.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	71	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	ND		ug/kg	100	17.	1
Aniline	ND		ug/kg	200	80.	1
4-Chloroaniline	ND		ug/kg	170	31.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	71	20.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	71	32.	1
2-Chlorophenol	ND		ug/kg	71	20.	1
2,4-Dichlorophenol	ND		ug/kg	71	27.	1
2,4-Dimethylphenol	ND		ug/kg	71	56.	1
2-Nitrophenol	ND		ug/kg	370	64.	1
4-Nitrophenol	ND		ug/kg	240	69.	1
2,4-Dinitrophenol	ND		ug/kg	820	79.	1
Pentachlorophenol	ND		ug/kg	340	37.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	26.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	27.	1
2,4,5-Trichlorophenol	ND		ug/kg	170	32.	1
Biphenyl	ND		ug/kg	34	22.	1

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
Client ID: TP-5A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 11:25
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Semivolatile Organics - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	90		30-130
Nitrobenzene-d5	87		30-130
2-Fluorobiphenyl	84		30-130
2,4,6-Tribromophenol	80		30-130
4-Terphenyl-d14	79		30-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-03
Client ID: TP-6A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:55
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 10/31/22 19:35
Analyst: IM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/28/22 13:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	20.	1
Hexachlorobenzene	ND		ug/kg	72	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	72	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
1,2-Dichlorobenzene	ND		ug/kg	170	31.	1
1,3-Dichlorobenzene	ND		ug/kg	170	30.	1
1,4-Dichlorobenzene	ND		ug/kg	72	30.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	46.	1
2,4-Dinitrotoluene	ND		ug/kg	72	34.	1
2,6-Dinitrotoluene	ND		ug/kg	170	30.	1
Azobenzene	ND		ug/kg	170	16.	1
Fluoranthene	ND		ug/kg	100	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	72	29.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachloroethane	ND		ug/kg	72	28.	1
Isophorone	ND		ug/kg	160	22.	1
Naphthalene	ND		ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	60.	1
Butyl benzyl phthalate	ND		ug/kg	170	43.	1
Di-n-butylphthalate	ND		ug/kg	170	33.	1
Di-n-octylphthalate	ND		ug/kg	170	59.	1
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	72	36.	1
Benzo(a)anthracene	ND		ug/kg	100	19.	1

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS****Lab ID:** L2259129-03**Date Collected:** 10/20/22 09:55**Client ID:** TP-6A (0-2)**Date Received:** 10/21/22**Sample Location:** TRURO**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	140	42.	1
Benzo(b)fluoranthene	ND		ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	28.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	100	34.	1
Benzo(ghi)perylene	ND		ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	17.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	72	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	ND		ug/kg	100	17.	1
Aniline	ND		ug/kg	210	81.	1
4-Chloroaniline	ND		ug/kg	170	31.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	72	21.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	72	33.	1
2-Chlorophenol	ND		ug/kg	72	20.	1
2,4-Dichlorophenol	ND		ug/kg	72	28.	1
2,4-Dimethylphenol	ND		ug/kg	72	57.	1
2-Nitrophenol	ND		ug/kg	370	65.	1
4-Nitrophenol	ND		ug/kg	240	70.	1
2,4-Dinitrophenol	ND		ug/kg	830	80.	1
Pentachlorophenol	ND		ug/kg	340	38.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	27.	1
2,4,5-Trichlorophenol	ND		ug/kg	170	33.	1
Biphenyl	ND		ug/kg	34	22.	1

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-03
Client ID: TP-6A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:55
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Semivolatile Organics - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	89		30-130
Phenol-d6	91		30-130
Nitrobenzene-d5	92		30-130
2-Fluorobiphenyl	87		30-130
2,4,6-Tribromophenol	99		30-130
4-Terphenyl-d14	75		30-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 10/28/22 22:11
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/28/22 13:51

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG1705503-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	69	18.
Bis(2-chloroethyl)ether	ND		ug/kg	69	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	30.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	69	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	69	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Azobenzene	ND		ug/kg	160	16.
Fluoranthene	ND		ug/kg	99	19.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	69	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachloroethane	ND		ug/kg	69	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	69	34.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 10/28/22 22:11
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/28/22 13:51

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG1705503-1					
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	69	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Aniline	ND		ug/kg	200	78.
4-Chloroaniline	ND		ug/kg	160	30.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	69	20.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	69	31.
2-Chlorophenol	ND		ug/kg	69	19.
2,4-Dichlorophenol	ND		ug/kg	69	26.
2,4-Dimethylphenol	ND		ug/kg	69	54.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
Pentachlorophenol	ND		ug/kg	330	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Biphenyl	ND		ug/kg	33	21.

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
 Analytical Date: 10/28/22 22:11
 Analyst: IM

Extraction Method: EPA 3546
 Extraction Date: 10/28/22 13:51

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG1705503-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	88		30-130
Phenol-d6	84		30-130
Nitrobenzene-d5	91		30-130
2-Fluorobiphenyl	87		30-130
2,4,6-Tribromophenol	119		30-130
4-Terphenyl-d14	97		30-130

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/12/22 19:50
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/31/22 14:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02 Batch: WG1706008-1					
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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/12/22 19:50
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/31/22 14:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02 Batch: WG1706008-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	35	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	42	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	78		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	62		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	44	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	49	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	74	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	56	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	66		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	47	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	63	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	51	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	60		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	36		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	52	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	2	Q	5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	34		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	43	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	26		24-159

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 11/13/22 21:10
Analyst: JPW

Extraction Method: ALPHA 23528
Extraction Date: 10/31/22 14:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02 Batch: WG1706008-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	0.098

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	88		5-117

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG1705503-2 WG1705503-3								
Acenaphthene	70		74		40-140	6		30
1,2,4-Trichlorobenzene	75		77		40-140	3		30
Hexachlorobenzene	82		88		40-140	7		30
Bis(2-chloroethyl)ether	60		65		40-140	8		30
2-Chloronaphthalene	76		78		40-140	3		30
1,2-Dichlorobenzene	67		71		40-140	6		30
1,3-Dichlorobenzene	66		71		40-140	7		30
1,4-Dichlorobenzene	67		70		40-140	4		30
3,3'-Dichlorobenzidine	73		78		40-140	7		30
2,4-Dinitrotoluene	92		96		40-140	4		30
2,6-Dinitrotoluene	89		92		40-140	3		30
Azobenzene	65		69		40-140	6		30
Fluoranthene	74		77		40-140	4		30
4-Bromophenyl phenyl ether	74		70		40-140	6		30
Bis(2-chloroisopropyl)ether	40		42		40-140	5		30
Bis(2-chloroethoxy)methane	66		68		40-140	3		30
Hexachlorobutadiene	80		84		40-140	5		30
Hexachloroethane	66		69		40-140	4		30
Isophorone	64		65		40-140	2		30
Naphthalene	69		72		40-140	4		30
Nitrobenzene	74		75		40-140	1		30
Bis(2-ethylhexyl)phthalate	77		84		40-140	9		30
Butyl benzyl phthalate	79		84		40-140	6		30

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG1705503-2 WG1705503-3								
Di-n-butylphthalate	76		80		40-140	5		30
Di-n-octylphthalate	75		80		40-140	6		30
Diethyl phthalate	77		82		40-140	6		30
Dimethyl phthalate	80		82		40-140	2		30
Benzo(a)anthracene	71		77		40-140	8		30
Benzo(a)pyrene	81		85		40-140	5		30
Benzo(b)fluoranthene	79		84		40-140	6		30
Benzo(k)fluoranthene	77		82		40-140	6		30
Chrysene	72		77		40-140	7		30
Acenaphthylene	76		79		40-140	4		30
Anthracene	71		76		40-140	7		30
Benzo(ghi)perylene	77		82		40-140	6		30
Fluorene	72		78		40-140	8		30
Phenanthrene	69		72		40-140	4		30
Dibenzo(a,h)anthracene	78		83		40-140	6		30
Indeno(1,2,3-cd)pyrene	90		94		40-140	4		30
Pyrene	70		73		40-140	4		30
Aniline	59		59		40-140	0		30
4-Chloroaniline	62		64		40-140	3		30
Dibenzofuran	72		76		40-140	5		30
2-Methylnaphthalene	71		73		40-140	3		30
Acetophenone	70		72		40-140	3		30
2,4,6-Trichlorophenol	95		93		30-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG1705503-2 WG1705503-3								
2-Chlorophenol	74		76		30-130	3		30
2,4-Dichlorophenol	79		80		30-130	1		30
2,4-Dimethylphenol	79		80		30-130	1		30
2-Nitrophenol	96		96		30-130	0		30
4-Nitrophenol	85		88		30-130	3		30
2,4-Dinitrophenol	131	Q	135	Q	30-130	3		30
Pentachlorophenol	92		98		30-130	6		30
Phenol	70		72		30-130	3		30
2-Methylphenol	78		80		30-130	3		30
3-Methylphenol/4-Methylphenol	74		76		30-130	3		30
2,4,5-Trichlorophenol	90		90		30-130	0		30
Biphenyl	70		72		40-140	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	75		79		30-130
Phenol-d6	75		74		30-130
Nitrobenzene-d5	81		84		30-130
2-Fluorobiphenyl	77		79		30-130
2,4,6-Tribromophenol	97		95		30-130
4-Terphenyl-d14	81		83		30-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 Batch: WG1706008-2								
Perfluorobutanoic Acid (PFBA)	95		-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	96		-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	97		-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	104		-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	96		-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	101		-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	96		-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	107		-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	90		-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	99		-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	105		-		70-132	-		30
Perfluorononanoic Acid (PFNA)	96		-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	101		-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	101		-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	107		-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	102		-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	95		-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	98		-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	91		-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	92		-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	97		-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	101		-		69-135	-		30

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 Batch: WG1706008-2								
Perfluorotridecanoic Acid (PFTrDA)	111		-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	106		-		69-133	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCS %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	45	Q			61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	49	Q			58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89				74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	72				14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	49	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	54	Q			71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86				78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	62	Q			75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	88				20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	54	Q			72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	72	Q			79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	56	Q			75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80				19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	36				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	62				61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	1	Q			5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	33	Q			34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	52	Q			54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	35				24-159

Lab Control Sample Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 Batch: WG1706008-2								
Perfluorooctanesulfonamide (FOSA)	96		-		67-137	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	83				5-117

Matrix Spike Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

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): 02 QC Batch ID: WG1706008-3 QC Sample: L2258483-05 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	1.88	11	12.3	95		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	7.77	11	17.4	88		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	9.76	9.58	98		-	-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	10.3	11.8	114		-	-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	3.66	11	14.3	97		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	10.4	9.58	93		-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	3.54	11	13.6	92		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	1.87	10	12.3	104		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	2.54	11	12.2	88		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	10.5	12.1	116		-	-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	10.5	10.3	98		-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	2.50	11	13.4	99		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	15.7	10.2	25.4	95		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	5.72	11	16.6	99		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	5.35	10.6	13.0	73		-	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	10.6	10.6	100		-	-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	11	9.64	88		-	-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	7.70	11	17.4	88		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	10.6	10.2	96		-	-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	ND	11	11.3	103		-	-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	11	10.1	92		-	-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	3.45	11	14.1	97		-	-		69-135	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

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): 02 QC Batch ID: WG1706008-3 QC Sample: L2258483-05 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	11	11.0	100		-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	11	11.6F	106		-	-		69-133	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	115				19-175
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	63				14-167
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98				20-154
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59				34-137
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	105				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88				75-130
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	106				78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	25				24-159
Perfluoro[13C4]Butanoic Acid (MPFBA)	68				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	69				58-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	10				5-117
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97				79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88				75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77				72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89				74-139

Lab Duplicate Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1706008-4 QC Sample: L2258483-06 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	0.261J	ND	ng/g	NC		30
Perfluoropentanoic Acid (PFPeA)	0.717J	0.844	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)	0.249J	0.428J	ng/g	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	0.245J	0.298J	ng/g	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	0.151J	0.127J	ng/g	NC		30
Perfluorooctanoic Acid (PFOA)	0.176J	0.187JF	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)	0.124J	0.113JF	ng/g	NC		30
Perfluorooctanesulfonic Acid (PFOS)	0.863	0.682	ng/g	23		30
Perfluorodecanoic Acid (PFDA)	0.146J	0.153J	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)	0.094JF	ND	ng/g	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/g	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.130JF	ND	ng/g	NC		30

Lab Duplicate Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1706008-4 QC Sample: L2258483-06 Client ID: DUP Sample						
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
PFOA/PFOS, Total	1.04J	0.869J	ng/g	NC		30
PFAS, Total (5)	1.56J	1.41J	ng/g	NC		30
PFAS, Total (6)	1.71J	1.56J	ng/g	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	25	Q	5	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	28	Q	3	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	109		99		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	89		80		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	32	Q	4	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	45	Q	6	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		98		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	65	Q	14	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	109		101		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	64	Q	21	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		92		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		35	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	119		107		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	30	Q	15	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		50	Q	61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	32	Q	17	Q	34-137

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1706008-4 QC Sample: L2258483-06 Client ID: DUP Sample						

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		51	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	80		60		24-159

SEMIVOLATILES

High Resolution Mass Spectrometry

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
Client ID: TP-5A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 11:25
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8290A
Analytical Date: 11/07/22 15:15
Analyst: CP
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 11/04/22 09:50
Cleanup Method: EPA 8290A
Cleanup Date: 11/06/22

Parameter	Result	Qualifier	EMPC	Units	RL	MDL	Dilution Factor
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab							
2,3,7,8-TCDD	ND			pg/g	0.501	0.154	1
1,2,3,7,8-PeCDD	ND			pg/g	2.50	0.368	1
1,2,3,4,7,8-HxCDD	ND			pg/g	2.50	0.553	1
1,2,3,6,7,8-HxCDD	ND			pg/g	2.50	0.430	1
1,2,3,7,8,9-HxCDD	ND			pg/g	2.50	0.384	1
1,2,3,4,6,7,8-HpCDD	ND		4.85	pg/g	2.50	0.271	1
OCDD	1240			pg/g	5.01	0.531	1
2,3,7,8-TCDF	ND			pg/g	0.501	0.138	1
1,2,3,7,8-PeCDF	ND			pg/g	2.50	0.300	1
2,3,4,7,8-PeCDF	ND			pg/g	2.50	0.251	1
1,2,3,4,7,8-HxCDF	ND			pg/g	2.50	0.320	1
1,2,3,6,7,8-HxCDF	ND			pg/g	2.50	0.350	1
1,2,3,7,8,9-HxCDF	ND			pg/g	2.50	0.284	1
2,3,4,6,7,8-HxCDF	ND			pg/g	2.50	0.304	1
1,2,3,4,6,7,8-HpCDF	ND			pg/g	2.50	0.396	1
1,2,3,4,7,8,9-HpCDF	ND			pg/g	2.50	0.274	1
OCDF	ND			pg/g	5.01	0.846	1
Total TCDD	ND			pg/g	0.501	0.154	1
Total PeCDD	ND			pg/g	2.50	0.368	1
Total HxCDD	ND			pg/g	2.50	0.553	1
Total HpCDD	ND		4.83	pg/g	2.50	0.271	1
Total TCDF	ND			pg/g	0.501	0.138	1
Total PeCDF	ND			pg/g	2.50	0.300	1
Total HxCDF	ND			pg/g	2.50	0.320	1
Total HpCDF	ND			pg/g	2.50	0.396	1
Total PCDD	1240		1240	pg/g	0.501	0.154	1
Total PCDF	ND			pg/g	0.501	0.138	1
Toxic Equivalency (TEQ)	0.371			pg/g	0.002	0.002	1



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
Client ID: TP-5A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 11:25
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	EMPC	Units	RL	MDL	Dilution Factor
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Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab

Surrogate/Cleanup Standard	% Recovery	Qualifier	Acceptance Criteria
13C12-2,3,7,8-TCDF	88		40-135
13C12-2,3,7,8-TCDD	81		40-135
13C12-1,2,3,7,8-PeCDF	76		40-135
13C12-2,3,4,7,8-PeCDF	85		40-135
13C12-1,2,3,7,8-PeCDD	82		40-135
13C12-1,2,3,4,7,8-HxCDF	97		40-135
13C12-1,2,3,6,7,8-HxCDF	104		40-135
13C12-2,3,4,6,7,8-HxCDF	90		40-135
13C12-1,2,3,7,8,9-HxCDF	97		40-135
13C12-1,2,3,4,7,8-HxCDD	87		40-135
13C12-1,2,3,6,7,8-HxCDD	94		40-135
13C12-1,2,3,4,6,7,8-HpCDF	106		40-135
13C12-1,2,3,4,7,8,9-HpCDF	96		40-135
13C12-1,2,3,4,6,7,8-HpCDD	103		40-135
13C12-OCDD	93		40-135
37CL4-2,3,7,8-TCDD	125		40-135

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8290A
 Analytical Date: 11/07/22 12:02
 Analyst: CP

Extraction Method: EPA 3546
 Extraction Date: 11/04/22 09:50
 Cleanup Method: EPA 8290A
 Cleanup Date: 11/06/22

Parameter	Result	Qualifier	EMPC	Units	RL	MDL
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab for sample(s): 02 Batch: WG1708165-1						
2,3,7,8-TCDD	ND			pg/g	0.500	0.154
1,2,3,7,8-PeCDD	ND			pg/g	2.50	0.367
1,2,3,4,7,8-HxCDD	ND			pg/g	2.50	0.552
1,2,3,6,7,8-HxCDD	ND			pg/g	2.50	0.429
1,2,3,7,8,9-HxCDD	ND			pg/g	2.50	0.383
1,2,3,4,6,7,8-HpCDD	ND			pg/g	2.50	0.271
OCDD	ND			pg/g	5.00	0.530
2,3,7,8-TCDF	ND			pg/g	0.500	0.138
1,2,3,7,8-PeCDF	ND			pg/g	2.50	0.300
2,3,4,7,8-PeCDF	ND			pg/g	2.50	0.251
1,2,3,4,7,8-HxCDF	ND			pg/g	2.50	0.320
1,2,3,6,7,8-HxCDF	ND			pg/g	2.50	0.350
1,2,3,7,8,9-HxCDF	ND			pg/g	2.50	0.284
2,3,4,6,7,8-HxCDF	ND			pg/g	2.50	0.304
1,2,3,4,6,7,8-HpCDF	ND			pg/g	2.50	0.396
1,2,3,4,7,8,9-HpCDF	ND			pg/g	2.50	0.274
OCDF	ND			pg/g	5.00	0.845
Total TCDD	ND			pg/g	0.500	0.154
Total PeCDD	ND			pg/g	2.50	0.367
Total HxCDD	ND			pg/g	2.50	0.552
Total HpCDD	ND			pg/g	2.50	0.271
Total TCDF	ND			pg/g	0.500	0.138
Total PeCDF	ND			pg/g	2.50	0.300
Total HxCDF	ND			pg/g	2.50	0.320
Total HpCDF	ND			pg/g	2.50	0.396
Total PCDD	ND			pg/g	0.500	0.154
Total PCDF	ND			pg/g	0.500	0.138
Toxic Equivalency (TEQ)	ND			pg/g	0.002	0.002

Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8290A
 Analytical Date: 11/07/22 12:02
 Analyst: CP

Extraction Method: EPA 3546
 Extraction Date: 11/04/22 09:50
 Cleanup Method: EPA 8290A
 Cleanup Date: 11/06/22

Parameter	Result	Qualifier	EMPC	Units	RL	MDL
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab for sample(s): 02 Batch: WG1708165-1						

Surrogate/Cleanup Standard	%Recovery	Qualifier	Acceptance Criteria
13C12-2,3,7,8-TCDF	69		40-135
13C12-2,3,7,8-TCDD	70		40-135
13C12-1,2,3,7,8-PeCDF	73		40-135
13C12-2,3,4,7,8-PeCDF	68		40-135
13C12-1,2,3,7,8-PeCDD	65		40-135
13C12-1,2,3,4,7,8-HxCDF	92		40-135
13C12-1,2,3,6,7,8-HxCDF	89		40-135
13C12-2,3,4,6,7,8-HxCDF	86		40-135
13C12-1,2,3,7,8,9-HxCDF	91		40-135
13C12-1,2,3,4,7,8-HxCDD	71		40-135
13C12-1,2,3,6,7,8-HxCDD	70		40-135
13C12-1,2,3,4,6,7,8-HpCDF	82		40-135
13C12-1,2,3,4,7,8,9-HpCDF	81		40-135
13C12-1,2,3,4,6,7,8-HpCDD	82		40-135
13C12-OCDD	63		40-135
37CL4-2,3,7,8-TCDD	99		40-135

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab Associated sample(s): 02 Batch: WG1708165-2								
2,3,7,8-TCDD	108		-		70-128	-		25
1,2,3,7,8-PeCDD	110		-		74-135	-		25
1,2,3,4,7,8-HxCDD	119		-		72-131	-		25
1,2,3,6,7,8-HxCDD	129		-		74-134	-		25
1,2,3,7,8,9-HxCDD	116		-		71-138	-		25
1,2,3,4,6,7,8-HpCDD	98		-		76-125	-		25
OCDD	112		-		73-135	-		25
2,3,7,8-TCDF	129		-		75-135	-		25
1,2,3,7,8-PeCDF	113		-		77-131	-		25
2,3,4,7,8-PeCDF	113		-		75-128	-		25
1,2,3,4,7,8-HxCDF	117		-		77-130	-		25
1,2,3,6,7,8-HxCDF	118		-		73-134	-		25
1,2,3,7,8,9-HxCDF	126		-		74-135	-		25
2,3,4,6,7,8-HxCDF	122		-		74-133	-		25
1,2,3,4,6,7,8-HpCDF	115		-		73-135	-		25
1,2,3,4,7,8,9-HpCDF	123		-		72-131	-		25
OCDF	140		-		66-144	-		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab Associated sample(s): 02 Batch: WG1708165-2

Surrogate/Cleanup Standard	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
13C12-2,3,7,8-TCDF	70				40-135
13C12-2,3,7,8-TCDD	63				40-135
13C12-1,2,3,7,8-PeCDF	67				40-135
13C12-2,3,4,7,8-PeCDF	63				40-135
13C12-1,2,3,7,8-PeCDD	67				40-135
13C12-1,2,3,4,7,8-HxCDF	94				40-135
13C12-1,2,3,6,7,8-HxCDF	100				40-135
13C12-2,3,4,6,7,8-HxCDF	76				40-135
13C12-1,2,3,7,8,9-HxCDF	90				40-135
13C12-1,2,3,4,7,8-HxCDD	75				40-135
13C12-1,2,3,6,7,8-HxCDD	74				40-135
13C12-1,2,3,4,6,7,8-HpCDF	93				40-135
13C12-1,2,3,4,7,8,9-HpCDF	89				40-135
13C12-1,2,3,4,6,7,8-HpCDD	98				40-135
13C12-OCDD	83				40-135
37CL4-2,3,7,8-TCDD	109				40-135

Matrix Spike Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1708165-3 WG1708165-4 QC Sample: L2259129-02 Client ID: TP-5A (0-2)												
2,3,7,8-TCDD	ND	9.9	9.97	101		12.2	120		70-128	20		25
1,2,3,7,8-PeCDD	ND	49.5	48.9	99		56.4	111		74-135	14		25
1,2,3,4,7,8-HxCDD	ND	49.5	56.5	114		59.3	116		72-131	5		25
1,2,3,6,7,8-HxCDD	ND	49.5	50.6	102		48.3	95		74-134	5		25
1,2,3,7,8,9-HxCDD	ND	49.5	54.0	109		50.5	99		71-138	7		25
1,2,3,4,6,7,8-HpCDD	ND	49.5	48.4	98		50.5	99		76-125	4		25
OCDD	1240	99	1370	131		1380	137	Q	73-135	1		25
2,3,7,8-TCDF	ND	9.9	8.43	85		11.4	112		75-135	30	Q	25
1,2,3,7,8-PeCDF	ND	49.5	51.1	103		55.2	108		77-131	8		25
2,3,4,7,8-PeCDF	ND	49.5	50.0	101		48.8	96		75-128	2		25
1,2,3,4,7,8-HxCDF	ND	49.5	44.8	91		58.6	115		77-130	27	Q	25
1,2,3,6,7,8-HxCDF	ND	49.5	47.9	97		57.8	113		73-134	19		25
1,2,3,7,8,9-HxCDF	ND	49.5	50.5	102		61.0	120		74-135	19		25
2,3,4,6,7,8-HxCDF	ND	49.5	46.9	95		53.9	106		74-133	14		25
1,2,3,4,6,7,8-HpCDF	ND	49.5	52.1	105		55.9	110		73-135	7		25
1,2,3,4,7,8,9-HpCDF	ND	49.5	53.1	107		62.6	123		72-131	16		25
OCDF	ND	99	107	108		132	130		66-144	21		25

Surrogate/Cleanup Standard	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
13C12-2,3,7,8-TCDF	71		62		40-135
13C12-2,3,7,8-TCDD	58		60		40-135
13C12-1,2,3,7,8-PeCDF	69		86		40-135

Matrix Spike Analysis**Batch Quality Control****Project Name:** SOUTH HIGHLAND**Project Number:** 22098**Lab Number:** L2259129**Report Date:** 11/15/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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Dioxins & Furans by Isotope Dilution HRMS - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1708165-3 WG1708165-4 QC Sample: L2259129-02
 Client ID: TP-5A (0-2)

Surrogate/Cleanup Standard	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
13C12-2,3,4,7,8-PeCDF	65		90		40-135
13C12-1,2,3,7,8-PeCDD	76		88		40-135
13C12-1,2,3,4,7,8-HxCDF	118		80		40-135
13C12-1,2,3,6,7,8-HxCDF	103		74		40-135
13C12-2,3,4,6,7,8-HxCDF	85		69		40-135
13C12-1,2,3,7,8,9-HxCDF	95		79		40-135
13C12-1,2,3,4,7,8-HxCDD	71		70		40-135
13C12-1,2,3,6,7,8-HxCDD	75		74		40-135
13C12-1,2,3,4,6,7,8-HpCDF	92		90		40-135
13C12-1,2,3,4,7,8,9-HpCDF	109		89		40-135
13C12-1,2,3,4,6,7,8-HpCDD	103		102		40-135
13C12-OCDD	89		90		40-135
37CL4-2,3,7,8-TCDD	87		106		40-135

PETROLEUM HYDROCARBONS

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-01

Date Collected: 10/20/22 09:05

Client ID: TP-7A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 131, VPH-18-2.1

Analytical Date: 11/10/22 13:22

Analyst: BAD

Percent Solids: 96%

Trap: EST, Carbopack B/Carboxen 1000&1001

Analytical Column: Restek, RTX-502.2,
105m, 0.53ID, 3um**Quality Control Information**

Condition of sample received:

Satisfactory

Sample Temperature upon receipt:

Received on Ice

Were samples received in methanol?

Yes (Covering the Soil)

Methanol ratio:

1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Petroleum Hydrocarbons - Westborough Lab

C5-C8 Aliphatics	ND		mg/kg	5.24	5.24	1
C9-C12 Aliphatics	ND		mg/kg	5.24	5.24	1
C9-C10 Aromatics	ND		mg/kg	5.24	5.24	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.24	5.24	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.24	5.24	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	113		70-130
2,5-Dibromotoluene-FID	114		70-130

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-01

Client ID: TP-7A (0-2)

Sample Location: TRURO

Date Collected: 10/20/22 09:05

Date Received: 10/21/22

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 135,EPH-19-2.1

Analytical Date: 10/30/22 18:15

Analyst: MC

Percent Solids: 96%

Extraction Method: EPA 3546

Extraction Date: 10/28/22 09:02

Cleanup Method1: EPH-19-2.1

Cleanup Date1: 10/29/22

Quality Control Information

Condition of sample received:

Satisfactory

Sample Temperature upon receipt:

Received on Ice

Sample Extraction method:

Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Extractable Petroleum Hydrocarbons - Westborough Lab

C9-C18 Aliphatics	ND		mg/kg	6.76	6.76	1
C19-C36 Aliphatics	ND		mg/kg	6.76	6.76	1
C11-C22 Aromatics	ND		mg/kg	6.76	6.76	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.76	6.76	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	70		40-140
o-Terphenyl	57		40-140
2-Fluorobiphenyl	70		40-140
2-Bromonaphthalene	71		40-140

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-02

Date Collected: 10/20/22 11:25

Client ID: TP-5A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 131, VPH-18-2.1

Analytical Date: 11/10/22 13:52

Analyst: BAD

Percent Solids: 96%

Trap: EST, Carbopack B/Carboxen 1000&1001

Analytical Column: Restek, RTX-502.2,
105m, 0.53ID, 3um**Quality Control Information**

Condition of sample received:

Satisfactory

Sample Temperature upon receipt:

Received on Ice

Were samples received in methanol?

Yes (Covering the Soil)

Methanol ratio:

1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Petroleum Hydrocarbons - Westborough Lab

C5-C8 Aliphatics	ND		mg/kg	4.36	4.36	1
C9-C12 Aliphatics	ND		mg/kg	4.36	4.36	1
C9-C10 Aromatics	ND		mg/kg	4.36	4.36	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.36	4.36	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.36	4.36	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	130		70-130
2,5-Dibromotoluene-FID	131	Q	70-130



Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-02

Client ID: TP-5A (0-2)

Sample Location: TRURO

Date Collected: 10/20/22 11:25

Date Received: 10/21/22

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 135,EPH-19-2.1

Analytical Date: 10/30/22 18:40

Analyst: MC

Percent Solids: 96%

Extraction Method: EPA 3546

Extraction Date: 10/28/22 09:02

Cleanup Method1: EPH-19-2.1

Cleanup Date1: 10/29/22

Quality Control Information

Condition of sample received:

Satisfactory

Sample Temperature upon receipt:

Received on Ice

Sample Extraction method:

Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Extractable Petroleum Hydrocarbons - Westborough Lab

C9-C18 Aliphatics	ND		mg/kg	6.91	6.91	1
C19-C36 Aliphatics	ND		mg/kg	6.91	6.91	1
C11-C22 Aromatics	ND		mg/kg	6.91	6.91	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.91	6.91	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	56		40-140
2-Fluorobiphenyl	68		40-140
2-Bromonaphthalene	69		40-140

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-03

Date Collected: 10/20/22 09:55

Client ID: TP-6A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 131, VPH-18-2.1

Analytical Date: 11/10/22 14:23

Analyst: BAD

Percent Solids: 96%

Trap: EST, Carbopack B/Carboxen 1000&1001

Analytical Column: Restek, RTX-502.2,
105m, 0.53ID, 3um**Quality Control Information**

Condition of sample received:

Satisfactory

Sample Temperature upon receipt:

Received on Ice

Were samples received in methanol?

Yes (Covering the Soil)

Methanol ratio:

1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Petroleum Hydrocarbons - Westborough Lab

C5-C8 Aliphatics	ND		mg/kg	4.43	4.43	1
C9-C12 Aliphatics	ND		mg/kg	4.43	4.43	1
C9-C10 Aromatics	ND		mg/kg	4.43	4.43	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.43	4.43	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.43	4.43	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	144	Q	70-130
2,5-Dibromotoluene-FID	145	Q	70-130



Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-03

Client ID: TP-6A (0-2)

Sample Location: TRURO

Date Collected: 10/20/22 09:55

Date Received: 10/21/22

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 135,EPH-19-2.1

Analytical Date: 10/30/22 19:05

Analyst: MC

Percent Solids: 96%

Extraction Method: EPA 3546

Extraction Date: 10/28/22 09:02

Cleanup Method1: EPH-19-2.1

Cleanup Date1: 10/29/22

Quality Control Information

Condition of sample received:

Satisfactory

Sample Temperature upon receipt:

Received on Ice

Sample Extraction method:

Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Extractable Petroleum Hydrocarbons - Westborough Lab

C9-C18 Aliphatics	ND		mg/kg	6.77	6.77	1
C19-C36 Aliphatics	ND		mg/kg	6.77	6.77	1
C11-C22 Aromatics	ND		mg/kg	6.77	6.77	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.77	6.77	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	76		40-140
o-Terphenyl	60		40-140
2-Fluorobiphenyl	69		40-140
2-Bromonaphthalene	70		40-140

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 135,EPH-19-2.1
Analytical Date: 10/30/22 17:50
Analyst: MC

Extraction Method: EPA 3546
Extraction Date: 10/28/22 09:02
Cleanup Method: EPH-19-2.1
Cleanup Date: 10/29/22

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-03 Batch: WG1705357-1					
C9-C18 Aliphatics	ND		mg/kg	6.48	6.48
C19-C36 Aliphatics	ND		mg/kg	6.48	6.48
C11-C22 Aromatics	ND		mg/kg	6.48	6.48
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.48	6.48

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	73		40-140
o-Terphenyl	57		40-140
2-Fluorobiphenyl	68		40-140
2-Bromonaphthalene	69		40-140

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 131, VPH-18-2.1
Analytical Date: 11/10/22 12:51
Analyst: BAD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-03 Batch: WG1711123-4					
C5-C8 Aliphatics	ND		mg/kg	5.00	5.00
C9-C12 Aliphatics	ND		mg/kg	5.00	5.00
C9-C10 Aromatics	ND		mg/kg	5.00	5.00
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.00	5.00
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.00	5.00

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	113		70-130
2,5-Dibromotoluene-FID	114		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03 Batch: WG1705357-2 WG1705357-3								
C9-C18 Aliphatics	84		67		40-140	23		25
C19-C36 Aliphatics	90		88		40-140	2		25
C11-C22 Aromatics	75		68		40-140	10		25
Naphthalene	74		65		40-140	13		25
2-Methylnaphthalene	74		65		40-140	13		25
Acenaphthylene	72		64		40-140	12		25
Acenaphthene	74		65		40-140	13		25
Fluorene	72		64		40-140	12		25
Phenanthrene	71		62		40-140	14		25
Anthracene	72		63		40-140	13		25
Fluoranthene	72		63		40-140	13		25
Pyrene	72		64		40-140	12		25
Benzo(a)anthracene	72		63		40-140	13		25
Chrysene	69		61		40-140	12		25
Benzo(b)fluoranthene	69		61		40-140	12		25
Benzo(k)fluoranthene	67		59		40-140	13		25
Benzo(a)pyrene	75		67		40-140	11		25
Indeno(1,2,3-cd)Pyrene	68		62		40-140	9		25
Dibenzo(a,h)anthracene	66		59		40-140	11		25
Benzo(ghi)perylene	64		58		40-140	10		25

Lab Control Sample Analysis **Batch Quality Control**

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03 Batch: WG1705357-2 WG1705357-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	79		74		40-140
o-Terphenyl	64		54		40-140
2-Fluorobiphenyl	72		63		40-140
2-Bromonaphthalene	73		64		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03 Batch: WG1711123-2 WG1711123-3								
C5-C8 Aliphatics	87		96		70-130	9		25
C9-C12 Aliphatics	105		115		70-130	9		25
C9-C10 Aromatics	104		111		70-130	7		25
Benzene	98		105		70-130	6		25
Toluene	100		106		70-130	6		25
Ethylbenzene	104		111		70-130	7		25
p/m-Xylene	104		111		70-130	7		25
o-Xylene	101		108		70-130	7		25
Methyl tert butyl ether	102		106		70-130	4		25
Naphthalene	106		111		70-130	5		25
1,2,4-Trimethylbenzene	104		111		70-130	7		25
Pentane	71		78		70-130	10		25
2-Methylpentane	77		85		70-130	9		25
2,2,4-Trimethylpentane	97		107		70-130	10		25
n-Nonane	104		114		30-130	9		25
n-Decane	106		117		70-130	10		25
n-Butylcyclohexane	106		115		70-130	8		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	110		116		70-130
2,5-Dibromotoluene-FID	111		116		70-130

