

September 25, 2023

**VIA EMAIL**

Mr. Shawn Blodgett  
Manager  
Town of Castine  
PO Box 204  
Castine, ME 04421

[shawn@castine.me.us](mailto:shawn@castine.me.us)

Subject: Limited Soil Investigation for Environmental Impacts  
Castine Fire Station  
13 Court Street, Castine Maine

Dear Shawn:

On July 27, 2023, Sevee & Maher Engineers, Inc. (SME) conducted a limited soil investigation at the Fire Station, 13 Court Street in Castine, Maine. The investigation was conducted on behalf of the Town of Castine (the Town) in general accordance with our proposal dated July 24, 2023. Results of the soil sampling and testing described herein, show that concentrations do not exceed the Maine Department of Environmental Protection (MEDEP) Remedial Action Guidelines<sup>1</sup> (RAGs) for the Residential Exposure scenario, for the suite of chemicals selected to represent potential impacts from the operations of the fire station. While the Site is not currently being used as residential, SME applied the residential exposure scenario as a conservative evaluation for potential future site use.

**BACKGROUND**

Based on initial conversations with the Town, the objectives of the limited investigation were to test soil around the existing fire station, to determine if environmental impacts are present from historical fire station operations. This information is intended to be used to inform the Town of potential environmental liabilities on the existing fire station property, in the event that the property is sold, ownership transferred, or the property use changes in the future. Further, this information may be used to support the siting of a new fire station, with the specific intent of showing that with similar usage or practices, a new fire station should not result in environmental impacts at the new site.

The existing fire station is located on a small lot (approximately 0.19 acres) on Court Street. More than half of the lot is occupied by the fire station building (about 2,200 square feet) and the paved driveway and parking area (about 2,800 square feet). SME was advised that firefighting training with firefighting foams or actively extinguishing burning materials were not conducted on the property. Additionally,

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<sup>1</sup> Maine Department of Environmental Protection Remedial Action Guidelines for Contaminated Sites (RAGs), Effective Date: May 1, 2021.

SME was informed that firefighting Personal Protective Equipment (PPE) was sent to an off-site commercial cleaning service. With training and decontamination conducted off-site, the potential for firefighting-related contaminants to enter the environment is very low.

Drinking water is supplied to most Town residents by the municipal water supply system, and the fire station is not located within a recharge zone to the Town drinking water aquifers. A survey of nearby properties for private drinking water wells was not part of the scope of this work.

### **SOIL SAMPLING**

Based on the small lot size and minimal undeveloped area, it was agreed that SME would collect three shallow soil samples; one from the left side (northeast), one from the right side (southwest), and one from the rear (southeast) of the property, as representative of any notable site-wide contamination. SME also collected a duplicate sample to monitor laboratory performance. Approximate sample locations are shown on Figure 1. Sample locations were measured in the field with detailed sample locations shown on the soil sampling field logs (Soil Sampling Records) and the sample location figures included as Attachment 1.



**FIGURE 1**  
**APPROXIMATE SOIL SAMPLE LOCATIONS CASTINE FIRE STATION 7/27/2023**

At each location, a soil sample was collected from a depth of 3 to 6 inches below the ground surface. The top 3 inches was generally vegetation (grass), roots, and organic loam (topsoil). The underlying materials were a dark brown sandy loam with some gravel present. Soil samples were collected in general accordance with Maine Department of Environmental Protection's (MEDEP's) Standard Operating Procedures (SOPs).<sup>2</sup>

Soil samples were submitted to Alpha Analytical Laboratory (Alpha), for analysis of Per- and polyfluoroalkyl substances (PFAS), Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), and 8 RCRA Metals to cover a wide variety of compounds related to firefighting foams, fuel-related compounds, solvents, many of the polycyclic aromatic hydrocarbons (PAHs) associated with burnt materials, and impacts from lead paints. It was acknowledged in the planning that these analyses do not cover all contaminants, but do cover a wide range of contaminants that would indicate environmental impacts from firefighting equipment, materials, and practices.

### **SAMPLING RESULTS**

Table 1 summarizes the laboratory testing results for the three environmental soil samples and the duplicate soil sample. Results are compared to the MEDEP RAGs, Residential Exposure scenario. The table lists only compounds that were detected in one or more of the soil samples. Compounds not listed in the table were not detected above the laboratory reporting limit (RL). Results for all compounds tested are included in the laboratory reports provided at Attachment 2.

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<sup>2</sup> "Protocol for Collecting Soil Samples," (SOP No. RWM-DR-006, March 3, 2021, Revision 3) and "Addendum A- Additional Requirements for the Sampling of Per- and Polyfluoroalkyl Substances (PFASs), Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS)" (SOP No. RWM-DR-014-ADDENDUM, December 7, 2021).

**TABLE 1**  
**TESTING RESULTS (DETECTED COMPOUNDS ONLY)**  
**SOIL SAMPLES COLLECTED 7/27/2023**

Chemical Class	Compound	FS01	FS01 (duplicate)	FS02	FS03	Maine RAG Residential
<b>PFAS</b> (ng/Kg) (PPT)	Perfluorobutanoic acid (PFBA)	ND	(ND)	ND	<b>1260</b>	No RAG
	Perfluoroheptanoic acid (PFHpA)	ND	(ND)	ND	<b>700</b>	No RAG
	Perfluorohexanoic acid (PFHxA)	ND	(ND)	ND	<b>1430</b>	No RAG
	Perfluorononanoic acid (PFNA)	ND	(ND)	<b>292</b>	<b>1930</b>	No RAG
	Perfluorooctanoic acid (PFOA)	ND	(ND)	<b>277</b>	<b>1880</b>	1,700,000
	6:2 Fluorotelomer sulfonic acid (6:2FTS)	ND	(ND)	ND	<b>769</b>	No RAG
	Perfluorooctanesulfonic acid (PFOS)	<b>970</b>	(1050)	<b>1790</b>	<b>2620</b>	1,700,000
	Perfluoropentanoic acid (PFPeA)	ND	(ND)	ND	<b>2080</b>	No RAG
	Perfluoroundecanoic acid (PFUnA)	ND	(ND)	ND	<b>1380</b>	No RAG
	Perfluorodecanoic acid (PFDA)	ND	(271)	ND	<b>3690</b>	No RAG
	Perfluorododecanoic acid (PFDoA)	ND	(ND)	ND	<b>1270</b>	No RAG
<b>SVOCs</b> (µg/Kg) (PPB)	Naphthalene (SVOC)	ND	(ND)	<b>11</b>	<b>75</b>	29,000
	2-Methylnaphthalene	ND	(ND)	ND	<b>48</b>	330,000
	Acenaphthylene	<b>15</b>	<b>(11)</b>	ND	<b>13</b>	4,900,000
	Acenaphthene	ND	(ND)	<b>12</b>	<b>220</b>	4,900,000
	Fluorene	ND	(ND)	<b>12</b>	<b>240</b>	3,300,000
	Phenanthrene	<b>41</b>	<b>(26)</b>	<b>130</b>	<b>3000</b>	2,500,000
	Anthracene	<b>12</b>	<b>(8)</b>	<b>16</b>	<b>380</b>	25,000,000
	Fluoranthene	<b>110</b>	<b>(82)</b>	<b>200</b>	<b>3800</b>	3,300,000
	Pyrene	<b>100</b>	<b>(79)</b>	<b>170</b>	<b>3000</b>	2,500,000
	Benzo(a)Anthracene	<b>60</b>	<b>(49)</b>	<b>72</b>	<b>1700</b>	16,000
	Chrysene	<b>54</b>	<b>(45)</b>	<b>79</b>	<b>1500</b>	1,600,000
	Benzo(b)Fluoranthene	<b>75</b>	<b>(64)</b>	<b>98</b>	<b>2200</b>	16,000
	Benzo(k)Fluoranthene	<b>25</b>	<b>(20)</b>	<b>35</b>	<b>310</b>	160,000
	Benzo(a)Pyrene	<b>64</b>	<b>(52)</b>	<b>83</b>	<b>1600</b>	1,600
	Indeno(1,2,3-c,d)Pyrene	<b>43</b>	<b>(40)</b>	<b>59</b>	<b>580</b>	16,000
	Dibenz(a,h)Anthracene	<b>9.4</b>	<b>(8.4)</b>	<b>12</b>	<b>120</b>	1,600
	Benzo(g,h,i)perylene	<b>34</b>	<b>(33)</b>	<b>45</b>	<b>420</b>	2,500,000
Carbazole	ND	(ND)	ND	<b>270</b>	270,000	
1-Methylnaphthalene	ND	(ND)	ND	<b>32</b>	240,000	
<b>METALS</b> (mg/Kg) (PPM)	Total Arsenic	<b>5.01</b>	<b>(6.1 J)</b>	<b>6.1</b>	<b>7.16</b>	9.3
	Total Barium	<b>14.8</b>	<b>(18.7)</b>	<b>13.3</b>	<b>15</b>	21,000
	Total Chromium	<b>13.3 J</b>	<b>(15.2 J)</b>	<b>9.56 J</b>	<b>11.5 J</b>	100,000
	Total Lead	<b>11.6</b>	<b>(14.4)</b>	<b>11.9</b>	<b>39</b>	140
<p><u>Acronyms</u>  ng/Kg = nanograms per kilogram  µg/Kg = micrograms per kilogram  mg/Kg = milligrams per kilogram  ND = Value not detected above the laboratory limits  J = Value flagged as estimated due to minor laboratory deficiency</p>						

The analytical results are summarized as follows:

#### **PFAS**

- Eleven (11) individual PFAS compounds were detected in the Site soils, but at concentrations that do not exceed the MEDEP Residential RAGs. PFAS compounds at low concentrations are common in soils at undeveloped and developed Sites in Maine.<sup>3</sup>
- Only two (2) PFAS compounds were present at FS01 (northeast side of building) and only three (3) PFAS compounds were present at FS02 (rear of building).
- PFAS compounds were more common in sample FS03 (southwest side of building), but did not exceed the MEDEP Residential RAGs.

#### **SVOCs**

- SVOCs, particularly PAHs, at low concentrations, are common in soils at undeveloped sites in Maine. Further, PAHs are typically present at low levels in soils adjacent to paved surfaces. MEDEP has published background PAH concentrations for rural and urban developed Sites ranging from 100 to 3,200 µg/Kg.<sup>4</sup>
- 19 PAH compounds were detected in the Site soils, at concentrations that do not exceed the MEDEP Residential RAGs.
- PAH compounds were more common in sample FS03 (southwest side of building), but did not exceed the MEDEP Residential RAGs.

#### **VOCs**

- All VOCs were below the laboratory reporting levels (RLs).

#### **Metals**

- Of the 8 metals analyzed, four (arsenic, barium, chromium, and lead) were present in the soils at concentrations typical of concentrations found in Maine soils.
- None of the metals exceeded the MEDEP Residential RAGs.
- Total chromium was measured and compared to the chromium (III) RAG since chromium (VI) is not expected in this environment. Chromium (VI) analysis was not conducted.
- Total lead was measured and compared to the MEDEP Residential RAGs. Toxicity Characteristic Leaching Procedure (TCLP) was not utilized to further evaluate toxicity.

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<sup>3</sup> Maine Department of Environmental Protection Remedial Action Guidelines for Contaminated Sites (RAGs), Effective Date: May 1, 2021.

<sup>4</sup> "Protocol for Collecting Soil Samples," (SOP No. RWM-DR-006, March 3, 2021, Revision 3) and "Addendum A- Additional Requirements for the Sampling of Per- and Polyfluoroalkyl Substances (PFASs), Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS)" (SOP No. RWM-DR-014-ADDENDUM, December 7, 2021).

## **DATA QUALITY**

SME performed a U.S. Environmental Protection Agency (U.S.EPA) Modified Tier 1 Plus data validation based on the following QC criteria: preservation and holding times, field duplicates, trip blanks, method blanks, laboratory control samples (LCS), laboratory control sample duplicates (LCSD), and surrogate recoveries. A review of the analytical data and laboratory report indicates that the data quality is acceptable for its intended use. SME's review of the analytical data package and sample handling procedures revealed minor deficiencies common to soil investigation activities. The Laboratory Duplicate, LCS, MS for arsenic, total chromium, and vinyl acetate were outside of acceptance limits. Nine (9) results were qualified. No results were rejected, which is an acceptance percentage of 100 percent.

## **SUMMARY AND RECOMMENDATIONS**

Laboratory analyses of three soil samples, collected from representative locations surrounding the Castine Fire Station, resulted in concentrations of PFAS, SVOCs, VOCs, and Total RCRA Metals that do not exceed the MEDEP RAGs for the Residential Exposure Scenario. Given the very small lot size, the known uses of the Site, the reports that firefighting exercises using firefighting foams were not conducted on site nor were firefighting exercises involving extinguishing of burning materials, and cleaning of firefighting PPE occurred off-site, this limited soil testing program provides sufficient data to characterize the Site surficial soils for any gross contamination related to firefighting activities and Site use. Groundwater quality was not evaluated in this limited investigation and the presence of or impacts from current or former underground storage tanks, floor drains, or specific chemical storage areas, have not been evaluated.

The low concentrations of PFAS and PAH compounds found at the Site are typical of soils in developed areas and those adjacent to paved surfaces. The concentrations found should not prohibit transfer of ownership or change of future property use. The concentrations of PFAS, PAHs, and metals do not suggest that the current level of firefighting activities have an adverse effect on the environment at this location or at other locations if the fire station were to be moved, assuming the same level of activity at a new site.

The conclusions of our testing and analysis are based on the limited investigation described herein. While the three soil samples are sufficient to rule out significant gross contamination of shallow soils across the Site, it does not rule out the possibility of very localized higher concentrations of contaminants, or impacts to deeper soils or groundwater. Any future soil removal should consider appropriate characterization and off-site disposal.

At this time, no additional soil sampling or investigations are recommended. However, if the property is to transfer ownership or experience a significant change of use, SME recommends a Phase 1 Environmental Site Assessment (ESA) be conducted to evaluate potential impacts from non-firefighting activities such as fuel or chemical storage.



Should questions arise or additional information be desired, please do not hesitate to contact me at 207.829.5016.

Sincerely,

SEVEE & MAHER ENGINEERS, INC.

