December 9, 2022
File No. 030157.000

Anthony F. Drouin, Administrator
Residuals Management Section - Wastewater Engineering Bureau
New Hampshire Department of Environmental Services
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

Re: Septage Residuals Characterization Sampling Results and Volume Estimate
Hopkinton Septage Lagoons
491 East Penacook Road
Hopkinton, New Hampshire 03229
NHDES Site No. 198705021, NHDES Permit #SEF-00-001

Dear Mr. Drouin:

On behalf of the Town of Hopkinton (Town), Nobis Engineering, Inc. d/b/a Nobis Group® (Nobis) is providing the laboratory results of the residuals sampling conducted in August 2022 and the volume estimate of residuals at the site, as required by the New Hampshire Department of Environmental Services (NHDES) for the Hopkinton Septage Lagoons (facility).

On August 15, 2022, representatives of NHDES and Nobis collected composite samples of septage and the surrounding berms that were reported by Town of Hopkinton personnel to be reworked residuals. Composite samples were also collected from the outer perimeter berms to determine whether they might also be comprised of residual material. NHDES representatives collected the residual material using a hand auger, and samples were placed in a stainless steel metal bucket and composited. Samples collected for analysis of per- and polyfluoroalkyl substances (PFAS) were submitted by NHDES to Alpha Analytical Laboratory of Mansfield Massachusetts. Samples collected for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, phosphorus, nitrate-nitrite, ammonia, and total Kjeldahl nitrogen (TKN) were submitted by Nobis to Eastern Analytical, Inc. of Concord, New Hampshire.

Nobis Group®
18 Chenell Drive
Concord, NH 03301
T (603) 224-4182

Laboratory results were compared with the NH Soil Remediation Standards (SRS) and the detection limits specified in Env-Wq 1600. Samples designated as Lagoon 1 through Lagoon 5 are septage samples removed from the respective lagoon with a backhoe the previous week, and samples designated as "soil" were collected from the berm surrounding the lagoon. The laboratory results indicated the following:

- Concentrations of chlorobenzene in the Lagoon 1 and Lagoon 4 septage samples exceeded the SRS of 6 milligrams/kilogram (mg/kg). Other VOCs were not detected at concentrations exceeding SRS.
- Concentrations of 4-chloroaniline in the Lagoon 1, Lagoon 2, Lagoon 3, and Lagoon 4 septage samples exceeded the SRS of 1.3 mg/kg. In addition, concentrations of benzo[b]fluoranthene and benzo[a]pyrene in the Lagoon 4 sample also exceeded the SRS of 1 mg/kg and 0.7 mg/kg, respectively. For other SVOCs detected, either a standard has not been established or an SRS was not exceeded.
- Phosphorus concentrations ranged from 500 mg/kg (Lagoon 5 Soil) to 12,000 mg/kg (Lagoon 1), above the Env-Wq 1600 reporting limit of 16 mg/kg.
- Nitrate-Nitrite concentrations were typically below the required Env-Wq 1600 reporting limit of 31 mg/kg. The Lagoon 2 Soil, Lagoon 3 Soil, and Lagoon 5 Soil concentrations were at or above the reporting limit.
- The ammonia concentrations in the septage samples ranged from 15 mg/kg (Lagoon 2) to 350 mg/kg (Lagoon 1). Ammonia concentrations in the samples collected from the berms were typically less than 5 mg/kg; only the Lagoon 3 Soil sample (21 mg/kg) contained ammonia above the laboratory reporting limit.
- TKN concentrations ranged from 370 mg/kg (Lagoon 4 Soil) to 9,300 mg/kg (Lagoon 1).
- For the metals analyzed, there were no exceedances of SRS. There is not an established SRS for molybdenum and potassium, but reported concentrations for molybdenum were less than the required Env-Wq 1600 reporting limit of 18 mg/kg. Potassium concentrations ranged from 390 mg/kg (Field Duplicate of Lagoon 4, Lagoon 5 Soil, and South Berm Soil) to 710 mg/kg (Lagoon 2).
- PCBs were not detected in samples at concentrations above the laboratory reporting limits, which are well below the SRS of 1 mg/kg for all PCBs.
- Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) were detected in all samples, and numerous other PFAS were detected. PFOA concentrations ranged from

0.53 nanograms per gram (ng/g) (Lagoon 5 Soil and North Berm Soil) to 10.2 ng/g (Lagoon 3). PFOS concentrations ranged from 1.4 ng/g (Lagoon 5) to 17.5 ng/g (Lagoon 4 Soil). There are no current SRS for PFAS.

Tables summarizing analytical results and the laboratory report from Eastern Analytical, Inc. are attached. It is noted the analyses for pH and percent solids were erroneously omitted from the Chain of Custody for the Lagoon 1 – Soil samples submitted to EAI and these analyses were not run by the lab. Based on the consistency of these measurements in other samples submitted for analyses, the lack of this data is not expected to impact the overall characterization of the residuals.

Nobis returned to the site on September 28, 2022 to conduct a GPS survey for estimating the extent and volume of residual material present on site. Based on the data collected on that date and assuming the depth of residual material in closed Lagoon 3 is 14 feet deep, the estimated quantity of residual material is 20,669 cubic yards. This estimate includes the approximately 2,000 cubic yards in the perimeter berm that may consist of residual material.