PCBS

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-01
Client ID: TP-7A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:05
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 97,8082A
Analytical Date: 10/31/22 10:17
Analyst: JM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/30/22 09:56
Cleanup Method: EPA 3665A
Cleanup Date: 10/30/22
Cleanup Method: EPA 3660B
Cleanup Date: 10/31/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.0	33.0	1	A
Aroclor 1221	ND		ug/kg	33.0	33.0	1	A
Aroclor 1232	ND		ug/kg	33.0	33.0	1	A
Aroclor 1242	ND		ug/kg	33.0	33.0	1	A
Aroclor 1248	ND		ug/kg	33.0	33.0	1	A
Aroclor 1254	ND		ug/kg	33.0	33.0	1	A
Aroclor 1260	ND		ug/kg	33.0	33.0	1	A
Aroclor 1262	ND		ug/kg	33.0	33.0	1	A
Aroclor 1268	ND		ug/kg	33.0	33.0	1	A
PCBs, Total	ND		ug/kg	33.0	33.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	63		30-150	B
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	63		30-150	A

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-02
Client ID: TP-5A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 11:25
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 97,8082A
Analytical Date: 10/31/22 10:25
Analyst: JM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/30/22 09:56
Cleanup Method: EPA 3665A
Cleanup Date: 10/30/22
Cleanup Method: EPA 3660B
Cleanup Date: 10/31/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.5	33.5	1	A
Aroclor 1221	ND		ug/kg	33.5	33.5	1	A
Aroclor 1232	ND		ug/kg	33.5	33.5	1	A
Aroclor 1242	ND		ug/kg	33.5	33.5	1	A
Aroclor 1248	ND		ug/kg	33.5	33.5	1	A
Aroclor 1254	ND		ug/kg	33.5	33.5	1	A
Aroclor 1260	ND		ug/kg	33.5	33.5	1	B
Aroclor 1262	ND		ug/kg	33.5	33.5	1	A
Aroclor 1268	ND		ug/kg	33.5	33.5	1	A
PCBs, Total	ND		ug/kg	33.5	33.5	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	59		30-150	B
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	59		30-150	A

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

SAMPLE RESULTS

Lab ID: L2259129-03
Client ID: TP-6A (0-2)
Sample Location: TRURO

Date Collected: 10/20/22 09:55
Date Received: 10/21/22
Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 97,8082A
Analytical Date: 10/31/22 10:33
Analyst: JM
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/30/22 09:56
Cleanup Method: EPA 3665A
Cleanup Date: 10/30/22
Cleanup Method: EPA 3660B
Cleanup Date: 10/31/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.7	33.7	1	A
Aroclor 1221	ND		ug/kg	33.7	33.7	1	A
Aroclor 1232	ND		ug/kg	33.7	33.7	1	A
Aroclor 1242	ND		ug/kg	33.7	33.7	1	A
Aroclor 1248	ND		ug/kg	33.7	33.7	1	A
Aroclor 1254	ND		ug/kg	33.7	33.7	1	A
Aroclor 1260	ND		ug/kg	33.7	33.7	1	A
Aroclor 1262	ND		ug/kg	33.7	33.7	1	A
Aroclor 1268	ND		ug/kg	33.7	33.7	1	A
PCBs, Total	ND		ug/kg	33.7	33.7	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	57		30-150	B
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	55		30-150	A

Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8082A
Analytical Date: 10/31/22 09:38
Analyst: JM

Extraction Method: EPA 3546
Extraction Date: 10/30/22 09:56
Cleanup Method: EPA 3665A
Cleanup Date: 10/30/22
Cleanup Method: EPA 3660B
Cleanup Date: 10/31/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-03 Batch: WG1705913-1						
Aroclor 1016	ND		ug/kg	32.8	32.8	A
Aroclor 1221	ND		ug/kg	32.8	32.8	A
Aroclor 1232	ND		ug/kg	32.8	32.8	A
Aroclor 1242	ND		ug/kg	32.8	32.8	A
Aroclor 1248	ND		ug/kg	32.8	32.8	A
Aroclor 1254	ND		ug/kg	32.8	32.8	A
Aroclor 1260	ND		ug/kg	32.8	32.8	A
Aroclor 1262	ND		ug/kg	32.8	32.8	A
Aroclor 1268	ND		ug/kg	32.8	32.8	A
PCBs, Total	ND		ug/kg	32.8	32.8	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	61		30-150	B
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	61		30-150	A

Lab Control Sample Analysis Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCS %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-03 Batch: WG1705913-2 WG1705913-3									
Aroclor 1016	86		84		40-140	2		30	A
Aroclor 1260	73		72		40-140	1		30	A

Surrogate	LCS %Recovery	Qual	LCS %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		66		30-150	B
Decachlorobiphenyl	59		57		30-150	B
2,4,5,6-Tetrachloro-m-xylene	69		65		30-150	A
Decachlorobiphenyl	60		57		30-150	A

METALS

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-01

Date Collected: 10/20/22 09:05

Client ID: TP-7A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.01	0.153	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Arsenic, Total	1.54		mg/kg	0.402	0.084	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Barium, Total	2.06		mg/kg	0.402	0.070	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Beryllium, Total	0.136	J	mg/kg	0.201	0.013	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Cadmium, Total	ND		mg/kg	0.402	0.039	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Chromium, Total	1.85		mg/kg	0.402	0.039	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Lead, Total	1.56	J	mg/kg	2.01	0.108	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Mercury, Total	ND		mg/kg	0.078	0.078	1	11/01/22 02:05	11/01/22 16:00	EPA 7471B	97,7471B	ZK
Nickel, Total	2.05		mg/kg	1.00	0.097	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Selenium, Total	ND		mg/kg	2.01	0.104	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Silver, Total	ND		mg/kg	0.402	0.114	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Thallium, Total	0.263	J	mg/kg	2.01	0.127	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Vanadium, Total	3.25		mg/kg	0.402	0.082	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB
Zinc, Total	6.90		mg/kg	2.01	0.118	1	11/01/22 01:22	11/01/22 09:40	EPA 3050B	97,6010D	NTB



Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-02

Date Collected: 10/20/22 11:25

Client ID: TP-5A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	1.97	0.150	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Arsenic, Total	1.55		mg/kg	0.394	0.082	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Barium, Total	1.69		mg/kg	0.394	0.069	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Beryllium, Total	0.061	J	mg/kg	0.197	0.013	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Cadmium, Total	ND		mg/kg	0.394	0.039	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Chromium, Total	1.74		mg/kg	0.394	0.038	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Lead, Total	0.873	J	mg/kg	1.97	0.106	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Mercury, Total	ND		mg/kg	0.074	0.074	1	11/01/22 02:05	11/01/22 16:10	EPA 7471B	97,7471B	ZK
Nickel, Total	2.45		mg/kg	0.986	0.095	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Selenium, Total	ND		mg/kg	1.97	0.102	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Silver, Total	ND		mg/kg	0.394	0.112	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Thallium, Total	0.148	J	mg/kg	1.97	0.124	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Vanadium, Total	2.46		mg/kg	0.394	0.080	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB
Zinc, Total	6.11		mg/kg	1.97	0.116	1	11/01/22 01:22	11/01/22 09:44	EPA 3050B	97,6010D	NTB



Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**SAMPLE RESULTS**

Lab ID: L2259129-03

Date Collected: 10/20/22 09:55

Client ID: TP-6A (0-2)

Date Received: 10/21/22

Sample Location: TRURO

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.02	0.154	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Arsenic, Total	0.510		mg/kg	0.404	0.084	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Barium, Total	0.987		mg/kg	0.404	0.070	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Beryllium, Total	ND		mg/kg	0.202	0.013	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Cadmium, Total	ND		mg/kg	0.404	0.040	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Chromium, Total	0.477		mg/kg	0.404	0.039	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Lead, Total	2.74		mg/kg	2.02	0.108	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Mercury, Total	ND		mg/kg	0.076	0.076	1	11/01/22 02:05	11/01/22 16:13	EPA 7471B	97,7471B	ZK
Nickel, Total	0.128	J	mg/kg	1.01	0.098	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Selenium, Total	ND		mg/kg	2.02	0.104	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Silver, Total	ND		mg/kg	0.404	0.114	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Thallium, Total	0.163	J	mg/kg	2.02	0.127	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Vanadium, Total	1.94		mg/kg	0.404	0.082	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB
Zinc, Total	0.994	J	mg/kg	2.02	0.118	1	11/01/22 01:22	11/01/22 09:48	EPA 3050B	97,6010D	NTB



Project Name: SOUTH HIGHLAND

Lab Number: L2259129

Project Number: 22098

Report Date: 11/15/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1705884-1										
Antimony, Total	ND		mg/kg	2.00	0.152	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Arsenic, Total	ND		mg/kg	0.400	0.083	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Barium, Total	ND		mg/kg	0.400	0.070	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Beryllium, Total	ND		mg/kg	0.200	0.013	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Cadmium, Total	ND		mg/kg	0.400	0.039	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Chromium, Total	ND		mg/kg	0.400	0.038	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Lead, Total	ND		mg/kg	2.00	0.107	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Nickel, Total	ND		mg/kg	1.00	0.097	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Selenium, Total	0.103	J	mg/kg	2.00	0.103	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Silver, Total	ND		mg/kg	0.400	0.113	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Thallium, Total	0.189	J	mg/kg	2.00	0.126	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Vanadium, Total	ND		mg/kg	0.400	0.081	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB
Zinc, Total	ND		mg/kg	2.00	0.117	1	11/01/22 01:22	11/01/22 09:26	97,6010D	NTB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1705885-1										
Mercury, Total	ND		mg/kg	0.167	0.167	1	11/01/22 02:05	11/01/22 15:50	97,7471B	ZK

Prep Information

Digestion Method: EPA 7471B



Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH HIGHLAND

Project Number: 22098

Lab Number: L2259129

Report Date: 11/15/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1705884-2 WG1705884-3 SRM Lot Number: D113-540								
Antimony, Total	160		174		20-250	8		30
Arsenic, Total	105		105		70-130	0		30
Barium, Total	91		90		75-125	1		30
Beryllium, Total	95		98		75-125	3		30
Cadmium, Total	94		96		75-125	2		30
Chromium, Total	94		97		70-130	3		30
Lead, Total	99		98		72-128	1		30
Nickel, Total	98		98		70-130	0		30
Selenium, Total	116		116		66-134	0		30
Silver, Total	97		100		70-131	3		30
Thallium, Total	98		103		70-130	5		30
Vanadium, Total	95		95		74-126	0		30
Zinc, Total	96		97		70-130	1		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1705885-2 WG1705885-3 SRM Lot Number: D113-540								
Mercury, Total	103		99		60-140	4		30

INORGANICS & MISCELLANEOUS

Project Name: SOUTH HIGHLAND**Project Number:** 22098**Lab Number:** L2259129**Report Date:** 11/15/22**SAMPLE RESULTS****Lab ID:** L2259129-01**Client ID:** TP-7A (0-2)**Sample Location:** TRURO**Date Collected:** 10/20/22 09:05**Date Received:** 10/21/22**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 - Westborough Lab										
Solids, Total	95.8		%	0.100	NA	1	-	10/22/22 13:05	121,2540G	RI



Project Name: SOUTH HIGHLAND**Project Number:** 22098**Lab Number:** L2259129**Report Date:** 11/15/22**SAMPLE RESULTS****Lab ID:** L2259129-02**Client ID:** TP-5A (0-2)**Sample Location:** TRURO**Date Collected:** 10/20/22 11:25**Date Received:** 10/21/22**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 - Westborough Lab										
Solids, Total	96.3		%	0.100	NA	1	-	10/22/22 13:05	121,2540G	RI



Project Name: SOUTH HIGHLAND**Project Number:** 22098**Lab Number:** L2259129**Report Date:** 11/15/22**SAMPLE RESULTS****Lab ID:** L2259129-03**Client ID:** TP-6A (0-2)**Sample Location:** TRURO**Date Collected:** 10/20/22 09:55**Date Received:** 10/21/22**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 - Westborough Lab										
Solids, Total	95.9		%	0.100	NA	1	-	10/22/22 13:05	121,2540G	RI



Project Name: SOUTH HIGHLAND
Project Number: 22098

Serial_No:11152215:06
Lab Number: L2259129
Report Date: 11/15/22

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(*)
L2259129-01A	Vial MeOH preserved	A	NA		4.4	Y	Absent		MCP-8260HLW-21(14),VPH-18(28)
L2259129-01B	Vial water preserved	A	NA		4.4	Y	Absent	22-OCT-22 02:24	MCP-8260HLW-21(14)
L2259129-01C	Vial water preserved	A	NA		4.4	Y	Absent	22-OCT-22 02:24	MCP-8260HLW-21(14)
L2259129-01D	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		TS(7)
L2259129-01E	Glass 60mL/2oz unpreserved	A	NA		4.4	Y	Absent		MCP-CR-6010T-10(180),MCP-8082-10(365),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SB-6010T-10(180),MCP-SE-6010T-10(180),MCP-8270-21(14),MCP-BE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L2259129-01F	Glass 250ml/8oz unpreserved	A	NA		4.4	Y	Absent		MCP-8082-10(365),EPH-20(14),MCP-8270-21(14)
L2259129-02A	Vial MeOH preserved	A	NA		4.4	Y	Absent		MCP-8260HLW-21(14),VPH-18(28)
L2259129-02B	Vial water preserved	A	NA		4.4	Y	Absent	22-OCT-22 02:24	MCP-8260HLW-21(14)
L2259129-02C	Vial water preserved	A	NA		4.4	Y	Absent	22-OCT-22 02:24	MCP-8260HLW-21(14)
L2259129-02D	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		TS(7)
L2259129-02E	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-TL-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2259129-02F	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		TS(7)
L2259129-02G	Glass 60mL/2oz unpreserved	A	NA		4.4	Y	Absent		A2-DIOXIN-8290(365)
L2259129-02H	Glass 60mL/2oz unpreserved	A	NA		4.4	Y	Absent		MCP-8082-10(365),EPH-20(14),MCP-8270-21(14)
L2259129-02I	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-537-ISOTOPE(14)

Project Name: SOUTH HIGHLAND**Lab Number:** L2259129**Project Number:** 22098**Report Date:** 11/15/22**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2259129-02K	Glass 250ml/8oz unpreserved	A	NA		4.4	Y	Absent		MCP-8082-10(365),EPH-20(14),MCP-8270-21(14)
L2259129-03A	Vial MeOH preserved	A	NA		4.4	Y	Absent		MCP-8260HLW-21(14),VPH-18(28)
L2259129-03B	Vial water preserved	A	NA		4.4	Y	Absent	22-OCT-22 02:24	MCP-8260HLW-21(14)
L2259129-03C	Vial water preserved	A	NA		4.4	Y	Absent	22-OCT-22 02:24	MCP-8260HLW-21(14)
L2259129-03D	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		TS(7)
L2259129-03E	Glass 60mL/2oz unpreserved	A	NA		4.4	Y	Absent		MCP-8082-10(365),MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-7471T-10(28),MCP-TL-6010T-10(180),MCP-SB-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-8270-21(14),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2259129-03F	Glass 250ml/8oz unpreserved	A	NA		4.4	Y	Absent		MCP-8082-10(365),EPH-20(14),MCP-8270-21(14)

Project Name: SOUTH HIGHLAND
Project Number: 22098

Serial_No:11152215:06
Lab Number: L2259129
Report Date: 11/15/22

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 (PFSA's)		
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: SOUTH HIGHLAND

Project Number: 22098

Serial_No:11152215:06
Lab Number: L2259129

Report Date: 11/15/22

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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

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: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

Data Qualifiers

Identified Compounds (TICs).

- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name: SOUTH HIGHLAND
Project Number: 22098

Lab Number: L2259129
Report Date: 11/15/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.
- 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.
- 135 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, December 2019, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, March 1, 2020.
- 141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

LIMITATION OF LIABILITIES

Alpha Analytical 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 Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical 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 Alpha Analytical.

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

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

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.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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 332: Perchlorate; **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), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

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 Alpha Project Manager.