A handwritten signature in black ink, appearing to read "E. M. Clapp". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Erik M. Clapp, Ph.D., L.G.  
President/Principal

Attachment 1 Soil Sampling Records  
Attachment 2 Laboratory Reports of Analyses

**ATTACHMENT 1**  
**SOIL SAMPLING RECORDS**

Town of Castine  
Fire and Rescue Building Soil Sample Photo Documentation  
Castine Maine



July 27, 2023 – Fire and Rescue Building view from Court



July 27, 2023 – Location of soil sample SL-FS01 and Dup-1.



July 27, 2023 – Location of soil sample SL-FS02 collected from the back of building



July 27, 2023 – Location of soil sample SL-FS03.

**SOIL SAMPLING RECORD**

SITE: <u>CASLINE FIRE DEPT.</u>	SAMPLE LOCATION: <u>SL-FS01</u>
SAMPLE DATE: <u>7-27-23</u>	WEATHER: <u>OVERCAST 70's WIND: LITE BZZ.</u>
PERSONNEL: <u>TOOD WILCOXSON</u>	<u>VERY HUMID - PM RAIN (POST SAMPLING)</u>

EQUIPMENT: DEDICATED S/S SOIL TROWEL

DECONTAMINATION:  Yes  No METHOD: ALCONOX WASH, RINSE w/ PFAS FREE WATER

EQUIPMENT BLANK:  Yes  No BLANK ID: NA

SOIL SAMPLE OBSERVATIONS:

Depth (BGS):	Description:
<u>0 - 3"</u>	<u>DARK BROWN SANDY GRAVEL ORGANIC LAYER (GRASS, DEBRIS)</u>
<u>3 - 6"</u>	<u>DARK BROWN GRAVELY SANDY LOAM.</u>

ODOR: NONE

WATER PRESENT:  Yes  No If Yes, Depth: NA

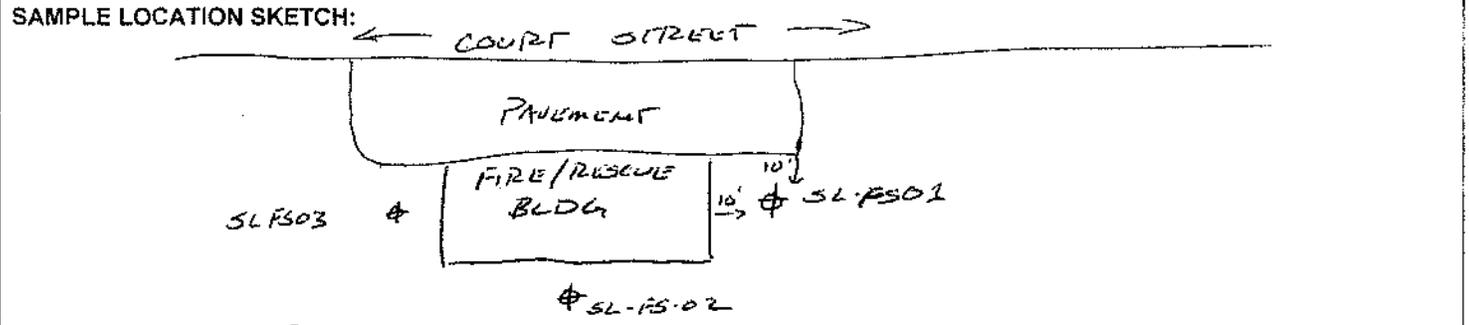
SAMPLE ID: SL-FS01-A-475T @ 1008

SAMPLE DEPTH INTERVAL: 3-6 INCHES (BGS)

SAMPLE ANALYSIS: PFAS 537.1 (BOTTLES PRESERVED w/TRIZMA), 8260 H/LC, 8270, PCBs & METALS T.S.

FIELD DUPLICATE:  Yes  No DUPLICATE ID: SL-DP1-X-475T

FIELD BLANK:  Yes  No BLANK ID: FB-XXX-X-475T @ 0943



NOTES: FIELD BLANK COLLECTED FROM AREA OF SL-FS03 PRIOR TO START OF SOIL SAMPLING.

BGS - Below Ground Surface

**SOIL SAMPLING RECORD**

SITE: <u>CASLINE FIRE DEPT.</u>	SAMPLE LOCATION: <u>SL-FSO2</u>
SAMPLE DATE: <u>7-27-23</u>	WEATHER: <u>OVERCAST 61-64 70'S WIND: LITE BZZ</u>
PERSONNEL: <u>TODD WILCOXSON</u>	<u>VERY HUMID</u>

EQUIPMENT: DEDICATED S/S SOIL TROWEL

DECONTAMINATION:  Yes  No METHOD: ALCONOX WASH, RINSE w/ PPA'S FRESH WATER

EQUIPMENT BLANK:  Yes  No BLANK ID: \_\_\_\_\_

SOIL SAMPLE OBSERVATIONS:

Depth (BGS):	Description:
<u>0-3"</u>	<u>HEAVY VEGETATION (GRASS ROOTS) DARK BROWN SANDY LOAM w/ GRAVEL.</u>
<u>3-6"</u>	<u>DARK BROWN SANDY LOAM w/ GRAVEL, OCCASIONAL ROOT</u>

ODOR: NONE

WATER PRESENT:  Yes  No If Yes, Depth: NA

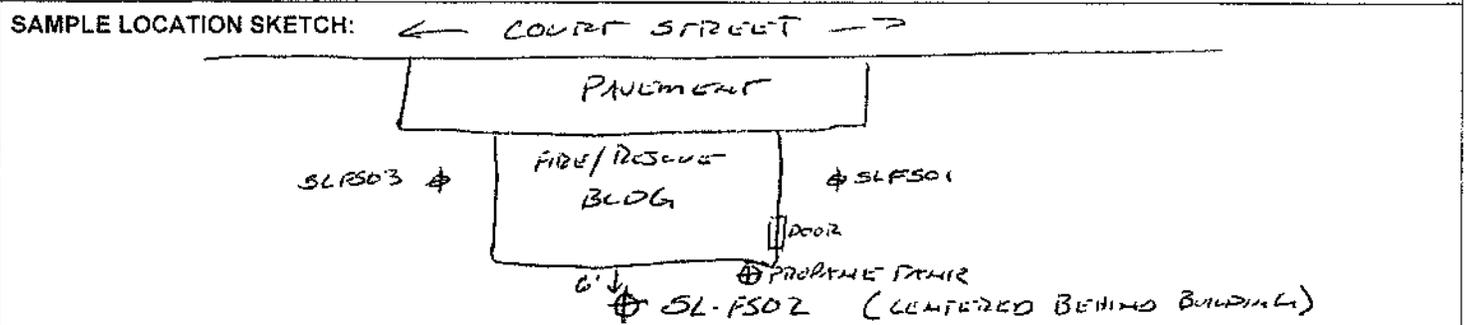
SAMPLE ID: SL-FSO2-A-475T @ 1025

SAMPLE DEPTH INTERVAL: 3-6 inches (BGS)

SAMPLE ANALYSIS: PPAS 537-1 (BOTTLES PRES. w/ DRYING), 8260 H./L., 8270, PCRA 8 METALS, T.S.

FIELD DUPLICATE:  Yes  No DUPLICATE ID: NA

FIELD BLANK:  Yes  No BLANK ID: FB-XXX-X-475T @ 0943



NOTES: FIELD BLANK COLLECTED IN AREA OF SL-FSO3 PRIOR TO SOIL SAMPLING.

BGS - Below Ground Surface

**SOIL SAMPLING RECORD**

SITE: <u>CASIMIR FIRE DEPT.</u>	SAMPLE LOCATION: <u>SL-F503</u>
SAMPLE DATE: <u>7-27-23</u>	WEATHER: <u>Overcast 70's, Light Breeze</u>
PERSONNEL: <u>TODD WILCOXSON</u>	<u>Very Humid</u>

EQUIPMENT: Dedicated S/S Soil Trowel

DECONTAMINATION:  Yes  No METHOD: Alcohol Wipe, Rinse w/PFA Free Water

EQUIPMENT BLANK:  Yes  No BLANK ID: NA

SOIL SAMPLE OBSERVATIONS:

Depth (BGS):	Description:
<u>0-3"</u>	<u>Dark Brown, SAND GRAVEL ORGANIC LAYER (LOTS OF ROOTS)</u>
<u>3-6"</u>	<u>DARK BROWN SANDY LOAM w/ OCCASIONAL GRAVEL</u>

ODOR: None

WATER PRESENT:  Yes  No If Yes, Depth: NA

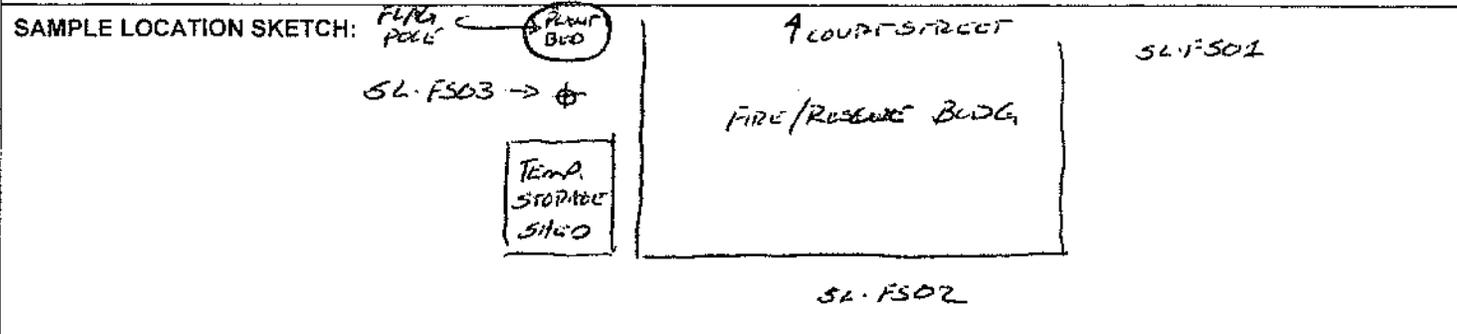
SAMPLE ID: SL-F503-A-475T @ 1040

SAMPLE DEPTH INTERVAL: 3-6 INCHES (BGS)

SAMPLE ANALYSIS: PFA 537.1 (BOTTLES PWS. w/PRIMA), 8260H/LO, 8270, PIRA BOTTLES, T.S.

FIELD DUPLICATE:  Yes  No DUPLICATE ID: NA

FIELD BLANK:  Yes  No BLANK ID: FB-XXX-K-475T @ 0943



NOTES: FIELD BLANK COLLECTED IN AREA OF SL-F503 PRIOR TO SAMPLING.

BGS - Below Ground Surface

# CHAIN OF CUSTODY

PAGE / OF /



## Project Information

Project Name: Castine

Project Location: Fire Station

Project Number: 231084.00

Project Manager: Erik Clapp

ALPHA Quote #::

Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

## Client Information

Client Sevee & Maher Engineers

Address: 4 Blanchard Road

Town: Cumberland, Maine 04021

Phone: 207-829-5016

Fax:

Email: emc@smemaine.com

These samples have been Previously analyzed by ALPHA

Other Project Specific Requirements/Comment/Detection Limits:

Date Rec'd in Lab:

ALPHA Job #:

## Report Information Data deliverables

## Billing Information

FAX  EMAIL  
 ADEX  Add'l Deliverable

Same as Client Info PO #: 231084.00

## Regulatory Requirements/Report Limits

State/Fed Program Criteria

## ANALYSIS

T RCRA 8 6010D/7471	Total solids	SVOCs 8270D-SIM	VOC-8260B-SOIL IN DI	VOC-8260B-SOIL IN MET	537.1 Mod. w/ Isotope	Total solids												
			X	X														
					X													
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

## SAMPLE HANDLING

### Filtration

Done  
 Not Needed  
 Lab to do

### Preservation

Lab to do  
 (Please Specify Below)

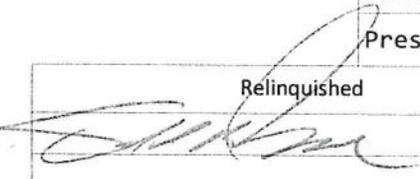
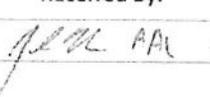
Sample Specific Comments

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Lab Use)	SAMPLE	Collection		Matrix	Sampler's Initials
		Date	Time		
	BT-XXX-X-475T	7-27-23	—	Water	TKW
	FB-XXX-X-475T		0943	Water	
	SL-DP1-X-475T		—	Soil	
	SL-FS01-A-475T		1008	Soil	
	SL-FS02-A-475T		1025	Soil	
	SL-FS03-A-475T		1040	Soil	

- Container Type**
- A = Amber glass
  - SA = Summa Canister
  - B = Bacteria cup
  - C = Cube
  - D = BOD Bottle
  - E = Encore
  - F = Glass
  - G = Other
- Preservative**
- W = Water
  - A = No Pres.. 4C
  - B = HCL
  - C = HNO3
  - D = H2SO4
  - E = NaOH
  - F = MeOH
  - G = NaHSO4
  - H = Na2S2O3
  - I = Ascorbic Acid
  - J = NH4Cl
  - K = ZN Acetate

Container Type	A	P	A	V	V	P	P
Preservative	A	A	A	W	F	A	A
Relinquished							
Date/Time	7-28-23 11:23						
Received By:							
Date/Time	7/28/23 11:29						

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

**ATTACHMENT 2**

**LABORATORY REPORTS OF ANALYSES**



## ANALYTICAL REPORT

Lab Number:	L2343616
Client:	Sevee & Maher Engineers, Inc. 4 Blanchard Road P.O. Box 85A Cumberland Center, ME 04021
ATTN:	Erik Clapp
Phone:	(207) 829-5016
Project Name:	CASTINE
Project Number:	231084.00
Report Date:	08/17/23

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-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2343616-01	BT-XXX-X-475T	SOIL	FIRE STATION	07/27/23 00:00	07/28/23
L2343616-02	FB-XXX-X-475T	WATER	FIRE STATION	07/27/23 09:43	07/28/23
L2343616-03	SL-DP1-X-475T	SOIL	FIRE STATION	07/27/23 00:00	07/28/23
L2343616-04	SL-FS01-A-475T	SOIL	FIRE STATION	07/27/23 10:08	07/28/23
L2343616-05	SL-FS02-A-475T	SOIL	FIRE STATION	07/27/23 10:25	07/28/23
L2343616-06	SL-FS03-A-475T	SOIL	FIRE STATION	07/27/23 10:40	07/28/23

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

### 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.

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**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

### Case Narrative (continued)

#### Perfluorinated Alkyl Acids by Isotope Dilution

L2343616-02, -05, WG1809987-1, and WG1809987-2: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2343616-06: 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 WG1810509-1 Method Blank, associated with L2343616-02, has a concentration above the reporting limit for 1h,1h,2h,2h-perfluorooctanesulfonic acid (6:2fts). Since the associated sample concentration is non-detect to the reporting limit, no corrective action is required.