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Method Blank Summary

Form 4

Volatiles

Client	: Horseley & Witten, Inc.	Lab Number	: L2259129
Project Name	: SOUTH HIGHLAND	Project Number	: 22098
Lab Sample ID	: WG1706665-5	Lab File ID	: V04221031A05
Instrument ID	: VOA104		
Matrix	: SOIL	Analysis Date	: 10/31/22 08:51

Client Sample No.	Lab Sample ID	Analysis Date
WG1706665-3LCS	WG1706665-3	10/31/22 07:32
WG1706665-4LCSD	WG1706665-4	10/31/22 07:59
TP-5A (0-2)	L2259129-02	10/31/22 16:15
TP-6A (0-2)	L2259129-03	10/31/22 16:42

Method Blank Summary

Form 4

Volatiles

Client	: Horseley & Witten, Inc.	Lab Number	: L2259129
Project Name	: SOUTH HIGHLAND	Project Number	: 22098
Lab Sample ID	: WG1706849-5	Lab File ID	: V27221101A05
Instrument ID	: VOA127		
Matrix	: SOIL	Analysis Date	: 11/01/22 08:18

Client Sample No.	Lab Sample ID	Analysis Date
WG1706849-3LCS	WG1706849-3	11/01/22 07:19
WG1706849-4LCSD	WG1706849-4	11/01/22 07:38
TP-7A (0-2)	L2259129-01	11/01/22 14:37

Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : VOA104
 Lab File ID : V04221031A02
 Sample No : WG1706665-2
 Channel :

Lab Number : L2259129
 Project Number : 22098
 Calibration Date : 10/31/22 07:32
 Init. Calib. Date(s) : 06/21/22 06/21/22
 Init. Calib. Times : 14:07 18:02

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	79	0
Dichlorodifluoromethane	0.352	0.275	-	21.9*	20	65	0
Chloromethane	40	47.967	-	-19.9	20	89	0
Vinyl chloride	0.366	0.409	-	-11.7	20	93	0
Bromomethane	40	40.14	-	-0.4	20	76	0
Chloroethane	40	42.967	-	-7.4	20	83	0
Trichlorofluoromethane	0.548	0.515	-	6	20	77	0
Ethyl ether	0.114	0.115	-	-0.9	20	78	0
1,1-Dichloroethene	0.302	0.302	-	0	20	83	0
Carbon disulfide	40	43.348	-	-8.4	20	78	0
Freon-113	0.304	0.347	-	-14.1	20	90	0
Acrolein	0.026	0.035	-	-34.6*	20	100	0
Methylene chloride	40	40.556	-	-1.4	20	72	0
Acetone	40	43.405	-	-8.5	20	82	0
trans-1,2-Dichloroethene	0.329	0.327	-	0.6	20	81	0
Methyl acetate	0.116	0.128	-	-10.3	20	86	0
Methyl tert-butyl ether	0.523	0.565	-	-8	20	80	0
tert-Butyl alcohol	0.018	0.022	-	-22.2*	20	84	0
Diisopropyl ether	0.724	0.906	-	-25.1*	20	95	0
1,1-Dichloroethane	0.649	0.66	-	-1.7	20	84	0
Halothane	0.248	0.268	-	-8.1	20	88	0
Acrylonitrile	0.058	0.063	-	-8.6	20	82	0
Ethyl tert-butyl ether	0.653	0.85	-	-30.2*	20	96	0
Vinyl acetate	0.383	0.457	-	-19.3	20	92	0
cis-1,2-Dichloroethene	0.367	0.35	-	4.6	20	79	0
2,2-Dichloropropane	0.511	0.504	-	1.4	20	79	0
Bromochloromethane	0.17	0.157	-	7.6	20	74	0
Cyclohexane	0.472	0.65	-	-37.7*	20	104	0
Chloroform	0.652	0.554	-	15	20	71	0
Ethyl acetate	0.152	0.171	-	-12.5	20	88	0
Carbon tetrachloride	0.42	0.459	-	-9.3	20	87	0
Tetrahydrofuran	0.059	0.067	-	-13.6	20	87	0
Dibromofluoromethane	0.363	0.313	-	13.8	20	74	0
1,1,1-Trichloroethane	0.48	0.489	-	-1.9	20	80	0
2-Butanone	0.081	0.068	-	16	20	67	0
1,1-Dichloropropene	40	44.159	-	-10.4	20	85	0
Benzene	1.024	1.122	-	-9.6	20	82	0
tert-Amyl methyl ether	0.533	0.596	-	-11.8	20	86	0
1,2-Dichloroethane-d4	0.314	0.254	-	19.1	20	69	0
1,2-Dichloroethane	0.406	0.379	-	6.7	20	75	0
Methyl cyclohexane	0.416	0.505	-	-21.4*	20	89	0
Trichloroethene	0.283	0.32	-	-13.1	20	81	0
Dibromomethane	0.184	0.163	-	11.4	20	69	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : VOA104
 Lab File ID : V04221031A02
 Sample No : WG1706665-2
 Channel :

Lab Number : L2259129
 Project Number : 22098
 Calibration Date : 10/31/22 07:32
 Init. Calib. Date(s) : 06/21/22 06/21/22
 Init. Calib. Times : 14:07 18:02

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.28	0.333	-	-18.9	20	87	0
2-Chloroethyl vinyl ether	0.126	0.137	-	-8.7	20	82	0
Bromodichloromethane	40	39.997	-	0	20	73	0
1,4-Dioxane	0.00212	0.00226*	-	-6.6	20	81	0
cis-1,3-Dichloropropene	40	41.139	-	-2.8	20	79	0
Chlorobenzene-d5	1	1	-	0	20	87	0
Toluene-d8	1.27	1.191	-	6.2	20	81	0
Toluene	0.817	0.793	-	2.9	20	83	0
4-Methyl-2-pentanone	0.074	0.081	-	-9.5	20	90	0
Tetrachloroethene	0.369	0.392	-	-6.2	20	85	0
trans-1,3-Dichloropropene	40	34.31	-	14.2	20	76	0
Ethyl methacrylate	0.27	0.276	-	-2.2	20	79	0
1,1,2-Trichloroethane	40	34.368	-	14.1	20	73	0
Chlorodibromomethane	40	36.832	-	7.9	20	77	0
1,3-Dichloropropane	0.418	0.404	-	3.3	20	74	0
1,2-Dibromoethane	40	34.079	-	14.8	20	73	0
2-Hexanone	0.138	0.137	-	0.7	20	80	0
Chlorobenzene	0.967	0.923	-	4.6	20	77	0
Ethylbenzene	1.641	1.555	-	5.2	20	79	0
1,1,1,2-Tetrachloroethane	40	37.346	-	6.6	20	79	0
p/m Xylene	0.607	0.598	-	1.5	20	79	0
o Xylene	0.605	0.574	-	5.1	20	77	0
Styrene	0.973	0.932	-	4.2	20	74	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	85	0
Bromoform	40	34.98	-	12.6	20	77	0
Isopropylbenzene	2.781	2.752	-	1	20	78	0
4-Bromofluorobenzene	0.846	0.852	-	-0.7	20	84	0
Bromobenzene	0.764	0.697	-	8.8	20	70	0
n-Propylbenzene	3.339	3.232	-	3.2	20	76	0
1,4-Dichlorobutane	0.719	0.752	-	-4.6	20	80	0
1,1,2,2-Tetrachloroethane	0.53	0.497	-	6.2	20	69	0
4-Ethyltoluene	2.746	2.64	-	3.9	20	76	0
2-Chlorotoluene	1.992	1.828	-	8.2	20	72	0
1,3,5-Trimethylbenzene	2.431	2.174	-	10.6	20	72	0
1,2,3-Trichloropropane	0.424	0.364	-	14.2	20	66	0
trans-1,4-Dichloro-2-buten	0.157	0.159	-	-1.3	20	74	0
4-Chlorotoluene	2.109	1.895	-	10.1	20	72	0
tert-Butylbenzene	2.11	2.013	-	4.6	20	75	0
1,2,4-Trimethylbenzene	2.47	2.174	-	12	20	70	0
sec-Butylbenzene	3.191	3.015	-	5.5	20	75	0
p-Isopropyltoluene	2.756	2.626	-	4.7	20	75	0
1,3-Dichlorobenzene	1.478	1.323	-	10.5	20	70	0
1,4-Dichlorobenzene	1.511	1.331	-	11.9	20	71	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : VOA104
 Lab File ID : V04221031A02
 Sample No : WG1706665-2
 Channel :

Lab Number : L2259129
 Project Number : 22098
 Calibration Date : 10/31/22 07:32
 Init. Calib. Date(s) : 06/21/22 06/21/22
 Init. Calib. Times : 14:07 18:02

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.675	1.593	-	4.9	20	74	0
n-Butylbenzene	2.549	2.312	-	9.3	20	72	0
1,2-Dichlorobenzene	1.418	1.219	-	14	20	67	0
1,2,4,5-Tetramethylbenzene	2.886	2.51	-	13	20	66	0
1,2-Dibromo-3-chloropropan	0.103	0.092	-	10.7	20	67	0
1,3,5-Trichlorobenzene	1.281	1.136	-	11.3	20	69	0
Hexachlorobutadiene	0.668	0.594	-	11.1	20	69	0
1,2,4-Trichlorobenzene	1.129	0.995	-	11.9	20	68	0
Naphthalene	2.088	1.809	-	13.4	20	66	0
1,2,3-Trichlorobenzene	1.01	0.857	-	15.1	20	66	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : VOA127
 Lab File ID : V27221101A01
 Sample No : WG1706849-2
 Channel :

Lab Number : L2259129
 Project Number : 22098
 Calibration Date : 11/01/22 06:59
 Init. Calib. Date(s) : 10/21/22 10/21/22
 Init. Calib. Times : 00:12 03:27

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	92	0
Dichlorodifluoromethane	0.239	0.235	-	1.7	20	88	0
Chloromethane	0.254	0.282	-	-11	20	94	0
Vinyl chloride	0.249	0.301	-	-20.9*	20	99	0
Bromomethane	0.179	0.188	-	-5	20	96	0
Chloroethane	0.158	0.18	-	-13.9	20	104	0
Trichlorofluoromethane	0.33	0.401	-	-21.5*	20	99	0
Ethyl ether	0.103	0.12	-	-16.5	20	93	0
1,1-Dichloroethene	0.191	0.235	-	-23*	20	103	0
Carbon disulfide	0.419	0.486	-	-16	20	101	0
Freon-113	0.203	0.264	-	-30*	20	104	0
Acrolein	0.041	0.043	-	-4.9	20	98	0
Methylene chloride	40	44.129	-	-10.3	20	94	0
Acetone	40	38.64	-	3.4	20	80	0
trans-1,2-Dichloroethene	0.236	0.271	-	-14.8	20	98	0
Methyl acetate	0.174	0.161	-	7.5	20	85	-.01
Methyl tert-butyl ether	0.575	0.635	-	-10.4	20	89	-.01
tert-Butyl alcohol	0.035	0.032	-	8.6	20	81	-.01
Diisopropyl ether	0.696	0.779	-	-11.9	20	91	0
1,1-Dichloroethane	0.43	0.49	-	-14	20	94	-.01
Halothane	0.162	0.194	-	-19.8	20	96	-.01
Acrylonitrile	0.076	0.076	-	0	20	82	-.01
Ethyl tert-butyl ether	0.768	0.867	-	-12.9	20	91	0
Vinyl acetate	0.479	0.534	-	-11.5	20	90	-.01
cis-1,2-Dichloroethene	0.264	0.279	-	-5.7	20	94	0
2,2-Dichloropropane	0.371	0.436	-	-17.5	20	101	-.01
Bromochloromethane	0.12	0.134	-	-11.7	20	90	0
Cyclohexane	0.47	0.511	-	-8.7	20	95	0
Chloroform	0.443	0.466	-	-5.2	20	92	-.01
Ethyl acetate	0.231	0.223	-	3.5	20	82	0
Carbon tetrachloride	0.322	0.382	-	-18.6	20	98	0
Tetrahydrofuran	0.071	0.062	-	12.7	20	79	-.01
Dibromofluoromethane	0.283	0.258	-	8.8	20	87	0
1,1,1-Trichloroethane	0.39	0.433	-	-11	20	96	-.01
2-Butanone	0.101	0.093	-	7.9	20	77	0
1,1-Dichloropropene	0.277	0.356	-	-28.5*	20	97	0
Benzene	0.859	1	-	-16.4	20	95	0
tert-Amyl methyl ether	0.636	0.71	-	-11.6	20	91	0
1,2-Dichloroethane-d4	0.336	0.306	-	8.9	20	86	0
1,2-Dichloroethane	0.355	0.379	-	-6.8	20	88	-.01
Methyl cyclohexane	0.414	0.486	-	-17.4	20	98	-.01
Trichloroethene	0.241	0.28	-	-16.2	20	93	0
Dibromomethane	0.147	0.159	-	-8.2	20	89	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : VOA127
 Lab File ID : V27221101A01
 Sample No : WG1706849-2
 Channel :

Lab Number : L2259129
 Project Number : 22098
 Calibration Date : 11/01/22 06:59
 Init. Calib. Date(s) : 10/21/22 10/21/22
 Init. Calib. Times : 00:12 03:27

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.243	0.273	-	-12.3	20	90	0
2-Chloroethyl vinyl ether	0.143	0.155	-	-8.4	20	85	0
Bromodichloromethane	0.352	0.368	-	-4.5	20	89	0
1,4-Dioxane	0.00227	0.00258*	-	-13.7	20	90	-.01
cis-1,3-Dichloropropene	0.366	0.425	-	-16.1	20	90	0
Chlorobenzene-d5	1	1	-	0	20	93	0
Toluene-d8	1.316	1.298	-	1.4	20	91	0
Toluene	0.754	0.856	-	-13.5	20	96	0
4-Methyl-2-pentanone	0.132	0.119	-	9.8	20	79	0
Tetrachloroethene	0.292	0.375	-	-28.4*	20	101	0
trans-1,3-Dichloropropene	0.457	0.511	-	-11.8	20	89	0
Ethyl methacrylate	0.399	0.39	-	2.3	20	86	0
1,1,2-Trichloroethane	0.226	0.231	-	-2.2	20	88	0
Chlorodibromomethane	0.298	0.343	-	-15.1	20	92	0
1,3-Dichloropropane	0.44	0.485	-	-10.2	20	88	0
1,2-Dibromoethane	0.253	0.285	-	-12.6	20	89	0
2-Hexanone	0.223	0.196	-	12.1	20	78	0
Chlorobenzene	0.813	0.933	-	-14.8	20	96	0
Ethylbenzene	1.404	1.636	-	-16.5	20	97	0
1,1,1,2-Tetrachloroethane	0.28	0.336	-	-20	20	94	0
p/m Xylene	0.564	0.657	-	-16.5	20	98	0
o Xylene	0.53	0.605	-	-14.2	20	94	0
Styrene	0.874	1.001	-	-14.5	20	93	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	93	0
Bromoform	0.38	0.415	-	-9.2	20	90	0
Isopropylbenzene	2.619	3.051	-	-16.5	20	96	0
4-Bromofluorobenzene	0.967	0.966	-	0.1	20	94	0
Bromobenzene	0.663	0.721	-	-8.7	20	92	0
n-Propylbenzene	3.159	3.747	-	-18.6	20	97	0
1,4-Dichlorobutane	0.927	0.912	-	1.6	20	85	0
1,1,2,2-Tetrachloroethane	0.63	0.632	-	-0.3	20	87	0
4-Ethyltoluene	2.697	3.154	-	-16.9	20	97	0
2-Chlorotoluene	1.913	2.199	-	-15	20	93	0
1,3,5-Trimethylbenzene	2.339	2.705	-	-15.6	20	95	0
1,2,3-Trichloropropane	0.504	0.534	-	-6	20	86	0
trans-1,4-Dichloro-2-buten	0.226	0.219	-	3.1	20	83	0
4-Chlorotoluene	2.032	2.312	-	-13.8	20	95	0
tert-Butylbenzene	1.946	2.269	-	-16.6	20	97	0
1,2,4-Trimethylbenzene	2.318	2.654	-	-14.5	20	95	0
sec-Butylbenzene	2.886	3.403	-	-17.9	20	97	0
p-Isopropyltoluene	2.493	2.948	-	-18.3	20	96	0
1,3-Dichlorobenzene	1.268	1.445	-	-14	20	95	0
1,4-Dichlorobenzene	1.294	1.451	-	-12.1	20	94	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Horseley & Witten, Inc.
 Project Name : SOUTH HIGHLAND
 Instrument ID : VOA127
 Lab File ID : V27221101A01
 Sample No : WG1706849-2
 Channel :

Lab Number : L2259129
 Project Number : 22098
 Calibration Date : 11/01/22 06:59
 Init. Calib. Date(s) : 10/21/22 10/21/22
 Init. Calib. Times : 00:12 03:27

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.502	1.774	-	-18.1	20	97	0
n-Butylbenzene	2.209	2.653	-	-20.1*	20	98	0
1,2-Dichlorobenzene	1.206	1.34	-	-11.1	20	93	0
1,2,4,5-Tetramethylbenzene	2.235	2.567	-	-14.9	20	95	0
1,2-Dibromo-3-chloropropan	0.111	0.115	-	-3.6	20	82	0
1,3,5-Trichlorobenzene	0.965	1.126	-	-16.7	20	97	0
Hexachlorobutadiene	0.477	0.555	-	-16.4	20	96	0
1,2,4-Trichlorobenzene	0.871	1.005	-	-15.4	20	95	0
Naphthalene	2.068	2.108	-	-1.9	20	86	0
1,2,3-Trichlorobenzene	0.827	0.888	-	-7.4	20	91	0

* Value outside of QC limits.





New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 2L07047
Client Project: Truro, MA

Report Date: 27-December-2022

Prepared for:

Bryan Massa
Horsley Witten Group, Inc
90 Route 6A
Sandwich, MA 02563

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 12/07/22. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 2L07047. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
2L07047-01	MW-1	Water	12/06/2022	12/07/2022
2L07047-02	MW-2	Water	12/06/2022	12/07/2022
2L07047-03	MW-3	Water	12/06/2022	12/07/2022
2L07047-04	DWW-1	Water	12/06/2022	12/07/2022

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

DWW-1 (Lab Number: 2L07047-04)

Analysis

Herbicides
MADEP VPH
Pesticides
Volatile Organic Compounds

Method

EPA 8151A
MADEP VPH
EPA 8081B
EPA 8260C

MW-1 (Lab Number: 2L07047-01)

Analysis

Volatile Organic Compounds

Method

EPA 8260C

MW-2 (Lab Number: 2L07047-02)

Analysis

Volatile Organic Compounds

Method

EPA 8260C

MW-3 (Lab Number: 2L07047-03)

Analysis

Volatile Organic Compounds

Method

EPA 8260C

Method References

Method for the Determination of Volatile Petroleum Hydrocarbons, Rev. 2.1, Massachusetts Department of Environmental Protection, 2018

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt:

The samples associated with this work order were received in appropriately cooled and preserved containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Exceptions: None

Analysis:

All samples were prepared and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances. Results for all soil samples, unless otherwise indicated, are reported on a dry weight basis.