The WG1809987-2 LCS recoveries, associated with L2343616-03 through -06, are above the acceptance criteria for perfluoropentanesulfonic acid (pfpes) (129%), perfluoroheptanesulfonic acid (pfhps) (137%), and perfluorotridecanoic acid (pfrda) (146%); however, the associated samples are non-detect to the RL for these target analytes. The results of the original analysis are reported.

#### Total Metals

The WG1810403-3 MS recoveries, performed on L2343616-03, are outside the acceptance criteria for arsenic (126%) and chromium (130%). A post digestion spike was performed and was within acceptance criteria.

The WG1810403-4 Laboratory Duplicate RPD for chromium (29%), performed on L2343616-03, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

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:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 08/17/23

# ORGANICS

# VOLATILES

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-01  
 Client ID: BT-XXX-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8260D  
 Analytical Date: 08/05/23 16:28  
 Analyst: JIC  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 Low - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	5.0	--	1
1,1-Dichloroethane	ND		ug/kg	1.0	--	1
Chloroform	ND		ug/kg	1.5	--	1
Carbon tetrachloride	ND		ug/kg	1.0	--	1
1,2-Dichloropropane	ND		ug/kg	1.0	--	1
Dibromochloromethane	ND		ug/kg	1.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	1.0	--	1
Tetrachloroethene	ND		ug/kg	0.50	--	1
Chlorobenzene	ND		ug/kg	0.50	--	1
Trichlorofluoromethane	ND		ug/kg	4.0	--	1
1,2-Dichloroethane	ND		ug/kg	1.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.50	--	1
Bromodichloromethane	ND		ug/kg	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--	1
1,1-Dichloropropene	ND		ug/kg	0.50	--	1
Bromoform	ND		ug/kg	4.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--	1
Benzene	ND		ug/kg	0.50	--	1
Toluene	ND		ug/kg	1.0	--	1
Ethylbenzene	ND		ug/kg	1.0	--	1
Chloromethane	ND		ug/kg	4.0	--	1
Bromomethane	ND		ug/kg	2.0	--	1
Vinyl chloride	ND		ug/kg	1.0	--	1
Chloroethane	ND		ug/kg	2.0	--	1
1,1-Dichloroethene	ND		ug/kg	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-01  
 Client ID: BT-XXX-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatiles Organics by EPA 5035 Low - Westborough Lab</b>						
Trichloroethene	ND		ug/kg	0.50	--	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	--	1
Methyl tert butyl ether	ND		ug/kg	2.0	--	1
p/m-Xylene	ND		ug/kg	2.0	--	1
o-Xylene	ND		ug/kg	1.0	--	1
Xylenes, Total	ND		ug/kg	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--	1
Dibromomethane	ND		ug/kg	2.0	--	1
1,4-Dichlorobutane	ND		ug/kg	10	--	1
1,2,3-Trichloropropane	ND		ug/kg	2.0	--	1
Styrene	ND		ug/kg	1.0	--	1
Dichlorodifluoromethane	ND		ug/kg	10	--	1
Acetone	ND		ug/kg	25	--	1
Carbon disulfide	ND		ug/kg	10	--	1
2-Butanone	ND		ug/kg	10	--	1
Vinyl acetate	ND		ug/kg	10	--	1
4-Methyl-2-pentanone	ND		ug/kg	10	--	1
2-Hexanone	ND		ug/kg	10	--	1
Ethyl methacrylate	ND		ug/kg	10	--	1
Acrylonitrile	ND		ug/kg	4.0	--	1
Bromochloromethane	ND		ug/kg	2.0	--	1
Tetrahydrofuran	ND		ug/kg	4.0	--	1
2,2-Dichloropropane	ND		ug/kg	2.0	--	1
1,2-Dibromoethane	ND		ug/kg	1.0	--	1
1,3-Dichloropropane	ND		ug/kg	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--	1
Bromobenzene	ND		ug/kg	2.0	--	1
n-Butylbenzene	ND		ug/kg	1.0	--	1
sec-Butylbenzene	ND		ug/kg	1.0	--	1
tert-Butylbenzene	ND		ug/kg	2.0	--	1
o-Chlorotoluene	ND		ug/kg	2.0	--	1
p-Chlorotoluene	ND		ug/kg	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--	1
Hexachlorobutadiene	ND		ug/kg	4.0	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-01  
 Client ID: BT-XXX-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	1.0	--	1
p-Isopropyltoluene	ND		ug/kg	1.0	--	1
Naphthalene	ND		ug/kg	4.0	--	1
n-Propylbenzene	ND		ug/kg	1.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--	1
Ethyl ether	ND		ug/kg	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	98		70-130

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8260D  
 Analytical Date: 08/05/23 16:54  
 Analyst: JIC  
 Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 Low - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	3.1	--	1
1,1-Dichloroethane	ND		ug/kg	0.62	--	1
Chloroform	ND		ug/kg	0.93	--	1
Carbon tetrachloride	ND		ug/kg	0.62	--	1
1,2-Dichloropropane	ND		ug/kg	0.62	--	1
Dibromochloromethane	ND		ug/kg	0.62	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.62	--	1
Tetrachloroethene	ND		ug/kg	0.31	--	1
Chlorobenzene	ND		ug/kg	0.31	--	1
Trichlorofluoromethane	ND		ug/kg	2.5	--	1
1,2-Dichloroethane	ND		ug/kg	0.62	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.31	--	1
Bromodichloromethane	ND		ug/kg	0.31	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.62	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.31	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.31	--	1
1,1-Dichloropropene	ND		ug/kg	0.31	--	1
Bromoform	ND		ug/kg	2.5	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.31	--	1
Benzene	ND		ug/kg	0.31	--	1
Toluene	ND		ug/kg	0.62	--	1
Ethylbenzene	ND		ug/kg	0.62	--	1
Chloromethane	ND		ug/kg	2.5	--	1
Bromomethane	ND		ug/kg	1.2	--	1
Vinyl chloride	ND		ug/kg	0.62	--	1
Chloroethane	ND		ug/kg	1.2	--	1
1,1-Dichloroethene	ND		ug/kg	0.62	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.93	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatiles Organics by EPA 5035 Low - Westborough Lab</b>						
Trichloroethene	ND		ug/kg	0.31	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.2	--	1
Methyl tert butyl ether	ND		ug/kg	1.2	--	1
p/m-Xylene	ND		ug/kg	1.2	--	1
o-Xylene	ND		ug/kg	0.62	--	1
Xylenes, Total	ND		ug/kg	0.62	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.62	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.62	--	1
Dibromomethane	ND		ug/kg	1.2	--	1
1,4-Dichlorobutane	ND		ug/kg	6.2	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.2	--	1
Styrene	ND		ug/kg	0.62	--	1
Dichlorodifluoromethane	ND		ug/kg	6.2	--	1
Acetone	ND		ug/kg	16	--	1
Carbon disulfide	ND		ug/kg	6.2	--	1
2-Butanone	ND		ug/kg	6.2	--	1
Vinyl acetate	ND		ug/kg	6.2	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.2	--	1
2-Hexanone	ND		ug/kg	6.2	--	1
Ethyl methacrylate	ND		ug/kg	6.2	--	1
Acrylonitrile	ND		ug/kg	2.5	--	1
Bromochloromethane	ND		ug/kg	1.2	--	1
Tetrahydrofuran	ND		ug/kg	2.5	--	1
2,2-Dichloropropane	ND		ug/kg	1.2	--	1
1,2-Dibromoethane	ND		ug/kg	0.62	--	1
1,3-Dichloropropane	ND		ug/kg	1.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.31	--	1
Bromobenzene	ND		ug/kg	1.2	--	1
n-Butylbenzene	ND		ug/kg	0.62	--	1
sec-Butylbenzene	ND		ug/kg	0.62	--	1
tert-Butylbenzene	ND		ug/kg	1.2	--	1
o-Chlorotoluene	ND		ug/kg	1.2	--	1
p-Chlorotoluene	ND		ug/kg	1.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	1.9	--	1
Hexachlorobutadiene	ND		ug/kg	2.5	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.62	--	1
p-Isopropyltoluene	ND		ug/kg	0.62	--	1
Naphthalene	ND		ug/kg	2.5	--	1
n-Propylbenzene	ND		ug/kg	0.62	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.2	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.1	--	1
Ethyl ether	ND		ug/kg	1.2	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	101		70-130

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8260D  
 Analytical Date: 08/05/23 17:20  
 Analyst: JIC  
 Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 Low - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	3.0	--	1
1,1-Dichloroethane	ND		ug/kg	0.60	--	1
Chloroform	ND		ug/kg	0.90	--	1
Carbon tetrachloride	ND		ug/kg	0.60	--	1
1,2-Dichloropropane	ND		ug/kg	0.60	--	1
Dibromochloromethane	ND		ug/kg	0.60	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.60	--	1
Tetrachloroethene	ND		ug/kg	0.30	--	1
Chlorobenzene	ND		ug/kg	0.30	--	1
Trichlorofluoromethane	ND		ug/kg	2.4	--	1
1,2-Dichloroethane	ND		ug/kg	0.60	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.30	--	1
Bromodichloromethane	ND		ug/kg	0.30	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.60	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.30	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.30	--	1
1,1-Dichloropropene	ND		ug/kg	0.30	--	1
Bromoform	ND		ug/kg	2.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.30	--	1
Benzene	ND		ug/kg	0.30	--	1
Toluene	ND		ug/kg	0.60	--	1
Ethylbenzene	ND		ug/kg	0.60	--	1
Chloromethane	ND		ug/kg	2.4	--	1
Bromomethane	ND		ug/kg	1.2	--	1
Vinyl chloride	ND		ug/kg	0.60	--	1
Chloroethane	ND		ug/kg	1.2	--	1
1,1-Dichloroethene	ND		ug/kg	0.60	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.90	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatiles Organics by EPA 5035 Low - Westborough Lab</b>						
Trichloroethene	ND		ug/kg	0.30	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.2	--	1
Methyl tert butyl ether	ND		ug/kg	1.2	--	1
p/m-Xylene	ND		ug/kg	1.2	--	1
o-Xylene	ND		ug/kg	0.60	--	1
Xylenes, Total	ND		ug/kg	0.60	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.60	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.60	--	1
Dibromomethane	ND		ug/kg	1.2	--	1
1,4-Dichlorobutane	ND		ug/kg	6.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.2	--	1
Styrene	ND		ug/kg	0.60	--	1
Dichlorodifluoromethane	ND		ug/kg	6.0	--	1
Acetone	ND		ug/kg	15	--	1
Carbon disulfide	ND		ug/kg	6.0	--	1
2-Butanone	ND		ug/kg	6.0	--	1
Vinyl acetate	ND		ug/kg	6.0	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.0	--	1
2-Hexanone	ND		ug/kg	6.0	--	1
Ethyl methacrylate	ND		ug/kg	6.0	--	1
Acrylonitrile	ND		ug/kg	2.4	--	1
Bromochloromethane	ND		ug/kg	1.2	--	1
Tetrahydrofuran	ND		ug/kg	2.4	--	1
2,2-Dichloropropane	ND		ug/kg	1.2	--	1
1,2-Dibromoethane	ND		ug/kg	0.60	--	1
1,3-Dichloropropane	ND		ug/kg	1.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.30	--	1
Bromobenzene	ND		ug/kg	1.2	--	1
n-Butylbenzene	ND		ug/kg	0.60	--	1
sec-Butylbenzene	ND		ug/kg	0.60	--	1
tert-Butylbenzene	ND		ug/kg	1.2	--	1
o-Chlorotoluene	ND		ug/kg	1.2	--	1
p-Chlorotoluene	ND		ug/kg	1.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	1.8	--	1
Hexachlorobutadiene	ND		ug/kg	2.4	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.60	--	1
p-Isopropyltoluene	ND		ug/kg	0.60	--	1
Naphthalene	ND		ug/kg	2.4	--	1
n-Propylbenzene	ND		ug/kg	0.60	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.2	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.0	--	1
Ethyl ether	ND		ug/kg	1.2	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	100		70-130