Exceptions: None

Results: Volatile Organic Compounds

Sample: MW-1
Lab Number: 2L07047-01 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		5	5	ug/l	12/13/22	12/14/22
Benzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Bromobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Bromochloromethane	ND		0.4	1	ug/l	12/13/22	12/14/22
Bromodichloromethane	ND		0.3	1	ug/l	12/13/22	12/14/22
Bromoform	ND		0.3	1	ug/l	12/13/22	12/14/22
Bromomethane	ND		1	1	ug/l	12/13/22	12/14/22
2-Butanone	ND		5	5	ug/l	12/13/22	12/14/22
tert-Butyl alcohol	ND		5	5	ug/l	12/13/22	12/14/22
sec-Butylbenzene	ND		0.1	1	ug/l	12/13/22	12/14/22
n-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
tert-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Methyl t-butyl ether (MTBE)	ND		0.4	1	ug/l	12/13/22	12/14/22
Carbon Disulfide	ND		0.3	1	ug/l	12/13/22	12/14/22
Carbon Tetrachloride	ND		0.4	1	ug/l	12/13/22	12/14/22
Chlorobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Chloroethane	ND		1	1	ug/l	12/13/22	12/14/22
Chloroform	ND		1	1	ug/l	12/13/22	12/14/22
Chloromethane	ND		1	1	ug/l	12/13/22	12/14/22
4-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/14/22
2-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.4	1	ug/l	12/13/22	12/14/22
Dibromochloromethane	ND		0.4	1	ug/l	12/13/22	12/14/22
1,2-Dibromoethane (EDB)	ND		0.4	1	ug/l	12/13/22	12/14/22
Dibromomethane	ND		0.4	1	ug/l	12/13/22	12/14/22
1,2-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,3-Dichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,4-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,1-Dichloroethane	ND		0.1	1	ug/l	12/13/22	12/14/22
1,2-Dichloroethane	ND		0.3	1	ug/l	12/13/22	12/14/22
trans-1,2-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/14/22
cis-1,2-Dichloroethene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,1-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,2-Dichloropropane	ND		0.2	1	ug/l	12/13/22	12/14/22
2,2-Dichloropropane	ND		0.6	1	ug/l	12/13/22	12/14/22
cis-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/14/22
trans-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,1-Dichloropropene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,3-Dichloropropene (cis + trans)	ND		2	2	ug/l	12/13/22	12/14/22
Diethyl ether	ND		0.3	5	ug/l	12/13/22	12/14/22
1,4-Dioxane	ND		100	100	ug/l	12/13/22	12/14/22
Ethylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Hexachlorobutadiene	ND		0.3	1	ug/l	12/13/22	12/14/22
2-Hexanone	ND		5	5	ug/l	12/13/22	12/14/22
Isopropylbenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
p-Isopropyltoluene	ND		0.2	1	ug/l	12/13/22	12/14/22
Methylene Chloride	ND		1	1	ug/l	12/13/22	12/14/22
4-Methyl-2-pentanone	ND		2	5	ug/l	12/13/22	12/14/22

Results: Volatile Organic Compounds (Continued)

Sample: MW-1 (Continued)

Lab Number: 2L07047-01 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Naphthalene	ND		0.4	1	ug/l	12/13/22	12/14/22
n-Propylbenzene	ND		0.1	1	ug/l	12/13/22	12/14/22
Styrene	ND		0.4	1	ug/l	12/13/22	12/14/22
1,1,1,2-Tetrachloroethane	ND		0.3	1	ug/l	12/13/22	12/14/22
Tetrachloroethene	ND		0.2	1	ug/l	12/13/22	12/14/22
Tetrahydrofuran	ND		5	5	ug/l	12/13/22	12/14/22
Toluene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,2,4-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,2,3-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,1,2-Trichloroethane	ND		0.4	1	ug/l	12/13/22	12/14/22
1,1,1-Trichloroethane	ND		0.2	1	ug/l	12/13/22	12/14/22
Trichloroethene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,2,3-Trichloropropane	ND		0.5	1	ug/l	12/13/22	12/14/22
1,3,5-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,2,4-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Vinyl Chloride	ND		1	1	ug/l	12/13/22	12/14/22
o-Xylene	ND		0.2	1	ug/l	12/13/22	12/14/22
m&p-Xylene	ND		0.5	2	ug/l	12/13/22	12/14/22
Total xylenes	ND		0.2	1	ug/l	12/13/22	12/14/22
1,1,2,2-Tetrachloroethane	ND		0.8	1	ug/l	12/13/22	12/14/22
tert-Amyl methyl ether	ND		0.3	1	ug/l	12/13/22	12/14/22
1,3-Dichloropropane	ND		0.3	1	ug/l	12/13/22	12/14/22
Ethyl tert-butyl ether	ND		0.2	1	ug/l	12/13/22	12/14/22
Diisopropyl ether	ND		0.2	1	ug/l	12/13/22	12/14/22
Trichlorofluoromethane	ND		1	1	ug/l	12/13/22	12/14/22
Dichlorodifluoromethane	ND		1	1	ug/l	12/13/22	12/14/22
tert-Amyl Alcohol	ND		5	5	ug/l	12/13/22	12/14/22
Surrogate(s)	Recovery%		Limits				
4-Bromofluorobenzene	99.2%		70-130			12/13/22	12/14/22
1,2-Dichloroethane-d4	103%		70-130			12/13/22	12/14/22
Toluene-d8	98.3%		70-130			12/13/22	12/14/22

Results: Volatile Organic Compounds

Sample: MW-2
Lab Number: 2L07047-02 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		5	5	ug/l	12/13/22	12/14/22
Benzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Bromobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Bromochloromethane	ND		0.4	1	ug/l	12/13/22	12/14/22
Bromodichloromethane	ND		0.3	1	ug/l	12/13/22	12/14/22
Bromoform	ND		0.3	1	ug/l	12/13/22	12/14/22
Bromomethane	ND		1	1	ug/l	12/13/22	12/14/22
2-Butanone	ND		5	5	ug/l	12/13/22	12/14/22
tert-Butyl alcohol	ND		5	5	ug/l	12/13/22	12/14/22
sec-Butylbenzene	ND		0.1	1	ug/l	12/13/22	12/14/22
n-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
tert-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Methyl t-butyl ether (MTBE)	ND		0.4	1	ug/l	12/13/22	12/14/22
Carbon Disulfide	ND		0.3	1	ug/l	12/13/22	12/14/22
Carbon Tetrachloride	ND		0.4	1	ug/l	12/13/22	12/14/22
Chlorobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Chloroethane	ND		1	1	ug/l	12/13/22	12/14/22
Chloroform	ND		1	1	ug/l	12/13/22	12/14/22
Chloromethane	ND		1	1	ug/l	12/13/22	12/14/22
4-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/14/22
2-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.4	1	ug/l	12/13/22	12/14/22
Dibromochloromethane	ND		0.4	1	ug/l	12/13/22	12/14/22
1,2-Dibromoethane (EDB)	ND		0.4	1	ug/l	12/13/22	12/14/22
Dibromomethane	ND		0.4	1	ug/l	12/13/22	12/14/22
1,2-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,3-Dichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,4-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,1-Dichloroethane	ND		0.1	1	ug/l	12/13/22	12/14/22
1,2-Dichloroethane	ND		0.3	1	ug/l	12/13/22	12/14/22
trans-1,2-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/14/22
cis-1,2-Dichloroethene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,1-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,2-Dichloropropane	ND		0.2	1	ug/l	12/13/22	12/14/22
2,2-Dichloropropane	ND		0.6	1	ug/l	12/13/22	12/14/22
cis-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/14/22
trans-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,1-Dichloropropene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,3-Dichloropropene (cis + trans)	ND		2	2	ug/l	12/13/22	12/14/22
Diethyl ether	ND		0.3	5	ug/l	12/13/22	12/14/22
1,4-Dioxane	ND		100	100	ug/l	12/13/22	12/14/22
Ethylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Hexachlorobutadiene	ND		0.3	1	ug/l	12/13/22	12/14/22
2-Hexanone	ND		5	5	ug/l	12/13/22	12/14/22
Isopropylbenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
p-Isopropyltoluene	ND		0.2	1	ug/l	12/13/22	12/14/22
Methylene Chloride	ND		1	1	ug/l	12/13/22	12/14/22
4-Methyl-2-pentanone	ND		2	5	ug/l	12/13/22	12/14/22

Results: Volatile Organic Compounds (Continued)

Sample: MW-2 (Continued)

Lab Number: 2L07047-02 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Naphthalene	ND		0.4	1	ug/l	12/13/22	12/14/22
n-Propylbenzene	ND		0.1	1	ug/l	12/13/22	12/14/22
Styrene	ND		0.4	1	ug/l	12/13/22	12/14/22
1,1,1,2-Tetrachloroethane	ND		0.3	1	ug/l	12/13/22	12/14/22
Tetrachloroethene	ND		0.2	1	ug/l	12/13/22	12/14/22
Tetrahydrofuran	ND		5	5	ug/l	12/13/22	12/14/22
Toluene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,2,4-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,2,3-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,1,2-Trichloroethane	ND		0.4	1	ug/l	12/13/22	12/14/22
1,1,1-Trichloroethane	ND		0.2	1	ug/l	12/13/22	12/14/22
Trichloroethene	ND		0.3	1	ug/l	12/13/22	12/14/22
1,2,3-Trichloropropane	ND		0.5	1	ug/l	12/13/22	12/14/22
1,3,5-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
1,2,4-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/14/22
Vinyl Chloride	ND		1	1	ug/l	12/13/22	12/14/22
o-Xylene	ND		0.2	1	ug/l	12/13/22	12/14/22
m&p-Xylene	ND		0.5	2	ug/l	12/13/22	12/14/22
Total xylenes	ND		0.2	1	ug/l	12/13/22	12/14/22
1,1,2,2-Tetrachloroethane	ND		0.8	1	ug/l	12/13/22	12/14/22
tert-Amyl methyl ether	ND		0.3	1	ug/l	12/13/22	12/14/22
1,3-Dichloropropane	ND		0.3	1	ug/l	12/13/22	12/14/22
Ethyl tert-butyl ether	ND		0.2	1	ug/l	12/13/22	12/14/22
Diisopropyl ether	ND		0.2	1	ug/l	12/13/22	12/14/22
Trichlorofluoromethane	ND		1	1	ug/l	12/13/22	12/14/22
Dichlorodifluoromethane	ND		1	1	ug/l	12/13/22	12/14/22
tert-Amyl Alcohol	ND		5	5	ug/l	12/13/22	12/14/22
Surrogate(s)	Recovery%			Limits			
4-Bromofluorobenzene	97.4%			70-130		12/13/22	12/14/22
1,2-Dichloroethane-d4	99.2%			70-130		12/13/22	12/14/22
Toluene-d8	98.8%			70-130		12/13/22	12/14/22

Results: Volatile Organic Compounds

Sample: MW-3
Lab Number: 2L07047-03 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		60	60	ug/l	12/13/22	12/13/22
Benzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Bromobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Bromochloromethane	ND		0.4	1	ug/l	12/13/22	12/13/22
Bromodichloromethane	ND		0.3	1	ug/l	12/13/22	12/13/22
Bromoform	ND		0.3	1	ug/l	12/13/22	12/13/22
Bromomethane	ND		1	1	ug/l	12/13/22	12/13/22
2-Butanone	ND		5	5	ug/l	12/13/22	12/13/22
tert-Butyl alcohol	ND		5	5	ug/l	12/13/22	12/13/22
sec-Butylbenzene	ND		0.1	1	ug/l	12/13/22	12/13/22
n-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
tert-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Methyl t-butyl ether (MTBE)	ND		0.4	1	ug/l	12/13/22	12/13/22
Carbon Disulfide	ND		0.3	1	ug/l	12/13/22	12/13/22
Carbon Tetrachloride	ND		0.4	1	ug/l	12/13/22	12/13/22
Chlorobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Chloroethane	ND		1	1	ug/l	12/13/22	12/13/22
Chloroform	ND		1	1	ug/l	12/13/22	12/13/22
Chloromethane	ND		1	1	ug/l	12/13/22	12/13/22
4-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/13/22
2-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.4	1	ug/l	12/13/22	12/13/22
Dibromochloromethane	ND		0.4	1	ug/l	12/13/22	12/13/22
1,2-Dibromoethane (EDB)	ND		0.4	1	ug/l	12/13/22	12/13/22
Dibromomethane	ND		0.4	1	ug/l	12/13/22	12/13/22
1,2-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,3-Dichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,4-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,1-Dichloroethane	ND		0.1	1	ug/l	12/13/22	12/13/22
1,2-Dichloroethane	ND		0.3	1	ug/l	12/13/22	12/13/22
trans-1,2-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/13/22
cis-1,2-Dichloroethene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,1-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,2-Dichloropropane	ND		0.2	1	ug/l	12/13/22	12/13/22
2,2-Dichloropropane	ND		0.6	1	ug/l	12/13/22	12/13/22
cis-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/13/22
trans-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,1-Dichloropropene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,3-Dichloropropene (cis + trans)	ND		2	2	ug/l	12/13/22	12/13/22
Diethyl ether	ND		0.3	5	ug/l	12/13/22	12/13/22
1,4-Dioxane	ND		100	100	ug/l	12/13/22	12/13/22
Ethylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Hexachlorobutadiene	ND		0.3	1	ug/l	12/13/22	12/13/22
2-Hexanone	ND		5	5	ug/l	12/13/22	12/13/22
Isopropylbenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
p-Isopropyltoluene	ND		0.2	1	ug/l	12/13/22	12/13/22
Methylene Chloride	ND		2	2	ug/l	12/13/22	12/13/22
4-Methyl-2-pentanone	ND		2	5	ug/l	12/13/22	12/13/22

Results: Volatile Organic Compounds (Continued)

Sample: MW-3 (Continued)

Lab Number: 2L07047-03 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Naphthalene	ND		0.4	1	ug/l	12/13/22	12/13/22
n-Propylbenzene	ND		0.1	1	ug/l	12/13/22	12/13/22
Styrene	ND		0.4	1	ug/l	12/13/22	12/13/22
1,1,1,2-Tetrachloroethane	ND		0.3	1	ug/l	12/13/22	12/13/22
Tetrachloroethene	ND		0.2	1	ug/l	12/13/22	12/13/22
Tetrahydrofuran	ND		5	5	ug/l	12/13/22	12/13/22
Toluene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,2,4-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,2,3-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,1,2-Trichloroethane	ND		0.4	1	ug/l	12/13/22	12/13/22
1,1,1-Trichloroethane	ND		0.2	1	ug/l	12/13/22	12/13/22
Trichloroethene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,2,3-Trichloropropane	ND		0.5	1	ug/l	12/13/22	12/13/22
1,3,5-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,2,4-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Vinyl Chloride	ND		1	1	ug/l	12/13/22	12/13/22
o-Xylene	ND		0.2	1	ug/l	12/13/22	12/13/22
m&p-Xylene	ND		0.5	2	ug/l	12/13/22	12/13/22
Total xylenes	ND		0.2	1	ug/l	12/13/22	12/13/22
1,1,2,2-Tetrachloroethane	ND		0.8	1	ug/l	12/13/22	12/13/22
tert-Amyl methyl ether	ND		0.3	1	ug/l	12/13/22	12/13/22
1,3-Dichloropropane	ND		0.3	1	ug/l	12/13/22	12/13/22
Ethyl tert-butyl ether	ND		0.2	1	ug/l	12/13/22	12/13/22
Diisopropyl ether	ND		0.2	1	ug/l	12/13/22	12/13/22
Trichlorofluoromethane	ND		1	1	ug/l	12/13/22	12/13/22
Dichlorodifluoromethane	ND		1	1	ug/l	12/13/22	12/13/22
tert-Amyl Alcohol	ND		5	5	ug/l	12/13/22	12/13/22
Surrogate(s)	Recovery%			Limits			
4-Bromofluorobenzene	99.0%			70-130		12/13/22	12/13/22
1,2-Dichloroethane-d4	100%			70-130		12/13/22	12/13/22
Toluene-d8	101%			70-130		12/13/22	12/13/22

Results: Volatile Organic Compounds

Sample: DWW-1
Lab Number: 2L07047-04 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		60	60	ug/l	12/13/22	12/13/22
Benzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Bromobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Bromochloromethane	ND		0.4	1	ug/l	12/13/22	12/13/22
Bromodichloromethane	ND		0.3	1	ug/l	12/13/22	12/13/22
Bromoform	ND		0.3	1	ug/l	12/13/22	12/13/22
Bromomethane	ND		1	1	ug/l	12/13/22	12/13/22
2-Butanone	ND		5	5	ug/l	12/13/22	12/13/22
tert-Butyl alcohol	ND		5	5	ug/l	12/13/22	12/13/22
sec-Butylbenzene	ND		0.1	1	ug/l	12/13/22	12/13/22
n-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
tert-Butylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Methyl t-butyl ether (MTBE)	ND		0.4	1	ug/l	12/13/22	12/13/22
Carbon Disulfide	ND		0.3	1	ug/l	12/13/22	12/13/22
Carbon Tetrachloride	ND		0.4	1	ug/l	12/13/22	12/13/22
Chlorobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Chloroethane	ND		1	1	ug/l	12/13/22	12/13/22
Chloroform	ND		1	1	ug/l	12/13/22	12/13/22
Chloromethane	ND		1	1	ug/l	12/13/22	12/13/22
4-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/13/22
2-Chlorotoluene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.4	1	ug/l	12/13/22	12/13/22
Dibromochloromethane	ND		0.4	1	ug/l	12/13/22	12/13/22
1,2-Dibromoethane (EDB)	ND		0.4	1	ug/l	12/13/22	12/13/22
Dibromomethane	ND		0.4	1	ug/l	12/13/22	12/13/22
1,2-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,3-Dichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,4-Dichlorobenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,1-Dichloroethane	ND		0.1	1	ug/l	12/13/22	12/13/22
1,2-Dichloroethane	ND		0.3	1	ug/l	12/13/22	12/13/22
trans-1,2-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/13/22
cis-1,2-Dichloroethene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,1-Dichloroethene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,2-Dichloropropane	ND		0.2	1	ug/l	12/13/22	12/13/22
2,2-Dichloropropane	ND		0.6	1	ug/l	12/13/22	12/13/22
cis-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/13/22
trans-1,3-Dichloropropene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,1-Dichloropropene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,3-Dichloropropene (cis + trans)	ND		2	2	ug/l	12/13/22	12/13/22
Diethyl ether	ND		0.3	5	ug/l	12/13/22	12/13/22
1,4-Dioxane	ND		100	100	ug/l	12/13/22	12/13/22
Ethylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Hexachlorobutadiene	ND		0.3	1	ug/l	12/13/22	12/13/22
2-Hexanone	ND		5	5	ug/l	12/13/22	12/13/22
Isopropylbenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
p-Isopropyltoluene	ND		0.2	1	ug/l	12/13/22	12/13/22
Methylene Chloride	ND		1	1	ug/l	12/13/22	12/13/22
4-Methyl-2-pentanone	ND		2	5	ug/l	12/13/22	12/13/22

Results: Volatile Organic Compounds (Continued)

Sample: DWW-1 (Continued)