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8260D  
 Analytical Date: 08/05/23 17:46  
 Analyst: JIC  
 Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 Low - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	3.0	--	1
1,1-Dichloroethane	ND		ug/kg	0.61	--	1
Chloroform	ND		ug/kg	0.92	--	1
Carbon tetrachloride	ND		ug/kg	0.61	--	1
1,2-Dichloropropane	ND		ug/kg	0.61	--	1
Dibromochloromethane	ND		ug/kg	0.61	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.61	--	1
Tetrachloroethene	ND		ug/kg	0.30	--	1
Chlorobenzene	ND		ug/kg	0.30	--	1
Trichlorofluoromethane	ND		ug/kg	2.4	--	1
1,2-Dichloroethane	ND		ug/kg	0.61	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.30	--	1
Bromodichloromethane	ND		ug/kg	0.30	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.61	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.30	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.30	--	1
1,1-Dichloropropene	ND		ug/kg	0.30	--	1
Bromoform	ND		ug/kg	2.4	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.30	--	1
Benzene	ND		ug/kg	0.30	--	1
Toluene	ND		ug/kg	0.61	--	1
Ethylbenzene	ND		ug/kg	0.61	--	1
Chloromethane	ND		ug/kg	2.4	--	1
Bromomethane	ND		ug/kg	1.2	--	1
Vinyl chloride	ND		ug/kg	0.61	--	1
Chloroethane	ND		ug/kg	1.2	--	1
1,1-Dichloroethene	ND		ug/kg	0.61	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.92	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatiles Organics by EPA 5035 Low - Westborough Lab</b>						
Trichloroethene	ND		ug/kg	0.30	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.2	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.2	--	1
Methyl tert butyl ether	ND		ug/kg	1.2	--	1
p/m-Xylene	ND		ug/kg	1.2	--	1
o-Xylene	ND		ug/kg	0.61	--	1
Xylenes, Total	ND		ug/kg	0.61	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.61	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.61	--	1
Dibromomethane	ND		ug/kg	1.2	--	1
1,4-Dichlorobutane	ND		ug/kg	6.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.2	--	1
Styrene	ND		ug/kg	0.61	--	1
Dichlorodifluoromethane	ND		ug/kg	6.1	--	1
Acetone	ND		ug/kg	15	--	1
Carbon disulfide	ND		ug/kg	6.1	--	1
2-Butanone	ND		ug/kg	6.1	--	1
Vinyl acetate	ND		ug/kg	6.1	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.1	--	1
2-Hexanone	ND		ug/kg	6.1	--	1
Ethyl methacrylate	ND		ug/kg	6.1	--	1
Acrylonitrile	ND		ug/kg	2.4	--	1
Bromochloromethane	ND		ug/kg	1.2	--	1
Tetrahydrofuran	ND		ug/kg	2.4	--	1
2,2-Dichloropropane	ND		ug/kg	1.2	--	1
1,2-Dibromoethane	ND		ug/kg	0.61	--	1
1,3-Dichloropropane	ND		ug/kg	1.2	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.30	--	1
Bromobenzene	ND		ug/kg	1.2	--	1
n-Butylbenzene	ND		ug/kg	0.61	--	1
sec-Butylbenzene	ND		ug/kg	0.61	--	1
tert-Butylbenzene	ND		ug/kg	1.2	--	1
o-Chlorotoluene	ND		ug/kg	1.2	--	1
p-Chlorotoluene	ND		ug/kg	1.2	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	1.8	--	1
Hexachlorobutadiene	ND		ug/kg	2.4	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.61	--	1
p-Isopropyltoluene	ND		ug/kg	0.61	--	1
Naphthalene	ND		ug/kg	2.4	--	1
n-Propylbenzene	ND		ug/kg	0.61	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.2	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.2	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.2	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.0	--	1
Ethyl ether	ND		ug/kg	1.2	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	100		70-130

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8260D  
 Analytical Date: 08/05/23 18:12  
 Analyst: JIC  
 Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by EPA 5035 Low - Westborough Lab</b>						
Methylene chloride	ND		ug/kg	3.2	--	1
1,1-Dichloroethane	ND		ug/kg	0.65	--	1
Chloroform	ND		ug/kg	0.98	--	1
Carbon tetrachloride	ND		ug/kg	0.65	--	1
1,2-Dichloropropane	ND		ug/kg	0.65	--	1
Dibromochloromethane	ND		ug/kg	0.65	--	1
1,1,2-Trichloroethane	ND		ug/kg	0.65	--	1
Tetrachloroethene	ND		ug/kg	0.32	--	1
Chlorobenzene	ND		ug/kg	0.32	--	1
Trichlorofluoromethane	ND		ug/kg	2.6	--	1
1,2-Dichloroethane	ND		ug/kg	0.65	--	1
1,1,1-Trichloroethane	ND		ug/kg	0.32	--	1
Bromodichloromethane	ND		ug/kg	0.32	--	1
trans-1,3-Dichloropropene	ND		ug/kg	0.65	--	1
cis-1,3-Dichloropropene	ND		ug/kg	0.32	--	1
1,3-Dichloropropene, Total	ND		ug/kg	0.32	--	1
1,1-Dichloropropene	ND		ug/kg	0.32	--	1
Bromoform	ND		ug/kg	2.6	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.32	--	1
Benzene	ND		ug/kg	0.32	--	1
Toluene	ND		ug/kg	0.65	--	1
Ethylbenzene	ND		ug/kg	0.65	--	1
Chloromethane	ND		ug/kg	2.6	--	1
Bromomethane	ND		ug/kg	1.3	--	1
Vinyl chloride	ND		ug/kg	0.65	--	1
Chloroethane	ND		ug/kg	1.3	--	1
1,1-Dichloroethene	ND		ug/kg	0.65	--	1
trans-1,2-Dichloroethene	ND		ug/kg	0.98	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatiles Organics by EPA 5035 Low - Westborough Lab</b>						
Trichloroethene	ND		ug/kg	0.32	--	1
1,2-Dichlorobenzene	ND		ug/kg	1.3	--	1
1,3-Dichlorobenzene	ND		ug/kg	1.3	--	1
1,4-Dichlorobenzene	ND		ug/kg	1.3	--	1
Methyl tert butyl ether	ND		ug/kg	1.3	--	1
p/m-Xylene	ND		ug/kg	1.3	--	1
o-Xylene	ND		ug/kg	0.65	--	1
Xylenes, Total	ND		ug/kg	0.65	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.65	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.65	--	1
Dibromomethane	ND		ug/kg	1.3	--	1
1,4-Dichlorobutane	ND		ug/kg	6.5	--	1
1,2,3-Trichloropropane	ND		ug/kg	1.3	--	1
Styrene	ND		ug/kg	0.65	--	1
Dichlorodifluoromethane	ND		ug/kg	6.5	--	1
Acetone	ND		ug/kg	16	--	1
Carbon disulfide	ND		ug/kg	6.5	--	1
2-Butanone	ND		ug/kg	6.5	--	1
Vinyl acetate	ND		ug/kg	6.5	--	1
4-Methyl-2-pentanone	ND		ug/kg	6.5	--	1
2-Hexanone	ND		ug/kg	6.5	--	1
Ethyl methacrylate	ND		ug/kg	6.5	--	1
Acrylonitrile	ND		ug/kg	2.6	--	1
Bromochloromethane	ND		ug/kg	1.3	--	1
Tetrahydrofuran	ND		ug/kg	2.6	--	1
2,2-Dichloropropane	ND		ug/kg	1.3	--	1
1,2-Dibromoethane	ND		ug/kg	0.65	--	1
1,3-Dichloropropane	ND		ug/kg	1.3	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.32	--	1
Bromobenzene	ND		ug/kg	1.3	--	1
n-Butylbenzene	ND		ug/kg	0.65	--	1
sec-Butylbenzene	ND		ug/kg	0.65	--	1
tert-Butylbenzene	ND		ug/kg	1.3	--	1
o-Chlorotoluene	ND		ug/kg	1.3	--	1
p-Chlorotoluene	ND		ug/kg	1.3	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.0	--	1
Hexachlorobutadiene	ND		ug/kg	2.6	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Isopropylbenzene	ND		ug/kg	0.65	--	1
p-Isopropyltoluene	ND		ug/kg	0.65	--	1
Naphthalene	ND		ug/kg	2.6	--	1
n-Propylbenzene	ND		ug/kg	0.65	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.3	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.3	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.3	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.3	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.2	--	1
Ethyl ether	ND		ug/kg	1.3	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	100		70-130

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D  
Analytical Date: 08/05/23 10:50  
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,03-06 Batch: WG1812726-5					
Methylene chloride	ND		ug/kg	5.0	--
1,1-Dichloroethane	ND		ug/kg	1.0	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	1.0	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.0	--
Tetrachloroethene	ND		ug/kg	0.50	--
Chlorobenzene	ND		ug/kg	0.50	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	0.50	--
Bromodichloromethane	ND		ug/kg	0.50	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	0.50	--
1,3-Dichloropropene, Total	ND		ug/kg	0.50	--
1,1-Dichloropropene	ND		ug/kg	0.50	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	--
Benzene	ND		ug/kg	0.50	--
Toluene	ND		ug/kg	1.0	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	1.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	0.50	--

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D  
Analytical Date: 08/05/23 10:50  
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,03-06 Batch: WG1812726-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	--
1,3-Dichlorobenzene	ND		ug/kg	2.0	--
1,4-Dichlorobenzene	ND		ug/kg	2.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	1.0	--
Xylenes, Total	ND		ug/kg	1.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	2.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	2.0	--
Styrene	ND		ug/kg	1.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	25	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
Vinyl acetate	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	2.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	2.0	--
1,2-Dibromoethane	ND		ug/kg	1.0	--
1,3-Dichloropropane	ND		ug/kg	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	--
Bromobenzene	ND		ug/kg	2.0	--

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D  
Analytical Date: 08/05/23 10:50  
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,03-06 Batch: WG1812726-5					
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	2.0	--
o-Chlorotoluene	ND		ug/kg	2.0	--
p-Chlorotoluene	ND		ug/kg	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Ethyl ether	ND		ug/kg	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	96		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1812726-3 WG1812726-4								
Methylene chloride	88		87		70-130	1		30
1,1-Dichloroethane	84		84		70-130	0		30
Chloroform	85		84		70-130	1		30
Carbon tetrachloride	74		72		70-130	3		30
1,2-Dichloropropane	89		87		70-130	2		30
Dibromochloromethane	84		84		70-130	0		30
1,1,2-Trichloroethane	86		86		70-130	0		30
Tetrachloroethene	79		76		70-130	4		30
Chlorobenzene	86		84		70-130	2		30
Trichlorofluoromethane	77		74		70-139	4		30
1,2-Dichloroethane	86		86		70-130	0		30
1,1,1-Trichloroethane	82		79		70-130	4		30
Bromodichloromethane	86		86		70-130	0		30
trans-1,3-Dichloropropene	88		88		70-130	0		30
cis-1,3-Dichloropropene	88		89		70-130	1		30
1,1-Dichloropropene	83		81		70-130	2		30
Bromoform	77		76		70-130	1		30
1,1,2,2-Tetrachloroethane	79		82		70-130	4		30
Benzene	86		84		70-130	2		30
Toluene	81		78		70-130	4		30
Ethylbenzene	85		82		70-130	4		30
Chloromethane	81		79		52-130	3		30
Bromomethane	93		91		57-147	2		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1812726-3 WG1812726-4								
Vinyl chloride	82		80		67-130	2		30
Chloroethane	88		86		50-151	2		30
1,1-Dichloroethene	76		74		65-135	3		30
trans-1,2-Dichloroethene	82		80		70-130	2		30
Trichloroethene	88		82		70-130	7		30
1,2-Dichlorobenzene	86		85		70-130	1		30
1,3-Dichlorobenzene	86		83		70-130	4		30
1,4-Dichlorobenzene	84		83		70-130	1		30
Methyl tert butyl ether	83		87		66-130	5		30
p/m-Xylene	87		84		70-130	4		30
o-Xylene	88		85		70-130	3		30
cis-1,2-Dichloroethene	84		84		70-130	0		30
Dibromomethane	84		85		70-130	1		30
1,4-Dichlorobutane	84		83		70-130	1		30
1,2,3-Trichloropropane	81		82		68-130	1		30
Styrene	87		87		70-130	0		30
Dichlorodifluoromethane	67		64		30-146	5		30
Acetone	74		78		54-140	5		30
Carbon disulfide	73		71		59-130	3		30
2-Butanone	80		81		70-130	1		30
Vinyl acetate	68	Q	79		70-130	15		30
4-Methyl-2-pentanone	78		81		70-130	4		30
2-Hexanone	73		76		70-130	4		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1812726-3 WG1812726-4								
Ethyl methacrylate	84		87		70-130	4		30
Acrylonitrile	82		85		70-130	4		30
Bromochloromethane	86		86		70-130	0		30
Tetrahydrofuran	70		77		66-130	10		30
2,2-Dichloropropane	81		79		70-130	3		30
1,2-Dibromoethane	86		86		70-130	0		30
1,3-Dichloropropane	86		86		69-130	0		30
1,1,1,2-Tetrachloroethane	85		85		70-130	0		30
Bromobenzene	85		83		70-130	2		30
n-Butylbenzene	85		82		70-130	4		30
sec-Butylbenzene	82		79		70-130	4		30
tert-Butylbenzene	83		79		70-130	5		30
o-Chlorotoluene	87		82		70-130	6		30
p-Chlorotoluene	87		85		70-130	2		30
1,2-Dibromo-3-chloropropane	74		75		68-130	1		30
Hexachlorobutadiene	71		67		67-130	6		30
Isopropylbenzene	84		81		70-130	4		30
p-Isopropyltoluene	84		81		70-130	4		30
Naphthalene	81		82		70-130	1		30
n-Propylbenzene	86		82		70-130	5		30
1,2,3-Trichlorobenzene	81		81		70-130	0		30
1,2,4-Trichlorobenzene	83		83		70-130	0		30
1,3,5-Trimethylbenzene	86		83		70-130	4		30

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1812726-3 WG1812726-4								
1,2,4-Trimethylbenzene	87		84		70-130	4		30
trans-1,4-Dichloro-2-butene	84		86		70-130	2		30
Ethyl ether	84		86		67-130	2		30

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichloroethane-d4	99		98		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	100		99		70-130
Dibromofluoromethane	100		101		70-130



# SEMIVOLATILES

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-02  
 Client ID: FB-XXX-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 09:43  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Water  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 08/12/23 01:16  
 Analyst: AC

Extraction Method: ALPHA 23528  
 Extraction Date: 08/01/23 18:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b>						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.80	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.80	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	--	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/l	1.80	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	18.0	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.80	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	3.61	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-02  
 Client ID: FB-XXX-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 09:43  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.61	--	1
PFAS, Total (6)	ND		ng/l	1.80	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	<b>148</b>	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	146		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	148		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)	47		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	57		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	79		22-136
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	71		10-165
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	62		10-206

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E  
 Analytical Date: 08/08/23 16:53  
 Analyst: MG  
 Percent Solids: 91%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 21:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND		ug/kg	600	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	--	1
1,2-Dichlorobenzene	ND		ug/kg	180	--	1
1,3-Dichlorobenzene	ND		ug/kg	180	--	1
1,4-Dichlorobenzene	ND		ug/kg	180	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	--	1
2,4-Dinitrotoluene	ND		ug/kg	180	--	1
2,6-Dinitrotoluene	ND		ug/kg	180	--	1
Azobenzene	ND		ug/kg	180	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	--	1
Hexachlorocyclopentadiene	ND		ug/kg	520	--	1
Isophorone	ND		ug/kg	160	--	1
Nitrobenzene	ND		ug/kg	160	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	--	1
Butyl benzyl phthalate	ND		ug/kg	180	--	1
Di-n-butylphthalate	ND		ug/kg	180	--	1
Di-n-octylphthalate	ND		ug/kg	180	--	1
Diethyl phthalate	ND		ug/kg	180	--	1
Dimethyl phthalate	ND		ug/kg	180	--	1
Biphenyl	ND		ug/kg	410	--	1
Aniline	ND		ug/kg	220	--	1
4-Chloroaniline	ND		ug/kg	180	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
2-Nitroaniline	ND		ug/kg	180	--	1
3-Nitroaniline	ND		ug/kg	180	--	1
4-Nitroaniline	ND		ug/kg	180	--	1
Dibenzofuran	ND		ug/kg	180	--	1
n-Nitrosodimethylamine	ND		ug/kg	360	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
p-Chloro-m-cresol	ND		ug/kg	180	--	1
2-Chlorophenol	ND		ug/kg	180	--	1
2,4-Dichlorophenol	ND		ug/kg	160	--	1
2,4-Dimethylphenol	ND		ug/kg	180	--	1
2-Nitrophenol	ND		ug/kg	390	--	1
4-Nitrophenol	ND		ug/kg	250	--	1
2,4-Dinitrophenol	ND		ug/kg	870	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	470	--	1
Phenol	ND		ug/kg	180	--	1
2-Methylphenol	ND		ug/kg	180	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	--	1
2,4,5-Trichlorophenol	ND		ug/kg	180	--	1
Benzoic Acid	ND		ug/kg	590	--	1
Benzyl Alcohol	ND		ug/kg	180	--	1
Carbazole	ND		ug/kg	180	--	1
Pyridine	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	103		25-120
Phenol-d6	104		10-120
Nitrobenzene-d5	112		23-120
2-Fluorobiphenyl	94		30-120
2,4,6-Tribromophenol	135		10-136
4-Terphenyl-d14	95		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E-SIM  
 Analytical Date: 08/08/23 12:10  
 Analyst: DV  
 Percent Solids: 91%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 22:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	7.3	--	1
2-Chloronaphthalene	ND		ug/kg	7.3	--	1
Fluoranthene	82		ug/kg	7.3	--	1
Hexachlorobutadiene	ND		ug/kg	7.3	--	1
Naphthalene	ND		ug/kg	7.3	--	1
Benzo(a)anthracene	49		ug/kg	7.3	--	1
Benzo(a)pyrene	52		ug/kg	7.3	--	1
Benzo(b)fluoranthene	64		ug/kg	7.3	--	1
Benzo(k)fluoranthene	20		ug/kg	7.3	--	1
Chrysene	45		ug/kg	7.3	--	1
Acenaphthylene	11		ug/kg	7.3	--	1
Anthracene	8.0		ug/kg	7.3	--	1
Benzo(ghi)perylene	33		ug/kg	7.3	--	1
Fluorene	ND		ug/kg	7.3	--	1
Phenanthrene	26		ug/kg	7.3	--	1
Dibenzo(a,h)anthracene	8.4		ug/kg	7.3	--	1
Indeno(1,2,3-cd)Pyrene	40		ug/kg	7.3	--	1
Pyrene	79		ug/kg	7.3	--	1
1-Methylnaphthalene	ND		ug/kg	7.3	--	1
2-Methylnaphthalene	ND		ug/kg	7.3	--	1
Pentachlorophenol	ND		ug/kg	29	--	1
Hexachlorobenzene	ND		ug/kg	7.3	--	1
Hexachloroethane	ND		ug/kg	7.3	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		25-120
Phenol-d6	85		10-120
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	53		10-136
4-Terphenyl-d14	84		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Soil  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 08/03/23 20:30  
 Analyst: RS  
 Percent Solids: 91%

Extraction Method: ALPHA 23528  
 Extraction Date: 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b>						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.521	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.521	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.260	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.04	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.521	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.04	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.260	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.260	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.260	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.521	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.521	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.260	--	1
Perfluorooctanesulfonic Acid (PFOS)	1.05		ng/g	0.260	--	1
Perfluorodecanoic Acid (PFDA)	0.271		ng/g	0.260	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.521	--	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/g	1.04	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.521	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.521	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.521	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.521	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.521	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.521	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.521	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.521	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/g	2.60	--	1
4,8-Dioxo-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	1.04	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/g	2.60	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/g	2.60	--	1
PFAS, Total (6)	1.32		ng/g	0.260	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	57		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	79		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	69		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	54		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	62		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		24-159
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	72		10-203
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	61		10-145

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E  
 Analytical Date: 08/08/23 17:17  
 Analyst: MG  
 Percent Solids: 90%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 21:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND		ug/kg	590	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	--	1
1,2-Dichlorobenzene	ND		ug/kg	180	--	1
1,3-Dichlorobenzene	ND		ug/kg	180	--	1
1,4-Dichlorobenzene	ND		ug/kg	180	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	--	1
2,4-Dinitrotoluene	ND		ug/kg	180	--	1
2,6-Dinitrotoluene	ND		ug/kg	180	--	1
Azobenzene	ND		ug/kg	180	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	--	1
Hexachlorocyclopentadiene	ND		ug/kg	510	--	1
Isophorone	ND		ug/kg	160	--	1
Nitrobenzene	ND		ug/kg	160	--	1
NDPA/DPA	ND		ug/kg	140	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	--	1
Butyl benzyl phthalate	ND		ug/kg	180	--	1
Di-n-butylphthalate	ND		ug/kg	180	--	1
Di-n-octylphthalate	ND		ug/kg	180	--	1
Diethyl phthalate	ND		ug/kg	180	--	1
Dimethyl phthalate	ND		ug/kg	180	--	1
Biphenyl	ND		ug/kg	410	--	1
Aniline	ND		ug/kg	220	--	1
4-Chloroaniline	ND		ug/kg	180	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2-Nitroaniline	ND		ug/kg	180	--	1
3-Nitroaniline	ND		ug/kg	180	--	1
4-Nitroaniline	ND		ug/kg	180	--	1
Dibenzofuran	ND		ug/kg	180	--	1
n-Nitrosodimethylamine	ND		ug/kg	360	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
p-Chloro-m-cresol	ND		ug/kg	180	--	1
2-Chlorophenol	ND		ug/kg	180	--	1
2,4-Dichlorophenol	ND		ug/kg	160	--	1
2,4-Dimethylphenol	ND		ug/kg	180	--	1
2-Nitrophenol	ND		ug/kg	390	--	1
4-Nitrophenol	ND		ug/kg	250	--	1
2,4-Dinitrophenol	ND		ug/kg	860	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	470	--	1
Phenol	ND		ug/kg	180	--	1
2-Methylphenol	ND		ug/kg	180	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	--	1
2,4,5-Trichlorophenol	ND		ug/kg	180	--	1
Benzoic Acid	ND		ug/kg	580	--	1
Benzyl Alcohol	ND		ug/kg	180	--	1
Carbazole	ND		ug/kg	180	--	1
Pyridine	ND		ug/kg	190	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	100		25-120
Phenol-d6	99		10-120
Nitrobenzene-d5	106		23-120
2-Fluorobiphenyl	89		30-120
2,4,6-Tribromophenol	127		10-136
4-Terphenyl-d14	93		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E-SIM  
 Analytical Date: 08/08/23 12:27  
 Analyst: DV  
 Percent Solids: 90%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 22:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	7.2	--	1
2-Chloronaphthalene	ND		ug/kg	7.2	--	1
Fluoranthene	110		ug/kg	7.2	--	1
Hexachlorobutadiene	ND		ug/kg	7.2	--	1
Naphthalene	ND		ug/kg	7.2	--	1
Benzo(a)anthracene	60		ug/kg	7.2	--	1
Benzo(a)pyrene	64		ug/kg	7.2	--	1
Benzo(b)fluoranthene	75		ug/kg	7.2	--	1
Benzo(k)fluoranthene	25		ug/kg	7.2	--	1
Chrysene	54		ug/kg	7.2	--	1
Acenaphthylene	15		ug/kg	7.2	--	1
Anthracene	12		ug/kg	7.2	--	1
Benzo(ghi)perylene	34		ug/kg	7.2	--	1
Fluorene	ND		ug/kg	7.2	--	1
Phenanthrene	41		ug/kg	7.2	--	1
Dibenzo(a,h)anthracene	9.4		ug/kg	7.2	--	1
Indeno(1,2,3-cd)Pyrene	43		ug/kg	7.2	--	1
Pyrene	100		ug/kg	7.2	--	1
1-Methylnaphthalene	ND		ug/kg	7.2	--	1
2-Methylnaphthalene	ND		ug/kg	7.2	--	1
Pentachlorophenol	ND		ug/kg	29	--	1
Hexachlorobenzene	ND		ug/kg	7.2	--	1
Hexachloroethane	ND		ug/kg	7.2	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	50		10-136
4-Terphenyl-d14	79		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Soil  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 08/03/23 20:47  
 Analyst: RS  
 Percent Solids: 90%

Extraction Method: ALPHA 23528  
 Extraction Date: 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b>						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.530	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.530	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.265	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.06	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.530	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.06	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.265	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.265	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.265	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.530	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.530	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.265	--	1
Perfluorooctanesulfonic Acid (PFOS)	0.970		ng/g	0.265	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.265	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.530	--	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/g	1.06	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.530	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.530	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.530	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.530	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.530	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.530	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.530	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.530	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/g	2.65	--	1
4,8-Dioxo-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	1.06	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/g	2.65	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/g	2.65	--	1
PFAS, Total (6)	0.970		ng/g	0.265	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	73		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	70		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	127		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	90		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	67		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	56		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	96		24-159
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	93		10-203
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	88		10-145

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E  
 Analytical Date: 08/08/23 17:42  
 Analyst: MG  
 Percent Solids: 88%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 21:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND		ug/kg	620	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	--	1
1,2-Dichlorobenzene	ND		ug/kg	190	--	1
1,3-Dichlorobenzene	ND		ug/kg	190	--	1
1,4-Dichlorobenzene	ND		ug/kg	190	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	--	1
2,4-Dinitrotoluene	ND		ug/kg	190	--	1
2,6-Dinitrotoluene	ND		ug/kg	190	--	1
Azobenzene	ND		ug/kg	190	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	--	1
Hexachlorocyclopentadiene	ND		ug/kg	530	--	1
Isophorone	ND		ug/kg	170	--	1
Nitrobenzene	ND		ug/kg	170	--	1
NDPA/DPA	ND		ug/kg	150	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	--	1
Butyl benzyl phthalate	ND		ug/kg	190	--	1
Di-n-butylphthalate	ND		ug/kg	190	--	1
Di-n-octylphthalate	ND		ug/kg	190	--	1
Diethyl phthalate	ND		ug/kg	190	--	1
Dimethyl phthalate	ND		ug/kg	190	--	1
Biphenyl	ND		ug/kg	430	--	1
Aniline	ND		ug/kg	220	--	1
4-Chloroaniline	ND		ug/kg	190	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
2-Nitroaniline	ND		ug/kg	190	--	1
3-Nitroaniline	ND		ug/kg	190	--	1
4-Nitroaniline	ND		ug/kg	190	--	1
Dibenzofuran	ND		ug/kg	190	--	1
n-Nitrosodimethylamine	ND		ug/kg	370	--	1
2,4,6-Trichlorophenol	ND		ug/kg	110	--	1
p-Chloro-m-cresol	ND		ug/kg	190	--	1
2-Chlorophenol	ND		ug/kg	190	--	1
2,4-Dichlorophenol	ND		ug/kg	170	--	1
2,4-Dimethylphenol	ND		ug/kg	190	--	1
2-Nitrophenol	ND		ug/kg	400	--	1
4-Nitrophenol	ND		ug/kg	260	--	1
2,4-Dinitrophenol	ND		ug/kg	900	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	--	1
Phenol	ND		ug/kg	190	--	1
2-Methylphenol	ND		ug/kg	190	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	--	1
2,4,5-Trichlorophenol	ND		ug/kg	190	--	1
Benzoic Acid	ND		ug/kg	600	--	1
Benzyl Alcohol	ND		ug/kg	190	--	1
Carbazole	ND		ug/kg	190	--	1
Pyridine	ND		ug/kg	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	100		25-120
Phenol-d6	98		10-120
Nitrobenzene-d5	105		23-120
2-Fluorobiphenyl	89		30-120
2,4,6-Tribromophenol	132		10-136
4-Terphenyl-d14	93		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E-SIM  
 Analytical Date: 08/08/23 12:43  
 Analyst: DV  
 Percent Solids: 88%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 22:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	12		ug/kg	7.5	--	1
2-Chloronaphthalene	ND		ug/kg	7.5	--	1
Fluoranthene	200		ug/kg	7.5	--	1
Hexachlorobutadiene	ND		ug/kg	7.5	--	1
Naphthalene	11		ug/kg	7.5	--	1
Benzo(a)anthracene	72		ug/kg	7.5	--	1
Benzo(a)pyrene	83		ug/kg	7.5	--	1
Benzo(b)fluoranthene	98		ug/kg	7.5	--	1
Benzo(k)fluoranthene	35		ug/kg	7.5	--	1
Chrysene	79		ug/kg	7.5	--	1
Acenaphthylene	ND		ug/kg	7.5	--	1
Anthracene	16		ug/kg	7.5	--	1
Benzo(ghi)perylene	45		ug/kg	7.5	--	1
Fluorene	12		ug/kg	7.5	--	1
Phenanthrene	130		ug/kg	7.5	--	1
Dibenzo(a,h)anthracene	12		ug/kg	7.5	--	1
Indeno(1,2,3-cd)Pyrene	59		ug/kg	7.5	--	1
Pyrene	170		ug/kg	7.5	--	1
1-Methylnaphthalene	ND		ug/kg	7.5	--	1
2-Methylnaphthalene	ND		ug/kg	7.5	--	1
Pentachlorophenol	ND		ug/kg	30	--	1
Hexachlorobenzene	ND		ug/kg	7.5	--	1
Hexachloroethane	ND		ug/kg	7.5	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		25-120
Phenol-d6	77		10-120
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	47		10-136
4-Terphenyl-d14	79		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Soil  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 08/03/23 21:03  
 Analyst: RS  
 Percent Solids: 88%