Lab Number: 2L07047-04 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Naphthalene	ND		0.4	1	ug/l	12/13/22	12/13/22
n-Propylbenzene	ND		0.1	1	ug/l	12/13/22	12/13/22
Styrene	ND		0.4	1	ug/l	12/13/22	12/13/22
1,1,1,2-Tetrachloroethane	ND		0.3	1	ug/l	12/13/22	12/13/22
Tetrachloroethene	ND		0.2	1	ug/l	12/13/22	12/13/22
Tetrahydrofuran	123		5	5	ug/l	12/13/22	12/13/22
Toluene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,2,4-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,2,3-Trichlorobenzene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,1,2-Trichloroethane	ND		0.4	1	ug/l	12/13/22	12/13/22
1,1,1-Trichloroethane	ND		0.2	1	ug/l	12/13/22	12/13/22
Trichloroethene	ND		0.3	1	ug/l	12/13/22	12/13/22
1,2,3-Trichloropropane	ND		0.5	1	ug/l	12/13/22	12/13/22
1,3,5-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
1,2,4-Trimethylbenzene	ND		0.2	1	ug/l	12/13/22	12/13/22
Vinyl Chloride	ND		1	1	ug/l	12/13/22	12/13/22
o-Xylene	ND		0.2	1	ug/l	12/13/22	12/13/22
m&p-Xylene	ND		0.5	2	ug/l	12/13/22	12/13/22
Total xylenes	ND		0.2	1	ug/l	12/13/22	12/13/22
1,1,2,2-Tetrachloroethane	ND		0.8	1	ug/l	12/13/22	12/13/22
tert-Amyl methyl ether	ND		0.3	1	ug/l	12/13/22	12/13/22
1,3-Dichloropropane	ND		0.3	1	ug/l	12/13/22	12/13/22
Ethyl tert-butyl ether	ND		0.2	1	ug/l	12/13/22	12/13/22
Diisopropyl ether	ND		0.2	1	ug/l	12/13/22	12/13/22
Trichlorofluoromethane	ND		1	1	ug/l	12/13/22	12/13/22
Dichlorodifluoromethane	ND		1	1	ug/l	12/13/22	12/13/22
tert-Amyl Alcohol	ND		5	5	ug/l	12/13/22	12/13/22
Surrogate(s)	Recovery%		Limits				
<i>4-Bromofluorobenzene</i>	<i>101%</i>		<i>70-130</i>			12/13/22	12/13/22
<i>1,2-Dichloroethane-d4</i>	<i>102%</i>		<i>70-130</i>			12/13/22	12/13/22
<i>Toluene-d8</i>	<i>106%</i>		<i>70-130</i>			12/13/22	12/13/22

Volatile Petroleum Hydrocarbons
Sample: DWW-1 (2L07047-04)

SAMPLE INFORMATION

SAMPLE INFORMATION			
Matrix	Water		
Containers	Satisfactory		
Sample Preservation	Aqueous	pH<2	
	Soil or Sediment	NA	
		NA	
		Received in air-tight container	
Temperature	Received on Ice	Received at: 4+/-2 C°	

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID		DWW-1			
Method for Target Analytes: MADEP VPH-18-2.1	Lab ID		2L07047-04			
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected		12/06/22			
	Date Received		12/07/22			
	% Moisture		NA			
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	1X	100	ug/l	<100	12/08/22 10:10
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	1X	100	ug/l	<100	12/08/22 10:10
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	1X	100	ug/l	<100	12/08/22 10:10
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	1X	100	ug/l	<100	12/08/22 10:10
C9-C10 Aromatic Hydrocarbons [1]	NA	1X	100	ug/l	<100	12/08/22 10:10
2,5-Dibromotoluene-PID				%	87.9	12/08/22 10:10
2,5-Dibromotoluene-FID				%	96.0	12/08/22 10:10
Surrogate Acceptance Range				%	70-130	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Results: Pesticides

Sample: DWW-1

Lab Number: 2L07047-04 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
alpha-BHC	ND		0.02	0.02	ug/l	12/09/22	12/13/22
gamma-BHC (Lindane)	ND		0.02	0.02	ug/l	12/09/22	12/13/22
beta-BHC	ND		0.02	0.02	ug/l	12/09/22	12/13/22
delta-BHC	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Heptachlor	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Aldrin	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Heptachlor epoxide	ND		0.02	0.02	ug/l	12/09/22	12/13/22
gamma-Chlordane	ND		0.02	0.02	ug/l	12/09/22	12/13/22
alpha-Chlordane	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Chlordane	ND		0.20	0.20	ug/l	12/09/22	12/13/22
4,4'-DDE	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Endosulfan I	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Dieldrin	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Endrin	ND		0.02	0.02	ug/l	12/09/22	12/13/22
4,4'-DDD	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Endosulfan II	ND		0.02	0.02	ug/l	12/09/22	12/13/22
4,4'-DDT	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Endrin aldehyde	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Methoxychlor	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Endosulfan sulfate	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Endrin Ketone	ND		0.02	0.02	ug/l	12/09/22	12/13/22
Toxaphene	ND		0.50	0.50	ug/l	12/09/22	12/13/22
Surrogate(s)	Recovery%		Limits				
2,4,5,6-Tetrachloro-m-xylene (TCMX)	51.0%		30-103			12/09/22	12/13/22
Decachlorobiphenyl (DCBP)	62.8%		30-119			12/09/22	12/13/22

Results: Herbicides

Sample: DWW-1
Lab Number: 2L07047-04 (Water)

Analyte	Result	Qual	Detection Limit	Reporting Limit	Units	Date Prepared	Date Analyzed
Dalapon	ND		1.0	1.0	ug/l	12/08/22	12/09/22
Dicamba	ND		1.0	1.0	ug/l	12/08/22	12/09/22
Dichloroprop	ND		1.0	1.0	ug/l	12/08/22	12/09/22
2,4-D	ND		1.0	1.0	ug/l	12/08/22	12/09/22
2,4,5-TP (Silvex)	ND		1.0	1.0	ug/l	12/08/22	12/09/22
2,4,5-T	ND		1.0	1.0	ug/l	12/08/22	12/09/22
2,4-DB	ND		1.0	1.0	ug/l	12/08/22	12/09/22
Dinoseb	ND		1.0	1.0	ug/l	12/08/22	12/09/22
MCPP	ND		1.0	1.0	ug/l	12/08/22	12/09/22
MCPA	ND		1.0	1.0	ug/l	12/08/22	12/09/22
Surrogate(s)	Recovery%			Limits			
2,4-Dichlorophenyl acetic acid	95.0%			30-150		12/08/22	12/09/22

Quality Control

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0617 - Purge-Trap										
Blank (B2L0617-BLK1)					Prepared & Analyzed: 12/13/22					
Acetone	ND		60	ug/l						
Benzene	ND		1	ug/l						
Bromobenzene	ND		1	ug/l						
Bromochloromethane	ND		1	ug/l						
Bromodichloromethane	ND		1	ug/l						
Bromoform	ND		1	ug/l						
Bromomethane	ND		1	ug/l						
2-Butanone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
sec-Butylbenzene	ND		1	ug/l						
n-Butylbenzene	ND		1	ug/l						
tert-Butylbenzene	ND		1	ug/l						
Methyl t-butyl ether (MTBE)	ND		1	ug/l						
Carbon Disulfide	ND		1	ug/l						
Carbon Tetrachloride	ND		1	ug/l						
Chlorobenzene	ND		1	ug/l						
Chloroethane	ND		1	ug/l						
Chloroform	ND		1	ug/l						
Chloromethane	ND		1	ug/l						
4-Chlorotoluene	ND		1	ug/l						
2-Chlorotoluene	ND		1	ug/l						
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/l						
Dibromochloromethane	ND		1	ug/l						
1,2-Dibromoethane (EDB)	ND		1	ug/l						
Dibromomethane	ND		1	ug/l						
1,2-Dichlorobenzene	ND		1	ug/l						
1,3-Dichlorobenzene	ND		1	ug/l						
1,4-Dichlorobenzene	ND		1	ug/l						
1,1-Dichloroethane	ND		1	ug/l						
1,2-Dichloroethane	ND		1	ug/l						
trans-1,2-Dichloroethene	ND		1	ug/l						
cis-1,2-Dichloroethene	ND		1	ug/l						
1,1-Dichloroethene	ND		1	ug/l						
1,2-Dichloropropane	ND		1	ug/l						
2,2-Dichloropropane	ND		1	ug/l						
cis-1,3-Dichloropropene	ND		1	ug/l						
trans-1,3-Dichloropropene	ND		1	ug/l						
1,1-Dichloropropene	ND		1	ug/l						
1,3-Dichloropropene (cis + trans)	ND		2	ug/l						
Diethyl ether	ND		5	ug/l						
1,4-Dioxane	ND		100	ug/l						
Ethylbenzene	ND		1	ug/l						
Hexachlorobutadiene	ND		1	ug/l						
2-Hexanone	ND		5	ug/l						
Isopropylbenzene	ND		1	ug/l						
p-Isopropyltoluene	ND		1	ug/l						
Methylene Chloride	ND		2	ug/l						
4-Methyl-2-pentanone	ND		5	ug/l						
Naphthalene	ND		1	ug/l						
n-Propylbenzene	ND		1	ug/l						
Styrene	ND		1	ug/l						
1,1,1,2-Tetrachloroethane	ND		1	ug/l						
Tetrachloroethene	ND		1	ug/l						
Tetrahydrofuran	ND		5	ug/l						

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0617 - Purge-Trap (Continued)										
Blank (B2L0617-BLK1)					Prepared & Analyzed: 12/13/22					
Toluene	ND		1	ug/l						
1,2,4-Trichlorobenzene	ND		1	ug/l						
1,2,3-Trichlorobenzene	ND		1	ug/l						
1,1,2-Trichloroethane	ND		1	ug/l						
1,1,1-Trichloroethane	ND		1	ug/l						
Trichloroethene	ND		1	ug/l						
1,2,3-Trichloropropane	ND		1	ug/l						
1,3,5-Trimethylbenzene	ND		1	ug/l						
1,2,4-Trimethylbenzene	ND		1	ug/l						
Vinyl Chloride	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
Total xylenes	ND		1	ug/l						
1,1,2,2-Tetrachloroethane	ND		1	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
1,3-Dichloropropane	ND		1	ug/l						
Ethyl tert-butyl ether	ND		1	ug/l						
Diisopropyl ether	ND		1	ug/l						
Trichlorofluoromethane	ND		1	ug/l						
Dichlorodifluoromethane	ND		1	ug/l						
tert-Amyl Alcohol	ND		5	ug/l						
Surrogate: 4-Bromofluorobenzene			49.6	ug/l	50.0		99.2	70-130		
Surrogate: 1,2-Dichloroethane-d4			48.8	ug/l	50.0		97.6	70-130		
Surrogate: Toluene-d8			50.9	ug/l	50.0		102	70-130		
LCS (B2L0617-BS1)					Prepared & Analyzed: 12/13/22					
Acetone	115			ug/l	50.0		229	60-140		
Benzene	48			ug/l	50.0		96.9	70-130		
Bromobenzene	47			ug/l	50.0		93.8	70-130		
Bromochloromethane	46			ug/l	50.0		91.9	70-130		
Bromodichloromethane	41			ug/l	50.0		82.3	70-130		
Bromoform	25			ug/l	50.0		50.8	70-130		
Bromomethane	29			ug/l	50.0		57.3	70-130		
2-Butanone	64			ug/l	50.0		128	60-140		
tert-Butyl alcohol	57			ug/l	50.0		114	70-130		
sec-Butylbenzene	46			ug/l	50.0		92.2	70-130		
n-Butylbenzene	48			ug/l	50.0		95.5	70-130		
tert-Butylbenzene	46			ug/l	50.0		91.6	70-130		
Methyl t-butyl ether (MTBE)	58			ug/l	50.0		115	70-130		
Carbon Disulfide	58			ug/l	50.0		117	50-150		
Carbon Tetrachloride	22			ug/l	50.0		44.7	70-130		
Chlorobenzene	47			ug/l	50.0		94.9	70-130		
Chloroethane	47			ug/l	50.0		93.4	70-130		
Chloroform	49			ug/l	50.0		97.9	70-130		
Chloromethane	68			ug/l	50.0		135	70-130		
4-Chlorotoluene	46			ug/l	50.0		91.8	70-130		
2-Chlorotoluene	45			ug/l	50.0		89.0	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	43			ug/l	50.0		86.4	70-130		
Dibromochloromethane	38			ug/l	50.0		75.6	70-130		
1,2-Dibromoethane (EDB)	50			ug/l	50.0		100	70-130		
Dibromomethane	50			ug/l	50.0		101	70-130		
1,2-Dichlorobenzene	45			ug/l	50.0		90.8	70-130		
1,3-Dichlorobenzene	49			ug/l	50.0		97.9	70-130		
1,4-Dichlorobenzene	44			ug/l	50.0		88.6	70-130		
1,1-Dichloroethane	47			ug/l	50.0		94.3	70-130		
1,2-Dichloroethane	48			ug/l	50.0		96.8	70-130		
trans-1,2-Dichloroethene	47			ug/l	50.0		94.2	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0617 - Purge-Trap (Continued)										
LCS (B2L0617-BS1)					Prepared & Analyzed: 12/13/22					
cis-1,2-Dichloroethene	48			ug/l	50.0		95.3	70-130		
1,1-Dichloroethene	52			ug/l	50.0		104	70-130		
1,2-Dichloropropane	49			ug/l	50.0		97.3	70-130		
2,2-Dichloropropane	54			ug/l	50.0		107	70-130		
cis-1,3-Dichloropropene	51			ug/l	50.0		101	70-130		
trans-1,3-Dichloropropene	51			ug/l	50.0		102	70-130		
1,1-Dichloropropene	49			ug/l	50.0		98.6	70-130		
Diethyl ether	57			ug/l	50.0		113	70-130		
1,4-Dioxane	374			ug/l	250		149	50-150		
Ethylbenzene	46			ug/l	50.0		92.6	70-130		
Hexachlorobutadiene	49			ug/l	50.0		97.2	70-130		
2-Hexanone	70			ug/l	50.0		139	70-130		
Isopropylbenzene	46			ug/l	50.0		92.4	70-130		
p-Isopropyltoluene	46			ug/l	50.0		92.1	70-130		
Methylene Chloride	48			ug/l	50.0		97.0	70-130		
4-Methyl-2-pentanone	57			ug/l	50.0		114	70-130		
Naphthalene	57			ug/l	50.0		113	70-130		
n-Propylbenzene	45			ug/l	50.0		89.8	70-130		
Styrene	48			ug/l	50.0		95.7	70-130		
1,1,1,2-Tetrachloroethane	41			ug/l	50.0		82.9	70-130		
Tetrachloroethene	51			ug/l	50.0		102	70-130		
Tetrahydrofuran	57			ug/l	50.0		114	50-150		
Toluene	50			ug/l	50.0		101	70-130		
1,2,4-Trichlorobenzene	50			ug/l	50.0		100	70-130		
1,2,3-Trichlorobenzene	45			ug/l	50.0		89.8	70-130		
1,1,2-Trichloroethane	49			ug/l	50.0		98.1	70-130		
1,1,1-Trichloroethane	47			ug/l	50.0		94.3	70-130		
Trichloroethene	45			ug/l	50.0		90.0	70-130		
1,2,3-Trichloropropane	48			ug/l	50.0		95.3	70-130		
1,3,5-Trimethylbenzene	46			ug/l	50.0		92.6	70-130		
1,2,4-Trimethylbenzene	46			ug/l	50.0		92.1	70-130		
Vinyl Chloride	51			ug/l	50.0		101	70-130		
o-Xylene	46			ug/l	50.0		92.5	70-130		
m&p-Xylene	92			ug/l	100		91.8	70-130		
1,1,2,2-Tetrachloroethane	48			ug/l	50.0		96.2	70-130		
tert-Amyl methyl ether	58			ug/l	50.0		115	70-130		
1,3-Dichloropropane	52			ug/l	50.0		105	70-130		
Ethyl tert-butyl ether	59			ug/l	50.0		118	70-130		
Trichlorofluoromethane	40			ug/l	50.0		80.0	70-130		
Dichlorodifluoromethane	77			ug/l	50.0		153	70-130		
Surrogate: 4-Bromofluorobenzene			50.1	ug/l	50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4			47.4	ug/l	50.0		94.8	70-130		
Surrogate: Toluene-d8			50.8	ug/l	50.0		102	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0617 - Purge-Trap (Continued)										
LCS Dup (B2L0617-BSD1)					Prepared & Analyzed: 12/13/22					
Acetone	114			ug/l	50.0		227	60-140	0.911	20
Benzene	50			ug/l	50.0		100	70-130	3.21	20
Bromobenzene	48			ug/l	50.0		96.7	70-130	3.02	20
Bromochloromethane	50			ug/l	50.0		99.8	70-130	8.27	20
Bromodichloromethane	43			ug/l	50.0		85.1	70-130	3.37	20
Bromoform	27			ug/l	50.0		54.3	70-130	6.55	20
Bromomethane	28			ug/l	50.0		56.9	70-130	0.700	20
2-Butanone	59			ug/l	50.0		118	60-140	8.13	20
tert-Butyl alcohol	58			ug/l	50.0		116	70-130	1.97	20
sec-Butylbenzene	48			ug/l	50.0		95.5	70-130	3.58	20
n-Butylbenzene	50			ug/l	50.0		99.8	70-130	4.40	20
tert-Butylbenzene	47			ug/l	50.0		94.3	70-130	2.93	20
Methyl t-butyl ether (MTBE)	59			ug/l	50.0		118	70-130	2.69	20
Carbon Disulfide	58			ug/l	50.0		116	50-150	0.826	20
Carbon Tetrachloride	24			ug/l	50.0		47.9	70-130	6.74	20
Chlorobenzene	49			ug/l	50.0		97.9	70-130	3.03	20
Chloroethane	48			ug/l	50.0		95.7	70-130	2.39	20
Chloroform	49			ug/l	50.0		98.9	70-130	0.955	20
Chloromethane	69			ug/l	50.0		138	70-130	2.12	20
4-Chlorotoluene	47			ug/l	50.0		93.3	70-130	1.64	20
2-Chlorotoluene	46			ug/l	50.0		92.1	70-130	3.42	20
1,2-Dibromo-3-chloropropane (DBCP)	46			ug/l	50.0		92.4	70-130	6.69	20
Dibromochloromethane	38			ug/l	50.0		75.4	70-130	0.265	20
1,2-Dibromoethane (EDB)	51			ug/l	50.0		101	70-130	0.892	20
Dibromomethane	52			ug/l	50.0		105	70-130	4.21	20
1,2-Dichlorobenzene	47			ug/l	50.0		94.4	70-130	3.80	20
1,3-Dichlorobenzene	50			ug/l	50.0		101	70-130	2.82	20
1,4-Dichlorobenzene	46			ug/l	50.0		91.7	70-130	3.42	20
1,1-Dichloroethane	50			ug/l	50.0		99.3	70-130	5.15	20
1,2-Dichloroethane	49			ug/l	50.0		97.4	70-130	0.639	20
trans-1,2-Dichloroethene	49			ug/l	50.0		97.4	70-130	3.42	20
cis-1,2-Dichloroethene	49			ug/l	50.0		98.4	70-130	3.16	20
1,1-Dichloroethene	53			ug/l	50.0		105	70-130	1.05	20
1,2-Dichloropropane	50			ug/l	50.0		99.4	70-130	2.05	20
2,2-Dichloropropane	54			ug/l	50.0		108	70-130	0.891	20
cis-1,3-Dichloropropene	49			ug/l	50.0		98.1	70-130	3.41	20
trans-1,3-Dichloropropene	52			ug/l	50.0		104	70-130	1.26	20
1,1-Dichloropropene	52			ug/l	50.0		104	70-130	4.89	20
Diethyl ether	57			ug/l	50.0		114	70-130	0.423	20
1,4-Dioxane	339			ug/l	250		136	50-150	9.65	20
Ethylbenzene	48			ug/l	50.0		95.2	70-130	2.68	20
Hexachlorobutadiene	49			ug/l	50.0		97.7	70-130	0.472	20
2-Hexanone	69			ug/l	50.0		138	70-130	0.534	20
Isopropylbenzene	47			ug/l	50.0		94.3	70-130	2.01	20
p-Isopropyltoluene	48			ug/l	50.0		96.6	70-130	4.68	20
Methylene Chloride	50			ug/l	50.0		99.6	70-130	2.69	20
4-Methyl-2-pentanone	60			ug/l	50.0		120	70-130	4.75	20
Naphthalene	59			ug/l	50.0		118	70-130	4.31	20
n-Propylbenzene	47			ug/l	50.0		93.6	70-130	4.10	20
Styrene	49			ug/l	50.0		97.4	70-130	1.78	20
1,1,1,2-Tetrachloroethane	43			ug/l	50.0		85.8	70-130	3.34	20
Tetrachloroethene	50			ug/l	50.0		100	70-130	1.76	20
Tetrahydrofuran	62			ug/l	50.0		125	50-150	9.22	20
Toluene	50			ug/l	50.0		99.5	70-130	1.14	20
1,2,4-Trichlorobenzene	53			ug/l	50.0		106	70-130	5.47	20
1,2,3-Trichlorobenzene	47			ug/l	50.0		94.4	70-130	4.95	20
1,1,2-Trichloroethane	49			ug/l	50.0		98.6	70-130	8.588	20