Extraction Method: ALPHA 23528  
 Extraction Date: 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b>						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.513	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.513	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.256	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.03	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.513	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.03	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.256	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.256	--	1
Perfluorooctanoic Acid (PFOA)	0.277		ng/g	0.256	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.513	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.513	--	1
Perfluorononanoic Acid (PFNA)	0.292		ng/g	0.256	--	1
Perfluorooctanesulfonic Acid (PFOS)	1.79		ng/g	0.256	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.256	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.513	--	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/g	1.03	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.513	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.513	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.513	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.513	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.513	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.513	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.513	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.513	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/g	2.56	--	1
4,8-Dioxo-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	1.03	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/g	2.56	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/g	2.56	--	1
PFAS, Total (6)	2.36		ng/g	0.256	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	69		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	68		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	70	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	52		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	75	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	63		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	77		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	52		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	62		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	67		24-159
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	66		10-203
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	55		10-145

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E  
 Analytical Date: 08/08/23 18:07  
 Analyst: MG  
 Percent Solids: 81%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 21:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND		ug/kg	670	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorocyclopentadiene	ND		ug/kg	580	--	1
Isophorone	ND		ug/kg	180	--	1
Nitrobenzene	ND		ug/kg	180	--	1
NDPA/DPA	ND		ug/kg	160	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Biphenyl	ND		ug/kg	460	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
2-Nitroaniline	ND		ug/kg	200	--	1
3-Nitroaniline	ND		ug/kg	200	--	1
4-Nitroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
n-Nitrosodimethylamine	ND		ug/kg	410	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
p-Chloro-m-cresol	ND		ug/kg	200	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	440	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	980	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	530	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1
Benzoic Acid	ND		ug/kg	660	--	1
Benzyl Alcohol	ND		ug/kg	200	--	1
Carbazole	270		ug/kg	200	--	1
Pyridine	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	94		25-120
Phenol-d6	94		10-120
Nitrobenzene-d5	102		23-120
2-Fluorobiphenyl	89		30-120
2,4,6-Tribromophenol	129		10-136
4-Terphenyl-d14	88		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E-SIM  
 Analytical Date: 08/08/23 13:00  
 Analyst: DV  
 Percent Solids: 81%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 22:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	220		ug/kg	8.2	--	1
2-Chloronaphthalene	ND		ug/kg	8.2	--	1
Fluoranthene	2100	E	ug/kg	8.2	--	1
Hexachlorobutadiene	ND		ug/kg	8.2	--	1
Naphthalene	75		ug/kg	8.2	--	1
Benzo(a)anthracene	980	E	ug/kg	8.2	--	1
Benzo(a)pyrene	890	E	ug/kg	8.2	--	1
Benzo(b)fluoranthene	1100	E	ug/kg	8.2	--	1
Benzo(k)fluoranthene	310		ug/kg	8.2	--	1
Chrysene	850	E	ug/kg	8.2	--	1
Acenaphthylene	13		ug/kg	8.2	--	1
Anthracene	380		ug/kg	8.2	--	1
Benzo(ghi)perylene	420		ug/kg	8.2	--	1
Fluorene	240		ug/kg	8.2	--	1
Phenanthrene	1600	E	ug/kg	8.2	--	1
Dibenzo(a,h)anthracene	120		ug/kg	8.2	--	1
Indeno(1,2,3-cd)Pyrene	580		ug/kg	8.2	--	1
Pyrene	1800	E	ug/kg	8.2	--	1
1-Methylnaphthalene	32		ug/kg	8.2	--	1
2-Methylnaphthalene	48		ug/kg	8.2	--	1
Pentachlorophenol	ND		ug/kg	33	--	1
Hexachlorobenzene	ND		ug/kg	8.2	--	1
Hexachloroethane	ND		ug/kg	8.2	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	73		30-120
2,4,6-Tribromophenol	46		10-136
4-Terphenyl-d14	73		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Soil  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 08/03/23 21:20  
 Analyst: RS  
 Percent Solids: 81%

Extraction Method: ALPHA 23528  
 Extraction Date: 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab</b>						
Perfluorobutanoic Acid (PFBA)	1.26		ng/g	0.574	--	1
Perfluoropentanoic Acid (PFPeA)	2.08		ng/g	0.574	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.287	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.15	--	1
Perfluorohexanoic Acid (PFHxA)	1.43		ng/g	0.574	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.15	--	1
Perfluoroheptanoic Acid (PFHpA)	0.700		ng/g	0.287	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.287	--	1
Perfluorooctanoic Acid (PFOA)	1.88		ng/g	0.287	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.769		ng/g	0.574	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.574	--	1
Perfluorononanoic Acid (PFNA)	1.93		ng/g	0.287	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.62		ng/g	0.287	--	1
Perfluorodecanoic Acid (PFDA)	3.69		ng/g	0.287	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.574	--	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/g	1.15	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.574	--	1
Perfluoroundecanoic Acid (PFUnA)	1.38		ng/g	0.574	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.574	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.574	--	1
Perfluorododecanoic Acid (PFDoA)	1.27		ng/g	0.574	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.574	--	1
Perfluorotetradecanoic Acid (PFTDA)	ND		ng/g	0.574	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/g	2.87	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	1.15	--	1
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/g	2.87	--	1
Perfluorooctadecanoic Acid (PFODA)	ND		ng/g	2.87	--	1

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
PFAS, Total (6)	10.8		ng/g	0.287	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	70		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)	84		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	80		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	73		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	87		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	89		24-159
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	88		10-203
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	85		10-145

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 134,LCMSMS-ID  
 Analytical Date: 08/09/23 07:54  
 Analyst: AC  
 Percent Solids: 81%

Extraction Method: ALPHA 23528  
 Extraction Date: 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.574	--	1
<b>Surrogate (Extracted Internal Standard)</b>			<b>% Recovery</b>	<b>Qualifier</b>	<b>Acceptance Criteria</b>	
Perfluoro[13C8]Octanesulfonamide (M8FOSA)			48		5-117	

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06 D  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil  
 Analytical Method: 1,8270E-SIM  
 Analytical Date: 08/10/23 13:12  
 Analyst: RP  
 Percent Solids: 81%

Extraction Method: EPA 3546  
 Extraction Date: 08/07/23 22:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Fluoranthene	3800		ug/kg	41	--	5
Benzo(a)anthracene	1700		ug/kg	41	--	5
Benzo(a)pyrene	1600		ug/kg	41	--	5
Benzo(b)fluoranthene	2200		ug/kg	41	--	5
Chrysene	1500		ug/kg	41	--	5
Phenanthrene	3000		ug/kg	41	--	5
Pyrene	3000		ug/kg	41	--	5

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

### Method Blank Analysis Batch Quality Control

**Analytical Method:** 134,LCMSMS-ID  
**Analytical Date:** 08/03/23 18:49  
**Analyst:** RS

**Extraction Method:** ALPHA 23528  
**Extraction Date:** 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03-06 Batch: WG1809987-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.500	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.500	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.250	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.500	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.250	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.250	--
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.250	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.500	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.500	--
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.250	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.250	--
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.250	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.500	--
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.500	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.500	--
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.500	--
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.500	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.500	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.500	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.500	--
PFAS, Total (6)	ND		ng/g	0.250	--

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 08/03/23 18:49  
Analyst: RS

Extraction Method: ALPHA 23528  
Extraction Date: 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03-06 Batch: WG1809987-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	137		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	<b>202</b>	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	120		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	134		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	75		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	113		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	97		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	14		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		24-159
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	94		10-203
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	74		10-145
1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)	131		50-150

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 08/09/23 07:42  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 07/31/23 17:09

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 03-06 Batch: WG1809987-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	53		5-117

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 08/02/23 21:06  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 08/01/23 18:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02 Batch: WG1810509-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	6.96		ng/l	2.00	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	20.0	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 134,LCMSMS-ID  
Analytical Date: 08/02/23 21:06  
Analyst: AC

Extraction Method: ALPHA 23528  
Extraction Date: 08/01/23 18:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02 Batch: WG1810509-1					
Perfluorohexadecanoic Acid (PFHxDA)	ND		ng/l	4.00	--
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	4.00	--
PFAS, Total (6)	ND		ng/l	2.00	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	102		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	110		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	106		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	72		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	83		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	91		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	55		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	97		22-136
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	96		10-165
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	94		10-206

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8270E  
Analytical Date: 08/08/23 14:00  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 08/07/23 21:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03-06 Batch: WG1812941-1					
Acenaphthene	ND		ug/kg	130	--
Benzidine	ND		ug/kg	540	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Chlorophenyl phenyl ether	ND		ug/kg	160	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachlorocyclopentadiene	ND		ug/kg	470	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
NDPA/DPA	ND		ug/kg	130	--
n-Nitrosodi-n-propylamine	ND		ug/kg	160	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8270E  
Analytical Date: 08/08/23 14:00  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 08/07/23 21:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03-06 Batch: WG1812941-1					
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Biphenyl	ND		ug/kg	380	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Nitroaniline	ND		ug/kg	160	--
3-Nitroaniline	ND		ug/kg	160	--
4-Nitroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
n-Nitrosodimethylamine	ND		ug/kg	330	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
p-Chloro-m-cresol	ND		ug/kg	160	--
2-Chlorophenol	ND		ug/kg	160	--

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8270E  
Analytical Date: 08/08/23 14:00  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 08/07/23 21:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03-06 Batch: WG1812941-1					
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
4,6-Dinitro-o-cresol	ND		ug/kg	430	--
Pentachlorophenol	ND		ug/kg	130	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Benzoic Acid	ND		ug/kg	540	--
Benzyl Alcohol	ND		ug/kg	160	--
Carbazole	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	90		25-120
Phenol-d6	88		10-120
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	81		30-120
2,4,6-Tribromophenol	115		10-136
4-Terphenyl-d14	88		18-120

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E-SIM  
Analytical Date: 08/08/23 11:21  
Analyst: DV

Extraction Method: EPA 3546  
Extraction Date: 08/07/23 22:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 03-06 Batch: WG1812945-1					
Acenaphthene	ND		ug/kg	6.6	--
2-Chloronaphthalene	ND		ug/kg	6.6	--
Fluoranthene	ND		ug/kg	6.6	--
Hexachlorobutadiene	ND		ug/kg	6.6	--
Naphthalene	ND		ug/kg	6.6	--
Benzo(a)anthracene	ND		ug/kg	6.6	--
Benzo(a)pyrene	ND		ug/kg	6.6	--
Benzo(b)fluoranthene	ND		ug/kg	6.6	--
Benzo(k)fluoranthene	ND		ug/kg	6.6	--
Chrysene	ND		ug/kg	6.6	--
Acenaphthylene	ND		ug/kg	6.6	--
Anthracene	ND		ug/kg	6.6	--
Benzo(ghi)perylene	ND		ug/kg	6.6	--
Fluorene	ND		ug/kg	6.6	--
Phenanthrene	ND		ug/kg	6.6	--
Dibenzo(a,h)anthracene	ND		ug/kg	6.6	--
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	6.6	--
Pyrene	ND		ug/kg	6.6	--
1-Methylnaphthalene	ND		ug/kg	6.6	--
2-Methylnaphthalene	ND		ug/kg	6.6	--
Pentachlorophenol	ND		ug/kg	26	--
Hexachlorobenzene	ND		ug/kg	6.6	--
Hexachloroethane	ND		ug/kg	6.6	--

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8270E-SIM  
Analytical Date: 08/08/23 11:21  
Analyst: DV

Extraction Method: EPA 3546  
Extraction Date: 08/07/23 22:04

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 03-06 Batch: WG1812945-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		25-120
Phenol-d6	67		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	66		30-120
2,4,6-Tribromophenol	41		10-136
4-Terphenyl-d14	62		18-120

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 Batch: WG1809987-2								
Perfluorobutanoic Acid (PFBA)	123		-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	123		-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	121		-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	122		-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	124		-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	129	Q	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	103		-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	119		-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	118		-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	134		-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	137	Q	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	113		-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	115		-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	80		-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	120		-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	110		-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	122		-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	131		-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	124		-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	115		-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	114		-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	130		-		69-135	-		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery		RPD	
	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 Batch: WG1809987-2								
Perfluorotridecanoic Acid (PFTrDA)	146	Q	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	130		-		69-133	-		30

Surrogate (Extracted Internal Standard)	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
Perfluoro[13C4]Butanoic Acid (MPFBA)	70				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	65				58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108				74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	82				14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	83				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95				78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	72				20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	66	Q			72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	73	Q			79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73	Q			75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	58				19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	63				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	73				61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13				5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69				34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	81				24-159
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	84				10-203
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	81				10-145
1H,1H,2H,2H-Perfluorododecane Sulfonate (M2D4-10:2FTS)	75				50-150

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 Batch: WG1809987-2								
Perfluorooctanesulfonamide (FOSA)	97		-		67-137	-		30

<b>Surrogate (Extracted Internal Standard)</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	44				5-117

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS	Qual	LCS	Qual	%Recovery	RPD	Qual	RPD
	%Recovery		%Recovery		Limits			Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 Batch: WG1810509-2								
Perfluorobutanoic Acid (PFBA)	100		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	104		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	95		-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	114		-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	98		-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	111		-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	101		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	108		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	96		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	144		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	103		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	108		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	101		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	101		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	114		-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	117		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	110		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	118		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	98		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	110		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	101		-		67-153	-		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 Batch: WG1810509-2								
Perfluorotridecanoic Acid (PFTrDA)	111		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	90		-		59-182	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	120		-		57-162	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	93		-		69-143	-		30
Perfluorohexadecanoic Acid (PFHxDA)	92		-		40-167	-		30
Perfluorooctadecanoic Acid (PFODA)	29		-		10-119	-		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery		RPD	RPD	
	%Recovery	Qual	%Recovery	Qual	Limits	Qual		Limits	
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 Batch: WG1810509-2									

Surrogate (Extracted Internal Standard)	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
Perfluoro[13C4]Butanoic Acid (MPFBA)	104				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	115				70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	82				12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	97				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	104				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	97				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	102				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	114				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	79				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	59				5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	105				22-136
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	89				10-165
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	105				10-206

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 Batch: WG1812941-2 WG1812941-3								
Acenaphthene	83		84		31-137	1		50
Benzidine	51		69	Q	10-66	30		50
1,2,4-Trichlorobenzene	88		86		38-107	2		50
Hexachlorobenzene	97		100		40-140	3		50
Bis(2-chloroethyl)ether	87		84		40-140	4		50
2-Chloronaphthalene	89		91		40-140	2		50
1,2-Dichlorobenzene	84		79		40-140	6		50
1,3-Dichlorobenzene	81		78		40-140	4		50
1,4-Dichlorobenzene	84		80		28-104	5		50
3,3'-Dichlorobenzidine	69		82		40-140	17		50
2,4-Dinitrotoluene	106		112		40-132	6		50
2,6-Dinitrotoluene	110		114		40-140	4		50
Azobenzene	94		95		40-140	1		50
Fluoranthene	87		90		40-140	3		50
4-Chlorophenyl phenyl ether	93		94		40-140	1		50
4-Bromophenyl phenyl ether	93		95		40-140	2		50
Bis(2-chloroisopropyl)ether	54		52		40-140	4		50
Bis(2-chloroethoxy)methane	90		91		40-117	1		50
Hexachlorobutadiene	88		83		40-140	6		50
Hexachlorocyclopentadiene	142	Q	138		40-140	3		50
Hexachloroethane	84		78		40-140	7		50
Isophorone	89		89		40-140	0		50
Naphthalene	85		82		40-140	4		50

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 Batch: WG1812941-2 WG1812941-3								
Nitrobenzene	96		94		40-140	2		50
NDPA/DPA	92		95		36-157	3		50
n-Nitrosodi-n-propylamine	87		87		32-121	0		50
Bis(2-ethylhexyl)phthalate	102		105		40-140	3		50
Butyl benzyl phthalate	98		104		40-140	6		50
Di-n-butylphthalate	94		99		40-140	5		50
Di-n-octylphthalate	106		109		40-140	3		50
Diethyl phthalate	96		99		40-140	3		50
Dimethyl phthalate	92		94		40-140	2		50
Benzo(a)anthracene	90		92		40-140	2		50
Benzo(a)pyrene	102		102		40-140	0		50
Benzo(b)fluoranthene	95		98		40-140	3		50
Benzo(k)fluoranthene	93		93		40-140	0		50
Chrysene	94		94		40-140	0		50
Acenaphthylene	90		91		40-140	1		50
Anthracene	89		93		40-140	4		50
Benzo(ghi)perylene	94		94		40-140	0		50
Fluorene	88		92		40-140	4		50
Phenanthrene	86		89		40-140	3		50
Dibenzo(a,h)anthracene	96		96		40-140	0		50
Indeno(1,2,3-cd)pyrene	91		93		40-140	2		50
Pyrene	86		90		35-142	5		50
Biphenyl	79		80		37-127	1		50

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 Batch: WG1812941-2 WG1812941-3								
Aniline	74		81		40-140	9		50
4-Chloroaniline	73		78		40-140	7		50
1-Methylnaphthalene	89		88		26-130	1		50
2-Nitroaniline	121		122		47-134	1		50
3-Nitroaniline	98		111		26-129	12		50
4-Nitroaniline	112		118		41-125	5		50
Dibenzofuran	92		92		40-140	0		50
2-Methylnaphthalene	89		88		40-140	1		50
n-Nitrosodimethylamine	84		82		22-100	2		50
2,4,6-Trichlorophenol	106		108		30-130	2		50
p-Chloro-m-cresol	99		103		26-103	4		50
2-Chlorophenol	93		90		25-102	3		50
2,4-Dichlorophenol	98		100		30-130	2		50
2,4-Dimethylphenol	99		101		30-130	2		50
2-Nitrophenol	127		125		30-130	2		50
4-Nitrophenol	114		116	Q	11-114	2		50
2,4-Dinitrophenol	137	Q	144	Q	4-130	5		50
4,6-Dinitro-o-cresol	136	Q	142	Q	10-130	4		50
Pentachlorophenol	150	Q	154	Q	17-109	3		50
Phenol	98	Q	97	Q	26-90	1		50
2-Methylphenol	94		93		30-130.	1		50
3-Methylphenol/4-Methylphenol	103		101		30-130	2		50
2,4,5-Trichlorophenol	104		105		30-130	1		50

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03-06 Batch: WG1812941-2 WG1812941-3								
Benzoic Acid	35		37		10-110	6		50
Benzyl Alcohol	96		97		40-140	1		50
Carbazole	88		91		54-128	3		50
Pyridine	65		57		10-93	13		50

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
2-Fluorophenol	90		89		25-120
Phenol-d6	86		88		10-120
Nitrobenzene-d5	93		93		23-120
2-Fluorobiphenyl	80		82		30-120
2,4,6-Tribromophenol	113		116		10-136
4-Terphenyl-d14	83		88		18-120

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 Batch: WG1812945-2 WG1812945-3								
Acenaphthene	66		67		40-140	2		50
2-Chloronaphthalene	69		69		40-140	0		50
Fluoranthene	62		62		40-140	0		50
Hexachlorobutadiene	69		70		34-107	1		50
Naphthalene	67		68		40-140	1		50
Benzo(a)anthracene	71		72		40-140	1		50
Benzo(a)pyrene	75		76		40-140	1		50
Benzo(b)fluoranthene	66		64		40-140	3		50
Benzo(k)fluoranthene	65		69		40-140	6		50
Chrysene	62		64		40-140	3		50
Acenaphthylene	78		78		40-140	0		50
Anthracene	70		71		40-140	1		50
Benzo(ghi)perylene	67		69		40-140	3		50
Fluorene	67		68		40-140	1		50
Phenanthrene	64		65		40-140	2		50
Dibenzo(a,h)anthracene	74		75		40-140	1		50
Indeno(1,2,3-cd)Pyrene	92		95		40-140	3		50
Pyrene	61		61		35-142	0		50
1-Methylnaphthalene	68		68		40-140	0		50
2-Methylnaphthalene	72		73		40-140	1		50
Pentachlorophenol	70		73		17-109	4		50
Hexachlorobenzene	58		60		40-140	3		50
Hexachloroethane	73		74		29-106	1		50

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03-06 Batch: WG1812945-2 WG1812945-3								

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>
2-Fluorophenol	72		71		25-120
Phenol-d6	73		71		10-120
Nitrobenzene-d5	88		86		23-120
2-Fluorobiphenyl	72		70		30-120
2,4,6-Tribromophenol	45		44		10-136
4-Terphenyl-d14	65		63		18-120

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1809987-3 QC Sample: L2343337-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	146	178	122		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	ND	146	183	125		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	130	158	122		-	-		72-128	-		30
Perfluorohexanoic Acid (PFHxA)	ND	146	180	123		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	138	182	132	Q	-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	146	152	104		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	134	161	120		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	146	171	116		-	-		69-133	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	139	198	142	Q	-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	ND	146	162	111		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	136	164	121		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	ND	146	121F	83		-	-		69-133	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	141	163	116		-	-		69-125	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	146	199	136		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	141	135	96		-	-		59-134	-		30
Perfluorododecanoic Acid (PFDoA)	ND	146	197	135		-	-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	146	81.3	56	Q	-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	146	182	124		-	-		69-133	-		30

<i>Surrogate (Extracted Internal Standard)</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	61				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	67	Q			75-130

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1809987-3 QC Sample: L2343337-01 Client ID: MS Sample												

<i>Surrogate (Extracted Internal Standard)</i>	<i>MS</i>		<i>MSD</i>		<i>Acceptance Criteria</i>
	<i>% Recovery</i>	<i>Qualifier</i>	<i>% Recovery</i>	<i>Qualifier</i>	
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88				78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	44	Q			54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	2	Q			24-159
Perfluoro[13C4]Butanoic Acid (MPFBA)	68				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	63				58-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	67	Q			79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74	Q			75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	64	Q			72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98				74-139

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1810509-3 QC Sample: L2343510-02 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	ND	36.8	37.4	99		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	ND	36.8	38.2	104		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	32.6	30.2	92		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	34.5	38.9	113		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	ND	36.8	36.0	98		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	34.6	36.0	104		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	36.8	36.4	99		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	33.6	36.3	108		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	ND	36.8	34.0	92		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	35	39.1	112		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.1	37.4	107		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	ND	36.8	41.0	112		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	34.1	35.1	103		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	36.8	35.7	97		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	35.3	36.5	103		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	35.4	39.3	111		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	36.8	38.3	104		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	36.8	40.6	110		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	35.5	38.7	109		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	36.8	36.4F	99		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	36.8	38.5	105		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	36.8	38.7	105		-	-		67-153	-		30

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1810509-3 QC Sample: L2343510-02 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTTrDA)	ND	36.8	42.6	116		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTTA)	ND	36.8	33.2	90		-	-		59-182	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	358	414	115		-	-		57-162	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	34.8	31.0	89		-	-		69-143	-		30
Perfluorohexadecanoic Acid (PFHxDA)	ND	36.8	31.1	85		-	-		40-167	-		30
Perfluorooctadecanoic Acid (PFODA)	ND	36.8	13.7	37		-	-		10-119	-		30

<i>Surrogate (Extracted Internal Standard)</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	90				10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	68				12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79				14-147
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	79				10-165
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	94				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90				55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91				22-136
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	98				10-206

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>Qual</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Qual</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
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Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1810509-3 QC Sample: L2343510-02 Client ID: MS Sample

<b>Surrogate (Extracted Internal Standard)</b>	<b>MS % Recovery</b>	<b>MS Qualifier</b>	<b>MSD % Recovery</b>	<b>MSD Qualifier</b>	<b>Acceptance Criteria</b>
Perfluoro[13C4]Butanoic Acid (MPFBA)	91				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24				5-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98				70-131

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1809987-4 QC Sample: L2343337-03 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/g	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/g	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/g	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/g	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/g	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/g	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/g	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/g	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/g	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/g	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/g	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/g	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/g	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC		30
PFOA/PFOS, Total	ND	ND	ng/g	NC		30
PFAS, Total (5)	ND	ND	ng/g	NC		30
PFAS, Total (6)	ND	ND	ng/g	NC		30

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1809987-4 QC Sample: L2343337-03 Client ID: DUP Sample						

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	30	Q	28	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	29	Q	27	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	55	Q	50	Q	74-139
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	31	Q	27	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	40	Q	34	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	46	Q	41	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	35	Q	30	Q	75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	29	Q	23	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	35	Q	30	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	31	Q	25	Q	75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	29	Q	23	Q	61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	26	Q	17	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	7	Q	6	Q	24-159

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

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: WG1810509-4 QC Sample: L2343510-03 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:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

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: WG1810509-4 QC Sample: L2343510-03 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 (PFTTrDA)	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)	93		92		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		100		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		96		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	70		66		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	95		90		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		87		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		90		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94		91		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	60		57		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		83		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		89		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		86		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	71		69		10-162

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

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: WG1810509-4 QC Sample: L2343510-03 Client ID: DUP Sample						

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		67		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	89		85		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28		34		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		69		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		77		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		83		22-136
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	104		92		10-165
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	95		106		10-206

## METALS

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil  
 Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Arsenic, Total	6.10		mg/kg	0.422	--	1	08/04/23 11:45	08/15/23 22:54	EPA 3050B	1,6010D	MRC
Barium, Total	18.7		mg/kg	0.422	--	1	08/04/23 11:45	08/15/23 22:54	EPA 3050B	1,6010D	MRC
Cadmium, Total	ND		mg/kg	0.422	--	1	08/04/23 11:45	08/15/23 22:54	EPA 3050B	1,6010D	MRC
Chromium, Total	15.2		mg/kg	0.422	--	1	08/04/23 11:45	08/15/23 22:54	EPA 3050B	1,6010D	MRC
Lead, Total	14.4		mg/kg	2.11	--	1	08/04/23 11:45	08/15/23 22:54	EPA 3050B	1,6010D	MRC
Mercury, Total	ND		mg/kg	0.081	--	1	08/04/23 12:23	08/14/23 13:49	EPA 7471B	1,7471B	MJR
Selenium, Total	ND		mg/kg	0.843	--	1	08/04/23 11:45	08/15/23 22:54	EPA 3050B	1,6010D	MRC
Silver, Total	ND		mg/kg	0.211	--	1	08/04/23 11:45	08/15/23 22:54	EPA 3050B	1,6010D	MRC



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil  
 Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Arsenic, Total	5.01		mg/kg	0.432	--	1	08/04/23 11:45	08/15/23 22:45	EPA 3050B	1,6010D	MRC
Barium, Total	14.8		mg/kg	0.432	--	1	08/04/23 11:45	08/15/23 22:45	EPA 3050B	1,6010D	MRC
Cadmium, Total	ND		mg/kg	0.432	--	1	08/04/23 11:45	08/15/23 22:45	EPA 3050B	1,6010D	MRC
Chromium, Total	13.3		mg/kg	0.432	--	1	08/04/23 11:45	08/15/23 22:45	EPA 3050B	1,6010D	MRC
Lead, Total	11.6		mg/kg	2.16	--	1	08/04/23 11:45	08/15/23 22:45	EPA 3050B	1,6010D	MRC
Mercury, Total	ND		mg/kg	0.078	--	1	08/04/23 12:23	08/14/23 13:52	EPA 7471B	1,7471B	MJR
Selenium, Total	ND		mg/kg	0.864	--	1	08/04/23 11:45	08/15/23 22:45	EPA 3050B	1,6010D	MRC
Silver, Total	ND		mg/kg	0.216	--	1	08/04/23 11:45	08/15/23 22:45	EPA 3050B	1,6010D	MRC