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0617 - Purge-Trap (Continued)										
LCS Dup (B2L0617-BSD1)					Prepared & Analyzed: 12/13/22					
1,1,1-Trichloroethane	49			ug/l	50.0		97.3	70-130	3.15	20
Trichloroethene	47			ug/l	50.0		93.6	70-130	3.97	20
1,2,3-Trichloropropane	49			ug/l	50.0		98.4	70-130	3.22	20
1,3,5-Trimethylbenzene	48			ug/l	50.0		95.4	70-130	3.04	20
1,2,4-Trimethylbenzene	48			ug/l	50.0		96.0	70-130	4.14	20
Vinyl Chloride	50			ug/l	50.0		101	70-130	0.553	20
o-Xylene	47			ug/l	50.0		93.6	70-130	1.18	20
m&p-Xylene	95			ug/l	100		94.7	70-130	3.15	20
1,1,2,2-Tetrachloroethane	48			ug/l	50.0		96.6	70-130	0.498	20
tert-Amyl methyl ether	57			ug/l	50.0		113	70-130	1.52	20
1,3-Dichloropropane	51			ug/l	50.0		102	70-130	2.48	20
Ethyl tert-butyl ether	55			ug/l	50.0		111	70-130	6.57	20
Trichlorofluoromethane	39			ug/l	50.0		77.1	70-130	3.79	20
Dichlorodifluoromethane	77			ug/l	50.0		154	70-130	0.611	20
Surrogate: 4-Bromofluorobenzene			51.5	ug/l	50.0		103	70-130		
Surrogate: 1,2-Dichloroethane-d4			49.8	ug/l	50.0		99.7	70-130		
Surrogate: Toluene-d8			52.0	ug/l	50.0		104	70-130		

Batch: B2L0618 - Purge-Trap

Blank (B2L0618-BLK1)

Prepared: 12/13/22 Analyzed: 12/14/22

Acetone	ND	5	ug/l
Benzene	ND	1	ug/l
Bromobenzene	ND	1	ug/l
Bromochloromethane	ND	1	ug/l
Bromodichloromethane	ND	1	ug/l
Bromoform	ND	1	ug/l
Bromomethane	ND	1	ug/l
2-Butanone	ND	5	ug/l
tert-Butyl alcohol	ND	5	ug/l
sec-Butylbenzene	ND	1	ug/l
n-Butylbenzene	ND	1	ug/l
tert-Butylbenzene	ND	1	ug/l
Methyl t-butyl ether (MTBE)	ND	1	ug/l
Carbon Disulfide	ND	1	ug/l
Carbon Tetrachloride	ND	1	ug/l
Chlorobenzene	ND	1	ug/l
Chloroethane	ND	1	ug/l
Chloroform	ND	1	ug/l
Chloromethane	ND	1	ug/l
4-Chlorotoluene	ND	1	ug/l
2-Chlorotoluene	ND	1	ug/l
1,2-Dibromo-3-chloropropane (DBCP)	ND	1	ug/l
Dibromochloromethane	ND	1	ug/l
1,2-Dibromoethane (EDB)	ND	1	ug/l
Dibromomethane	ND	1	ug/l
1,2-Dichlorobenzene	ND	1	ug/l
1,3-Dichlorobenzene	ND	1	ug/l
1,4-Dichlorobenzene	ND	1	ug/l
1,1-Dichloroethane	ND	1	ug/l
1,2-Dichloroethane	ND	1	ug/l
trans-1,2-Dichloroethene	ND	1	ug/l
cis-1,2-Dichloroethene	ND	1	ug/l
1,1-Dichloroethene	ND	1	ug/l
1,2-Dichloropropane	ND	1	ug/l
2,2-Dichloropropane	ND	1	ug/l
cis-1,3-Dichloropropene	ND	1	ug/l
trans-1,3-Dichloropropene	ND	1	ug/l

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0618 - Purge-Trap (Continued)										
Blank (B2L0618-BLK1)				Prepared: 12/13/22 Analyzed: 12/14/22						
1,1-Dichloropropene	ND		1	ug/l						
1,3-Dichloropropene (cis + trans)	ND		2	ug/l						
Diethyl ether	ND		5	ug/l						
1,4-Dioxane	ND		100	ug/l						
Ethylbenzene	ND		1	ug/l						
Hexachlorobutadiene	ND		1	ug/l						
2-Hexanone	ND		5	ug/l						
Isopropylbenzene	ND		1	ug/l						
p-Isopropyltoluene	ND		1	ug/l						
Methylene Chloride	ND		1	ug/l						
4-Methyl-2-pentanone	ND		5	ug/l						
Naphthalene	ND		1	ug/l						
n-Propylbenzene	ND		1	ug/l						
Styrene	ND		1	ug/l						
1,1,1,2-Tetrachloroethane	ND		1	ug/l						
Tetrachloroethene	ND		1	ug/l						
Tetrahydrofuran	ND		5	ug/l						
Toluene	ND		1	ug/l						
1,2,4-Trichlorobenzene	ND		1	ug/l						
1,2,3-Trichlorobenzene	ND		1	ug/l						
1,1,2-Trichloroethane	ND		1	ug/l						
1,1,1-Trichloroethane	ND		1	ug/l						
Trichloroethene	ND		1	ug/l						
1,2,3-Trichloropropane	ND		1	ug/l						
1,3,5-Trimethylbenzene	ND		1	ug/l						
1,2,4-Trimethylbenzene	ND		1	ug/l						
Vinyl Chloride	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
Total xylenes	ND		1	ug/l						
1,1,2,2-Tetrachloroethane	ND		1	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
1,3-Dichloropropane	ND		1	ug/l						
Ethyl tert-butyl ether	ND		1	ug/l						
Diisopropyl ether	ND		1	ug/l						
Trichlorofluoromethane	ND		1	ug/l						
Dichlorodifluoromethane	ND		1	ug/l						
tert-Amyl Alcohol	ND		5	ug/l						
Surrogate: 4-Bromofluorobenzene			48.9	ug/l	50.0		97.8	70-130		
Surrogate: 1,2-Dichloroethane-d4			49.4	ug/l	50.0		98.7	70-130		
Surrogate: Toluene-d8			48.6	ug/l	50.0		97.1	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0618 - Purge-Trap (Continued)										
LCS (B2L0618-BS1)					Prepared & Analyzed: 12/13/22					
Acetone	56			ug/l	50.0		113	60-140		
Benzene	48			ug/l	50.0		95.4	70-130		
Bromobenzene	47			ug/l	50.0		94.6	70-130		
Bromochloromethane	49			ug/l	50.0		97.8	70-130		
Bromodichloromethane	49			ug/l	50.0		97.1	70-130		
Bromoform	46			ug/l	50.0		91.7	70-130		
Bromomethane	50			ug/l	50.0		101	70-130		
2-Butanone	52			ug/l	50.0		105	60-140		
tert-Butyl alcohol	37			ug/l	50.0		74.7	70-130		
sec-Butylbenzene	48			ug/l	50.0		96.3	70-130		
n-Butylbenzene	49			ug/l	50.0		97.9	70-130		
tert-Butylbenzene	48			ug/l	50.0		96.2	70-130		
Methyl t-butyl ether (MTBE)	53			ug/l	50.0		106	70-130		
Carbon Disulfide	52			ug/l	50.0		104	50-150		
Carbon Tetrachloride	49			ug/l	50.0		98.4	70-130		
Chlorobenzene	47			ug/l	50.0		94.8	70-130		
Chloroethane	51			ug/l	50.0		102	70-130		
Chloroform	48			ug/l	50.0		95.4	70-130		
Chloromethane	55			ug/l	50.0		109	70-130		
4-Chlorotoluene	48			ug/l	50.0		95.4	70-130		
2-Chlorotoluene	46			ug/l	50.0		92.0	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	44			ug/l	50.0		87.1	70-130		
Dibromochloromethane	48			ug/l	50.0		96.6	70-130		
1,2-Dibromoethane (EDB)	47			ug/l	50.0		94.3	70-130		
Dibromomethane	50			ug/l	50.0		99.4	70-130		
1,2-Dichlorobenzene	47			ug/l	50.0		93.8	70-130		
1,3-Dichlorobenzene	46			ug/l	50.0		92.5	70-130		
1,4-Dichlorobenzene	45			ug/l	50.0		90.8	70-130		
1,1-Dichloroethane	48			ug/l	50.0		96.2	70-130		
1,2-Dichloroethane	46			ug/l	50.0		91.2	70-130		
trans-1,2-Dichloroethene	47			ug/l	50.0		93.8	70-130		
cis-1,2-Dichloroethene	47			ug/l	50.0		93.5	70-130		
1,1-Dichloroethene	50			ug/l	50.0		101	70-130		
1,2-Dichloropropane	48			ug/l	50.0		95.5	70-130		
2,2-Dichloropropane	40			ug/l	50.0		80.5	70-130		
cis-1,3-Dichloropropene	48			ug/l	50.0		96.5	70-130		
trans-1,3-Dichloropropene	47			ug/l	50.0		94.3	70-130		
1,1-Dichloropropene	50			ug/l	50.0		99.3	70-130		
Diethyl ether	56			ug/l	50.0		112	70-130		
1,4-Dioxane	243			ug/l	250		97.4	50-150		
Ethylbenzene	48			ug/l	50.0		96.1	70-130		
Hexachlorobutadiene	42			ug/l	50.0		84.0	70-130		
2-Hexanone	54			ug/l	50.0		107	70-130		
Isopropylbenzene	48			ug/l	50.0		96.6	70-130		
p-Isopropyltoluene	48			ug/l	50.0		95.7	70-130		
Methylene Chloride	48			ug/l	50.0		96.3	70-130		
4-Methyl-2-pentanone	49			ug/l	50.0		98.0	70-130		
Naphthalene	43			ug/l	50.0		85.6	70-130		
n-Propylbenzene	49			ug/l	50.0		97.9	70-130		
Styrene	49			ug/l	50.0		97.9	70-130		
1,1,1,2-Tetrachloroethane	49			ug/l	50.0		98.0	70-130		
Tetrachloroethene	49			ug/l	50.0		97.1	70-130		
Tetrahydrofuran	46			ug/l	50.0		92.9	50-150		
Toluene	48			ug/l	50.0		95.3	70-130		
1,2,4-Trichlorobenzene	43			ug/l	50.0		86.1	70-130		
1,2,3-Trichlorobenzene	40			ug/l	50.0		80.1	70-130		
1,1,2-Trichloroethane	48			ug/l	50.0		95.8	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0618 - Purge-Trap (Continued)										
LCS (B2L0618-BS1)					Prepared & Analyzed: 12/13/22					
1,1,1-Trichloroethane	49			ug/l	50.0		98.9	70-130		
Trichloroethene	54			ug/l	50.0		108	70-130		
1,2,3-Trichloropropane	49			ug/l	50.0		98.4	70-130		
1,3,5-Trimethylbenzene	48			ug/l	50.0		96.6	70-130		
1,2,4-Trimethylbenzene	48			ug/l	50.0		95.9	70-130		
Vinyl Chloride	54			ug/l	50.0		108	70-130		
o-Xylene	49			ug/l	50.0		97.2	70-130		
m&p-Xylene	97			ug/l	100		96.7	70-130		
1,1,2,2-Tetrachloroethane	39			ug/l	50.0		78.4	70-130		
tert-Amyl methyl ether	51			ug/l	50.0		102	70-130		
1,3-Dichloropropane	50			ug/l	50.0		99.4	70-130		
Ethyl tert-butyl ether	52			ug/l	50.0		103	70-130		
Trichlorofluoromethane	48			ug/l	50.0		96.9	70-130		
Dichlorodifluoromethane	77			ug/l	50.0		154	70-130		
Surrogate: 4-Bromofluorobenzene			49.4	ug/l	50.0		98.9	70-130		
Surrogate: 1,2-Dichloroethane-d4			48.4	ug/l	50.0		96.7	70-130		
Surrogate: Toluene-d8			50.0	ug/l	50.0		99.9	70-130		
LCS Dup (B2L0618-BSD1)					Prepared & Analyzed: 12/13/22					
Acetone	51			ug/l	50.0		101	60-140	10.5	20
Benzene	46			ug/l	50.0		92.3	70-130	3.33	20
Bromobenzene	46			ug/l	50.0		92.0	70-130	2.79	20
Bromochloromethane	48			ug/l	50.0		96.2	70-130	1.63	20
Bromodichloromethane	48			ug/l	50.0		95.0	70-130	2.17	20
Bromoform	44			ug/l	50.0		89.0	70-130	2.97	20
Bromomethane	52			ug/l	50.0		105	70-130	4.07	20
2-Butanone	47			ug/l	50.0		94.4	60-140	10.6	20
tert-Butyl alcohol	28			ug/l	50.0		56.9	70-130	27.1	20
sec-Butylbenzene	47			ug/l	50.0		93.3	70-130	3.12	20
n-Butylbenzene	47			ug/l	50.0		95.0	70-130	3.01	20
tert-Butylbenzene	46			ug/l	50.0		92.0	70-130	4.46	20
Methyl t-butyl ether (MTBE)	50			ug/l	50.0		101	70-130	5.32	20
Carbon Disulfide	50			ug/l	50.0		99.1	50-150	4.52	20
Carbon Tetrachloride	48			ug/l	50.0		95.6	70-130	2.89	20
Chlorobenzene	46			ug/l	50.0		91.9	70-130	3.19	20
Chloroethane	50			ug/l	50.0		99.6	70-130	2.03	20
Chloroform	45			ug/l	50.0		90.7	70-130	5.03	20
Chloromethane	52			ug/l	50.0		104	70-130	4.47	20
4-Chlorotoluene	46			ug/l	50.0		91.8	70-130	3.83	20
2-Chlorotoluene	44			ug/l	50.0		88.4	70-130	4.01	20
1,2-Dibromo-3-chloropropane (DBCP)	40			ug/l	50.0		79.5	70-130	9.15	20
Dibromochloromethane	48			ug/l	50.0		95.4	70-130	1.19	20
1,2-Dibromoethane (EDB)	45			ug/l	50.0		90.4	70-130	4.22	20
Dibromomethane	49			ug/l	50.0		97.5	70-130	1.93	20
1,2-Dichlorobenzene	46			ug/l	50.0		92.5	70-130	1.40	20
1,3-Dichlorobenzene	45			ug/l	50.0		90.8	70-130	1.86	20
1,4-Dichlorobenzene	45			ug/l	50.0		89.0	70-130	1.94	20
1,1-Dichloroethane	47			ug/l	50.0		93.1	70-130	3.32	20
1,2-Dichloroethane	46			ug/l	50.0		91.2	70-130	0.0219	20
trans-1,2-Dichloroethene	45			ug/l	50.0		90.7	70-130	3.38	20
cis-1,2-Dichloroethene	46			ug/l	50.0		92.1	70-130	1.55	20
1,1-Dichloroethene	47			ug/l	50.0		93.9	70-130	7.20	20
1,2-Dichloropropane	46			ug/l	50.0		92.2	70-130	3.54	20
2,2-Dichloropropane	40			ug/l	50.0		79.7	70-130	0.974	20
cis-1,3-Dichloropropene	46			ug/l	50.0		91.0	70-130	5.85	20
trans-1,3-Dichloropropene	46			ug/l	50.0		92.0	70-130	2.40	20
1,1-Dichloropropene	47			ug/l	50.0		93.5	70-130	5.98	20