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil  
 Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Arsenic, Total	6.10		mg/kg	0.433	--	1	08/04/23 11:45	08/15/23 22:48	EPA 3050B	1,6010D	MRC
Barium, Total	13.3		mg/kg	0.433	--	1	08/04/23 11:45	08/15/23 22:48	EPA 3050B	1,6010D	MRC
Cadmium, Total	ND		mg/kg	0.433	--	1	08/04/23 11:45	08/15/23 22:48	EPA 3050B	1,6010D	MRC
Chromium, Total	9.56		mg/kg	0.433	--	1	08/04/23 11:45	08/15/23 22:48	EPA 3050B	1,6010D	MRC
Lead, Total	11.9		mg/kg	2.17	--	1	08/04/23 11:45	08/15/23 22:48	EPA 3050B	1,6010D	MRC
Mercury, Total	ND		mg/kg	0.088	--	1	08/04/23 12:23	08/14/23 13:55	EPA 7471B	1,7471B	MJR
Selenium, Total	ND		mg/kg	0.867	--	1	08/04/23 11:45	08/15/23 22:48	EPA 3050B	1,6010D	MRC
Silver, Total	ND		mg/kg	0.217	--	1	08/04/23 11:45	08/15/23 22:48	EPA 3050B	1,6010D	MRC



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil  
 Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Arsenic, Total	7.16		mg/kg	0.473	--	1	08/04/23 11:45	08/15/23 22:51	EPA 3050B	1,6010D	MRC
Barium, Total	15.0		mg/kg	0.473	--	1	08/04/23 11:45	08/15/23 22:51	EPA 3050B	1,6010D	MRC
Cadmium, Total	ND		mg/kg	0.473	--	1	08/04/23 11:45	08/15/23 22:51	EPA 3050B	1,6010D	MRC
Chromium, Total	11.5		mg/kg	0.473	--	1	08/04/23 11:45	08/15/23 22:51	EPA 3050B	1,6010D	MRC
Lead, Total	39.0		mg/kg	2.36	--	1	08/04/23 11:45	08/15/23 22:51	EPA 3050B	1,6010D	MRC
Mercury, Total	ND		mg/kg	0.082	--	1	08/04/23 12:23	08/14/23 13:59	EPA 7471B	1,7471B	MJR
Selenium, Total	ND		mg/kg	0.946	--	1	08/04/23 11:45	08/15/23 22:51	EPA 3050B	1,6010D	MRC
Silver, Total	ND		mg/kg	0.236	--	1	08/04/23 11:45	08/15/23 22:51	EPA 3050B	1,6010D	MRC



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03-06 Batch: WG1810403-1									
Arsenic, Total	ND	mg/kg	0.400	--	1	08/04/23 11:45	08/15/23 22:38	1,6010D	MRC
Barium, Total	ND	mg/kg	0.400	--	1	08/04/23 11:45	08/15/23 22:38	1,6010D	MRC
Cadmium, Total	ND	mg/kg	0.400	--	1	08/04/23 11:45	08/15/23 22:38	1,6010D	MRC
Chromium, Total	ND	mg/kg	0.400	--	1	08/04/23 11:45	08/15/23 22:38	1,6010D	MRC
Lead, Total	ND	mg/kg	2.00	--	1	08/04/23 11:45	08/15/23 22:38	1,6010D	MRC
Selenium, Total	ND	mg/kg	0.800	--	1	08/04/23 11:45	08/15/23 22:38	1,6010D	MRC
Silver, Total	ND	mg/kg	0.200	--	1	08/04/23 11:45	08/15/23 22:38	1,6010D	MRC

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03-06 Batch: WG1810405-1									
Mercury, Total	ND	mg/kg	0.083	--	1	08/04/23 12:23	08/14/23 13:16	1,7471B	MJR

### Prep Information

Digestion Method: EPA 7471B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 03-06 Batch: WG1810403-2 SRM Lot Number: D119-540								
Arsenic, Total	99		-		83-117	-		
Barium, Total	92		-		82-118	-		
Cadmium, Total	92		-		82-117	-		
Chromium, Total	100		-		82-119	-		
Lead, Total	100		-		82-118	-		
Selenium, Total	104		-		79-121	-		
Silver, Total	97		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 03-06 Batch: WG1810405-2 SRM Lot Number: D119-540								
Mercury, Total	86		-		73-127	-		

### Matrix Spike Analysis Batch Quality Control

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-06    QC Batch ID: WG1810403-3    QC Sample: L2343616-03    Client ID: SL-DP1-X-475T												
Arsenic, Total	6.10	10.1	18.8	126	Q	-	-		75-125	-		20
Barium, Total	18.7	168	174	92		-	-		75-125	-		20
Cadmium, Total	ND	4.45	4.23	95		-	-		75-125	-		20
Chromium, Total	15.2	16.8	37.1	130	Q	-	-		75-125	-		20
Lead, Total	14.4	44.5	65.7	115		-	-		75-125	-		20
Selenium, Total	ND	10.1	10.6	105		-	-		75-125	-		20
Silver, Total	ND	4.2	4.62	110		-	-		75-125	-		20

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: CASTINE

Project Number: 231084.00

Lab Number: L2343616

Report Date: 08/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1810403-4 QC Sample: L2343616-03 Client ID: SL-DP1-X-475T						
Arsenic, Total	6.10	6.57	mg/kg	7		20
Barium, Total	18.7	19.8	mg/kg	6		20
Cadmium, Total	ND	ND	mg/kg	NC		20
Chromium, Total	15.2	20.4	mg/kg	29	Q	20
Lead, Total	14.4	16.4	mg/kg	13		20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-03  
 Client ID: SL-DP1-X-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 00:00  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	91.2		%	0.100	NA	1	-	07/29/23 13:44	121,2540G	ROI



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-04  
 Client ID: SL-FS01-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:08  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	89.8		%	0.100	NA	1	-	07/29/23 13:44	121,2540G	ROI



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-05  
 Client ID: SL-FS02-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:25  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	88.4		%	0.100	NA	1	-	07/29/23 13:44	121,2540G	ROI



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**SAMPLE RESULTS**

Lab ID: L2343616-06  
 Client ID: SL-FS03-A-475T  
 Sample Location: FIRE STATION

Date Collected: 07/27/23 10:40  
 Date Received: 07/28/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	81.2		%	0.100	NA	1	-	07/29/23 13:44	121,2540G	ROI



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 03-06 Batch: WG1809323-2										
Solids, Total	99.6		%	0.100	NA	1	-	07/29/23 13:44	121,2540G	ROI

**Project Name:** CASTINE  
**Project Number:** 231084.00

Serial\_No:08172309:59  
**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information**

<b>Cooler</b>	<b>Custody Seal</b>
A	Absent
B	Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2343616-01A	Vial MeOH preserved	B	NA		3.9	Y	Absent		8260HLW(14)
L2343616-01B	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-02A	Plastic 250ml unpreserved	A	NA		2.4	Y	Absent		A2-ME-537ISOTOPE-28+(14)
L2343616-03A	Vial MeOH preserved	B	NA		3.9	Y	Absent		8260HLW(14)
L2343616-03B	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-03C	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-03D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		ME-TS-2540(7)
L2343616-03E	Plastic 2oz unpreserved for TS	B	NA		3.9	Y	Absent		ME-TS-2540(7)
L2343616-03F	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.9	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L2343616-03G	Glass 120ml/4oz unpreserved	B	NA		3.9	Y	Absent		8270TCL(14),8270TCL-SIM(14)
L2343616-03H	Plastic 8oz unpreserved	A	NA		2.4	Y	Absent		A2-ME-537ISOTOPE-28+(14)
L2343616-04A	Vial MeOH preserved	B	NA		3.9	Y	Absent		8260HLW(14)
L2343616-04B	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-04C	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-04D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		ME-TS-2540(7)
L2343616-04E	Plastic 2oz unpreserved for TS	B	NA		3.9	Y	Absent		ME-TS-2540(7)
L2343616-04F	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.9	Y	Absent		BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),SE-TI(180),PB-TI(180),HG-T(28),CD-TI(180)
L2343616-04G	Glass 120ml/4oz unpreserved	B	NA		3.9	Y	Absent		8270TCL(14),8270TCL-SIM(14)
L2343616-04H	Plastic 8oz unpreserved	A	NA		2.4	Y	Absent		A2-ME-537ISOTOPE-28+(14)
L2343616-05A	Vial MeOH preserved	B	NA		3.9	Y	Absent		8260HLW(14)

\*Values in parentheses indicate holding time in days



**Project Name:** CASTINE  
**Project Number:** 231084.00

**Serial\_No:**08172309:59  
**Lab Number:** L2343616  
**Report Date:** 08/17/23

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2343616-05B	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-05C	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-05D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		ME-TS-2540(7)
L2343616-05E	Plastic 2oz unpreserved for TS	B	NA		3.9	Y	Absent		ME-TS-2540(7)
L2343616-05F	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.9	Y	Absent		BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),SE-TI(180),PB-TI(180),HG-T(28),CD-TI(180)
L2343616-05G	Glass 120ml/4oz unpreserved	B	NA		3.9	Y	Absent		8270TCL(14),8270TCL-SIM(14)
L2343616-05H	Plastic 8oz unpreserved	A	NA		2.4	Y	Absent		A2-ME-537ISOTOPE-28+(14)
L2343616-06A	Vial MeOH preserved	B	NA		3.9	Y	Absent		8260HLW(14)
L2343616-06B	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-06C	Vial water preserved	B	NA		3.9	Y	Absent	28-JUL-23 22:18	8260HLW(14)
L2343616-06D	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		ME-TS-2540(7)
L2343616-06E	Plastic 2oz unpreserved for TS	B	NA		3.9	Y	Absent		ME-TS-2540(7)
L2343616-06F	Metals Only-Glass 60mL/2oz unpreserved	B	NA		3.9	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),SE-TI(180),PB-TI(180),HG-T(28),CD-TI(180)
L2343616-06G	Glass 120ml/4oz unpreserved	B	NA		3.9	Y	Absent		8270TCL(14),8270TCL-SIM(14)
L2343616-06H	Plastic 8oz unpreserved	A	NA		2.4	Y	Absent		A2-ME-537ISOTOPE-28+(14)

**Project Name:** CASTINE  
**Project Number:** 231084.00

Serial\_No:08172309:59  
**Lab Number:** L2343616  
**Report Date:** 08/17/23

### PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
<b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>		
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
<b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>		
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
<b>FLUOROTELOMERS</b>		
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
<b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
<b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>		
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
<b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>		
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
<b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>		
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
<b>PERFLUOROETHER SULFONIC ACIDS (PFESAs)</b>		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEEESA	113507-82-7
<b>PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)</b>		
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:** CASTINE  
**Project Number:** 231084.00

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**Lab Number:** L2343616  
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### 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:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

## 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: Data Usability Report



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### Footnotes

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

### Terms

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

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

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

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

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

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

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

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

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

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

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

Report Format: Data Usability Report



**Project Name:** CASTINE  
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**Lab Number:** L2343616  
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**Data Qualifiers**

- ND** - Not detected at the reporting limit (RL) for the sample.
- 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:** CASTINE  
**Project Number:** 231084.00

**Lab Number:** L2343616  
**Report Date:** 08/17/23

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

## LIMITATION OF LIABILITIES

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 624.1:** m/p-xylene, o-xylene, Naphthalene

**EPA 625.1:** alpha-Terpineol

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

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

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**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 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

**SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables).

**Microbiology: SM9223B-Colilert-QT; Enterolert-QT, 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.

# CHAIN OF CUSTODY

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## Project Information

Project Name: **Castine**

Project Location: **Fire Station**

Project Number: **231084.00**

Project Manager: **Erik Clapp**

ALPHA Quote #::

### Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: \_\_\_\_\_ Time: \_\_\_\_\_

## Client Information

Client: **Sevee & Maher Engineers**

Address: **4 Blanchard Road**

Town: **Cumberland, Maine 04021**

Phone: **207-829-5016**

Fax:

Email: **emc@smemaine.com**

These samples have been Previously analyzed by ALPHA

Other Project Specific Requirements/Comment/Detection Limits:

Date Rec'd in Lab: **7/28/23** ALPHA Job #: **L2343616**

## Report Information Data deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverable

## Billing Information

Same as Client Info PO #: 231084.00

## Regulatory Requirements/Report Limits

State/Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

## ANALYSIS

Lab Use)	SAMPLE	Collection		Matrix	Sampler's Initials	T RCRA 8 60100/7471	Total solids	SVOCs 8270D-SIM	VOA-8260B-SOIL IN DI	VOC-8260B-SOIL IN MET	S37.1 Mod. w/ Isotope	Total solids	SAMPLE HANDLING				Total # BOTTLES
		Date	Time										Filtration	Preservation	Sample Specific Comments		
13616-01	BT-XXX-X-475T	7-27-23	—	Water	TKW				X	X			<input type="checkbox"/> Done	<input type="checkbox"/> Lab to do		3	
02	FB-XXX-X-475T		0943	Water							X		<input type="checkbox"/> Not Needed	<input type="checkbox"/> Lab to do		1	
03	SL-DP1-X-475T		—	Soil		X	X	X	X	X	X	X	<input type="checkbox"/> Lab to do	(Please Specify Below)		8	
04	SL-FS01-A-475T		1008	Soil		X	X	X	X	X	X	X				8	
05	SL-FS02-A-475T		1025	Soil		X	X	X	X	X	X	X				8	
06	SL-FS03-A-475T		1040	Soil		X	X	X	X	X	X	X				8	

Container Type	Preservative	Container Type	A	P	A	V	V	P	P	Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.
A = Summa Canister	A = No Pres., 4C	Preservative	A	A	A	W	F	A	A	
B = Bacteria cup	B = HCL	Relinquished	Date/Time		Received By:		Date/Time			
C = Cube	C = HNO3	<i>[Signature]</i>	7-28-23	11:29	<i>[Signature]</i>	7/28/23	11:29			
D = H2SO4	D = H2SO4	<i>[Signature]</i>	7/28/23	15:45	<i>[Signature]</i>	7/28/23	15:45			
E = NaOH	E = NaOH	<i>[Signature]</i>	7/28/23	21:00	<i>[Signature]</i>	7/28/23	21:00			
F = MeOH	F = MeOH									
G = NaHSO4	G = NaHSO4									
H = Na2S2O3	H = Na2S2O3									
I = Ascorbic Acid	I = Ascorbic Acid									
J = NH4Cl	J = NH4Cl									
K = ZN Acetate	K = ZN Acetate									