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0618 - Purge-Trap (Continued)										
LCS Dup (B2L0618-BSD1)					Prepared & Analyzed: 12/13/22					
Diethyl ether	55			ug/l	50.0		110	70-130	1.37	20
1,4-Dioxane	220			ug/l	250		88.0	50-150	10.1	20
Ethylbenzene	46			ug/l	50.0		92.5	70-130	3.78	20
Hexachlorobutadiene	42			ug/l	50.0		83.2	70-130	0.885	20
2-Hexanone	48			ug/l	50.0		95.7	70-130	11.6	20
Isopropylbenzene	47			ug/l	50.0		93.4	70-130	3.33	20
p-Isopropyltoluene	46			ug/l	50.0		92.0	70-130	3.92	20
Methylene Chloride	48			ug/l	50.0		95.2	70-130	1.17	20
4-Methyl-2-pentanone	46			ug/l	50.0		91.2	70-130	7.12	20
Naphthalene	39			ug/l	50.0		78.0	70-130	9.31	20
n-Propylbenzene	47			ug/l	50.0		93.8	70-130	4.19	20
Styrene	47			ug/l	50.0		94.4	70-130	3.62	20
1,1,1,2-Tetrachloroethane	47			ug/l	50.0		93.3	70-130	4.91	20
Tetrachloroethene	46			ug/l	50.0		92.9	70-130	4.36	20
Tetrahydrofuran	41			ug/l	50.0		82.0	50-150	12.4	20
Toluene	45			ug/l	50.0		90.9	70-130	4.73	20
1,2,4-Trichlorobenzene	42			ug/l	50.0		84.2	70-130	2.23	20
1,2,3-Trichlorobenzene	39			ug/l	50.0		78.8	70-130	1.59	20
1,1,2-Trichloroethane	47			ug/l	50.0		94.5	70-130	1.30	20
1,1,1-Trichloroethane	49			ug/l	50.0		97.9	70-130	1.06	20
Trichloroethene	53			ug/l	50.0		105	70-130	3.16	20
1,2,3-Trichloropropane	43			ug/l	50.0		86.8	70-130	12.6	20
1,3,5-Trimethylbenzene	47			ug/l	50.0		93.2	70-130	3.50	20
1,2,4-Trimethylbenzene	46			ug/l	50.0		92.1	70-130	3.96	20
Vinyl Chloride	51			ug/l	50.0		101	70-130	6.26	20
o-Xylene	47			ug/l	50.0		93.6	70-130	3.81	20
m&p-Xylene	94			ug/l	100		93.6	70-130	3.28	20
1,1,2,2-Tetrachloroethane	38			ug/l	50.0		75.1	70-130	4.25	20
tert-Amyl methyl ether	50			ug/l	50.0		99.7	70-130	2.53	20
1,3-Dichloropropane	48			ug/l	50.0		95.3	70-130	4.21	20
Ethyl tert-butyl ether	51			ug/l	50.0		101	70-130	1.82	20
Trichlorofluoromethane	46			ug/l	50.0		91.9	70-130	5.32	20
Dichlorodifluoromethane	72			ug/l	50.0		144	70-130	6.71	20
Surrogate: 4-Bromofluorobenzene			49.8	ug/l	50.0		99.6	70-130		
Surrogate: 1,2-Dichloroethane-d4			50.8	ug/l	50.0		102	70-130		
Surrogate: Toluene-d8			49.0	ug/l	50.0		98.1	70-130		

Quality Control
(Continued)

Volatile Petroleum Hydrocarbons (MADEP-VPH)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0324 - MADEP VPH										
Blank (B2L0324-BLK1)					Prepared & Analyzed: 12/08/22					
Unadjusted C5-C8 Aliphatic Hydrocarbons	ND		100	ug/l						
Unadjusted C9-C12 Aliphatic Hydrocarbons	ND		100	ug/l						
Benzene	ND		5.0	ug/l						
Ethylbenzene	ND		5.0	ug/l						
Methyl t-butyl ether (MTBE)	ND		10.0	ug/l						
Naphthalene	ND		10.0	ug/l						
Toluene	ND		5.0	ug/l						
m&p-Xylene	ND		10.0	ug/l						
o-Xylene	ND		10.0	ug/l						
Total xylenes	ND		10.0	ug/l						
C5-C8 Aliphatic Hydrocarbons	ND		100	ug/l						
C9-C12 Aliphatic Hydrocarbons	ND		100	ug/l						
C9-C10 Aromatic Hydrocarbons	ND		100	ug/l						
<i>Surrogate: 2,5- Dibromotoluene-PID</i>			44.6	ug/l	50.0		89.3	70-130		
<i>Surrogate: 2,5- Dibromotoluene-FID</i>			47.1	ug/l	50.0		94.1	70-130		
LCS (B2L0324-BS1)					Prepared & Analyzed: 12/08/22					
Benzene	48.3		5.0	ug/l	50.0		96.6	70-130		
Ethylbenzene	49.8		5.0	ug/l	50.0		99.6	70-130		
Methyl t-butyl ether (MTBE)	50.7		10.0	ug/l	50.0		101	70-130		
Naphthalene	41.5		10.0	ug/l	50.0		83.1	70-130		
Toluene	49.3		5.0	ug/l	50.0		98.6	70-130		
m&p-Xylene	103		10.0	ug/l	100		103	70-130		
2-Methylpentane	51.6		5.0	ug/l	50.0		103	70-130		
n-Nonane	46.7		5.0	ug/l	50.0		93.4	70-130		
o-Xylene	51.2		10.0	ug/l	50.0		102	70-130		
Decane	54.1		5.0	ug/l	50.0		108	70-130		
n-Butylcyclohexane	50.8		5.0	ug/l	50.0		102	70-130		
n-Pentane	49.5		5.0	ug/l	50.0		99.0	70-130		
1,2,4-Trimethylbenzene	56.0		10.0	ug/l	50.0		112	70-130		
VPH_LCS_Aliphatic_C5-C8	152		5.0	ug/l	150		101	70-130		
VPH_LCS_Aliphatic_C9-C12	105		10.0	ug/l	100		105	70-130		
VPH_LCS_Aromatic_C9-C10	56.0		10.0	ug/l	50.0		112	70-130		
<i>Surrogate: 2,5- Dibromotoluene-PID</i>			46.1	ug/l	50.0		92.2	70-130		
<i>Surrogate: 2,5- Dibromotoluene-FID</i>			47.7	ug/l	50.0		95.5	70-130		

Quality Control
(Continued)

Volatile Petroleum Hydrocarbons (MADEP-VPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0324 - MADEP VPH (Continued)										
LCS Dup (B2L0324-BSD1)					Prepared & Analyzed: 12/08/22					
Benzene	48.9		5.0	ug/l	50.0		97.8	70-130	1.19	25
Ethylbenzene	50.6		5.0	ug/l	50.0		101	70-130	1.63	25
Methyl t-butyl ether (MTBE)	51.1		10.0	ug/l	50.0		102	70-130	0.806	25
Naphthalene	41.9		10.0	ug/l	50.0		83.7	70-130	0.815	25
Toluene	50.1		5.0	ug/l	50.0		100	70-130	1.59	25
m&p-Xylene	104		10.0	ug/l	100		104	70-130	1.43	25
2-Methylpentane	53.0		5.0	ug/l	50.0		106	70-130	2.54	25
n-Nonane	49.8		5.0	ug/l	50.0		99.7	70-130	6.48	25
o-Xylene	52.2		10.0	ug/l	50.0		104	70-130	1.97	25
Decane	57.8		5.0	ug/l	50.0		116	70-130	6.54	25
n-Butylcyclohexane	53.3		5.0	ug/l	50.0		107	70-130	4.80	25
n-Pentane	50.9		5.0	ug/l	50.0		102	70-130	2.87	25
1,2,4-Trimethylbenzene	57.2		10.0	ug/l	50.0		114	70-130	2.16	25
VPH_LCS_Aliphatic_C5-C8	156		5.0	ug/l	150		104	70-130	2.45	25
VPH_LCS_Aliphatic_C9-C12	111		10.0	ug/l	100		111	70-130	5.70	25
VPH_LCS_Aromatic_C9-C10	57.2		10.0	ug/l	50.0		114	70-130	2.16	25
Surrogate: 2,5- Dibromotoluene-PID			45.8	ug/l	50.0		91.5	70-130		
Surrogate: 2,5- Dibromotoluene-FID			48.5	ug/l	50.0		97.1	70-130		

Quality Control
(Continued)

Pesticides

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0413 - Sep-Funnel-extraction										
Blank (B2L0413-BLK1)					Prepared: 12/09/22 Analyzed: 12/13/22					
alpha-BHC	ND		0.02	ug/l						
gamma-BHC (Lindane)	ND		0.02	ug/l						
beta-BHC	ND		0.02	ug/l						
delta-BHC	ND		0.02	ug/l						
Heptachlor	ND		0.02	ug/l						
Aldrin	ND		0.02	ug/l						
Heptachlor epoxide	ND		0.02	ug/l						
gamma-Chlordane	ND		0.02	ug/l						
alpha-Chlordane	ND		0.02	ug/l						
Chlordane	ND		0.20	ug/l						
4,4'-DDE	ND		0.02	ug/l						
Endosulfan I	ND		0.02	ug/l						
Dieldrin	ND		0.02	ug/l						
Endrin	ND		0.02	ug/l						
4,4'-DDD	ND		0.02	ug/l						
Endosulfan II	ND		0.02	ug/l						
4,4'-DDT	ND		0.02	ug/l						
Endrin aldehyde	ND		0.02	ug/l						
Methoxychlor	ND		0.02	ug/l						
Endosulfan sulfate	ND		0.02	ug/l						
Endrin Ketone	ND		0.02	ug/l						
Toxaphene	ND		0.50	ug/l						
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>			0.0360	ug/l	0.0800		45.0	30-103		
<i>Surrogate: Decachlorobiphenyl (DCBP)</i>			0.0425	ug/l	0.0800		53.2	30-119		
LCS (B2L0413-BS2)					Prepared: 12/09/22 Analyzed: 12/13/22					
alpha-BHC	0.05		0.02	ug/l	0.0800		67.8	40-119		
gamma-BHC (Lindane)	0.05		0.02	ug/l	0.0800		64.8	40-123		
beta-BHC	0.06		0.02	ug/l	0.0800		71.8	53-116		
delta-BHC	0.06		0.02	ug/l	0.0800		71.5	46.6-126		
Heptachlor	0.03		0.02	ug/l	0.0800		43.3	40.8-114		
Aldrin	0.05		0.02	ug/l	0.0800		59.2	40-100		
Heptachlor epoxide	0.05		0.02	ug/l	0.0800		64.0	47.5-114		
gamma-Chlordane	0.05		0.02	ug/l	0.0800		65.2	49.7-111		
alpha-Chlordane	0.05		0.02	ug/l	0.0800		61.8	50-102		
4,4'-DDE	0.05		0.02	ug/l	0.0800		58.1	40-140		
Endosulfan I	0.05		0.02	ug/l	0.0800		65.3	40-117		
Dieldrin	0.05		0.02	ug/l	0.0800		62.5	54.4-115		
Endrin	0.04		0.02	ug/l	0.0800		51.6	51-140		
4,4'-DDD	0.07		0.02	ug/l	0.0800		90.9	42-140		
Endosulfan II	0.05		0.02	ug/l	0.0800		62.1	59.4-115		
4,4'-DDT	0.06		0.02	ug/l	0.0800		80.0	61-140		
Endrin aldehyde	0.06		0.02	ug/l	0.0800		73.5	56.2-118		
Methoxychlor	0.06		0.02	ug/l	0.0800		79.2	60.2-140		
Endosulfan sulfate	0.05		0.02	ug/l	0.0800		67.6	65.7-128		
Endrin Ketone	0.05		0.02	ug/l	0.0800		67.3	55.5-130		
<i>Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)</i>			0.0494	ug/l	0.0800		61.7	30-103		
<i>Surrogate: Decachlorobiphenyl (DCBP)</i>			0.0711	ug/l	0.0800		88.9	30-119		

Quality Control (Continued)

Herbicides

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0344 - EPA 8151A										
Blank (B2L0344-BLK1)					Prepared: 12/08/22 Analyzed: 12/09/22					
Dalapon	ND		1.0	ug/l						
Dicamba	ND		1.0	ug/l						
Dichloroprop	ND		1.0	ug/l						
2,4-D	ND		1.0	ug/l						
2,4,5-TP (Silvex)	ND		1.0	ug/l						
2,4,5-T	ND		1.0	ug/l						
2,4-DB	ND		1.0	ug/l						
Dinoseb	ND		1.0	ug/l						
MCP	ND		1.0	ug/l						
MCPA	ND		1.0	ug/l						
<i>Surrogate: 2,4-Dichlorophenyl acetic acid</i>			5.32	ug/l	5.00		106	30-150		
LCS (B2L0344-BS1)										
					Prepared: 12/08/22 Analyzed: 12/09/22					
Dalapon	2.9		1.0	ug/l	5.00		57.5	0-200		
Dicamba	4.0		1.0	ug/l	5.00		79.4	40-140		
Dichloroprop	5.0		1.0	ug/l	5.00		100	40-140		
2,4-D	4.4		1.0	ug/l	5.00		88.5	40-140		
2,4,5-TP (Silvex)	4.4		1.0	ug/l	5.00		88.6	40-140		
2,4,5-T	4.7		1.0	ug/l	5.00		94.9	40-140		
2,4-DB	4.3		1.0	ug/l	5.00		85.6	40-140		
Dinoseb	5.4		1.0	ug/l	5.00		107	40-140		
<i>Surrogate: 2,4-Dichlorophenyl acetic acid</i>			3.68	ug/l	5.00		73.7	30-150		
LCS Dup (B2L0344-BSD1)										
					Prepared: 12/08/22 Analyzed: 12/09/22					
Dalapon	2.4		1.0	ug/l	5.00		47.1	0-200	19.9	200
Dicamba	5.4		1.0	ug/l	5.00		108	40-140	30.7	30
Dichloroprop	5.1		1.0	ug/l	5.00		102	40-140	2.33	30
2,4-D	5.4		1.0	ug/l	5.00		108	40-140	19.9	30
2,4,5-TP (Silvex)	5.4		1.0	ug/l	5.00		109	40-140	20.5	30
2,4,5-T	5.1		1.0	ug/l	5.00		102	40-140	6.74	30
2,4-DB	5.1		1.0	ug/l	5.00		102	40-140	17.5	30
Dinoseb	4.9		1.0	ug/l	5.00		98.9	40-140	7.98	30
<i>Surrogate: 2,4-Dichlorophenyl acetic acid</i>			6.33	ug/l	5.00		127	30-150		

Quality Control (Continued)

Herbicides (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B2L0344 - EPA 8151A (Continued)										
Leach Fluid Blank (B2L0344-LBK1)					Prepared: 12/08/22 Analyzed: 12/09/22					
Dalapon	ND		1.0	ug/l						
Dicamba	ND		1.0	ug/l						
Dichloroprop	ND		1.0	ug/l						
2,4-D	ND		1.0	ug/l						
2,4,5-TP (Silvex)	ND		1.0	ug/l						
2,4,5-T	ND		1.0	ug/l						
2,4-DB	ND		1.0	ug/l						
Dinoseb	ND		1.0	ug/l						
MCP	ND		1.0	ug/l						
MCPA	ND		1.0	ug/l						
<i>Surrogate: 2,4-Dichlorophenyl acetic acid</i>			4.78	ug/l	5.00		95.6	30-150		
Matrix Spike (B2L0344-MS1)										
			Source: 2L01004-03		Prepared: 12/08/22 Analyzed: 12/09/22					
Dalapon	3.6		1.0	ug/l	5.00	ND	72.9	0-200		
Dicamba	5.1		1.0	ug/l	5.00	ND	103	0-200		
Dichloroprop	5.1		1.0	ug/l	5.00	ND	101	0-200		
2,4-D	5.0		1.0	ug/l	5.00	ND	100	0-200		
2,4,5-TP (Silvex)	5.4		1.0	ug/l	5.00	ND	108	0-200		
2,4,5-T	5.3		1.0	ug/l	5.00	ND	107	0-200		
2,4-DB	4.9		1.0	ug/l	5.00	ND	97.5	0-200		
Dinoseb	5.8		1.0	ug/l	5.00	ND	117	0-200		
<i>Surrogate: 2,4-Dichlorophenyl acetic acid</i>			4.70	ug/l	5.00		94.0	30-150		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

NEW ENGLAND TESTING LABORATORY, INC.
 59 Greenhill Street
 West Warwick, RI 02893
 1-888-863-8522



CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME/LOCATION		AQUEOUS	SOIL	OTHER	NO. OF CONTAINERS	PRESERVATIVE	TESTS**				REMARKS			
CLIENT		DATE	TIME						COMP	GRAB	SAMPLE I.D.	VOL		UPH RANGE ONLY	MUP DO NOT USE	MUP DO NOT USE
REPORT TO:	INVOICE TO:															
Horsley Witten Group		Truro MA														
Bryan Messer		Bryan Messer														
12/6/22	1245		X				2	HL	X							
	1440		X				1	HL								
	1310		X				1	HL								
	1545		X				10	HL	X	X	X					
Sampled by: (Signature)		Date/Time		Received by: (Signature)		Date/Time		Laboratory Remarks:		Special Instructions:						
[Signature]		12/6/22 1702		Sample Fridge		12/6/22 1701		Temp. received: 4 Cooled ☐		List Specific Detection Limit Requirements: RLGWL/GRWL limits mud Presumptive certainty * subtract non-hydrocarbon Turnaround (Business Days)						
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time										
[Signature]		12/7/22 1430		[Signature]		12/7/22 1430										
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Date/Time										
[Signature]		12/7/22 1630		Bryenne Terenzi		12/7/22 1650										

*Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH

MassDEP Analytical Protocol Certification Form

Laboratory Name: New England Testing Laboratory, Inc.

Project #:

Project Location: Truro, MA

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
2L07047

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 (GC/PID/FID) CAM IV A ☒	8082 PCB CAM V A ☐	9014 Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP VPH (GC/MS) CAM IV C ☐	8081 Pesticides CAM V B ☒	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☐	MassDEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☒	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX 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 within method holding times?	☒ 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 specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒ Yes ☐ No
E	VPH, EPH, APH, and TO-15 only 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 are 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 ¹
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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?	☒ Yes ☐ No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes ☒ No ¹

¹All 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, is accurate and complete.

Signature: Richard Warila

Position: Laboratory Director

Printed Name: Richard Warila

Date: 12/27/2022