Based on the presence of PFAS in the residuals samples and the berm soil samples, evidence of SRS exceedances, and quantity of materials, it is anticipated that off-site disposal options will be limited and beneficial reuse is not an option. A full remedial alternatives report will be forthcoming.

We trust that this will meet the current NHDES requirements for the site. Please contact the undersigned if you have any further questions.

Sincerely,
Nobis Group®

Lori A. L. Cox

Lori Cox, PE
Project Manager

Clarence "Tim" Andrews, PG | Associate
Director of State & Municipal Services

Attachments: Tables 1-6, Site Plan, laboratory report

c: Neal Cass, Town of Hopkinton

ATTACHMENTS

Table 1
Summary of VOC Analyses
Hopkinton Septage Lagoons
491 East Penacook Road
Hopkinton, New Hampshire

NHDES Soil Standards		Parameter													
		Chlorobenzene	Toluene	1,4-Dichlorobenzene	Total Xylenes	Chloroform	Benzene	Methyl tertiary-butyl ether (MtBE)	Naphthalene	Ethylbenzene	p-Isopropyltoluene	n-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,4-Dioxane
ENV-Or 600 Soil Remediation Standard		**6**	**100**	**7**	**500**	**3**	**0.3**	**0.2**	**5**	**120**	**NS**	**85**	**130**	**96**	**5**
ENV-Wq Table 1613-1 Detection Limit (mg/kg)		**1**	**1**	**5**	**15**	**0.1**	**0.3**	**2**	**5**	**1**	**5**	**5**	**5**	**5**	**NS**
Location	**Date**														
Equipment Blank	8/15/2022	<0.001	<0.001	<0.001	<0.002	0.0014	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.050
Lagoon 1	8/15/2022	**15**	<0.2	5.2	<0.4	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<4
Lagoon 1 Soil	8/15/2022	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Lagoon 2	8/15/2022	<0.1	0.19	0.21	<0.2	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<2
Lagoon 2 Soil	8/15/2022	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Lagoon 3	8/15/2022	<0.08	<0.08	<0.08	<0.16	<0.08	<0.08	<0.2	<0.2	<0.08	<0.08	<0.08	<0.08	<0.08	<2
Lagoon 3 Soil	8/15/2022	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Lagoon 4	8/15/2022	**12**	0.48	3.3	0.29	<0.1	<0.1	<0.2	<0.2	<0.1	0.52	<0.1	<0.1	<0.1	<2
Field Duplicate	8/15/2022	3.5	0.66	1.2	<0.18	<0.09	<0.09	<0.2	<0.2	<0.09	0.52	<0.09	<0.09	<0.09	<2
Lagoon 4 Soil	8/15/2022	<0.06	<0.06	<0.06	<0.12	<0.06	<0.06	<0.1	<0.1	<0.06	<0.06	<0.06	<0.06	<0.06	<1
Lagoon 5	8/15/2022	0.27	2.6	0.99	<0.4	<0.2	<0.2	<0.3	<0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<3
Lagoon 5 Soil	8/15/2022	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<1
North Berm	8/15/2022	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<1
South Berm	8/15/2022	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<1

Notes:

1. Concentrations are reported as milligrams per kilogram (mg/kg), equivalent to parts per million (ppm). Concentrations for the Equipment Blank are reported as milligrams per liter (mg/L) equivalent to parts per million (ppm).
2. "NS" indicates that no standard or detection limit is established. "--" or "<X" indicates that the parameter was not detected above the laboratory reporting limit. **Bold** text indicates the concentration exceeds Soil Remediation Standards (SRS), which are referenced in Table 600-2 of New Hampshire Code of Administrative Rules Part Env-Or 600 "Contaminated Site Management."
3. Samples were collected on the dates specified by Nobis Field Personnel and NHDES representatives. All analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire. The VOC analyses were performed per EPA Method 8260C.
4. The Env-Wq Table 1613-1 Detection Limits are specified in Env-Wq 1600 "Septage Management."
5. Samples labeled as Soil are from the berm of the designated lagoon. Samples labeled as lagoon only are septage solids.

Table 2
Summary of SVOC Analyses
Hopkinton Septage Lagoons
491 East Penacook Road
Hopkinton, New Hampshire

NHDES Soil Standards		Parameter											
		1,4-Dichlorobenzene	4-Chloroaniline	bis(2Ethylhexyl)phthalate	n-Octadecane	Phenanthrene	Fluoranthene	Pyrene	Benzo[a]anthracene	Chrysene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene
ENV-Or 600 Soil Remediation Standard		**7**	**1.3**	**NS**	**NS**	**NS**	**960**	**720**	**1**	**120**	**1**	**12**	**0.7**
ENV-Wq Table 1613-1 Detection Limit (mg/kg)		**5**	**1.3**	**5**	**NDL**	**5**	**5**	**5**	**1.7**	**5**	**5**	**5**	**1.7**
Location	**Date**												
Equipment Blank	8/15/2022	<0.001	<0.001	<0.005	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lagoon 1	8/15/2022	3.40	**4.60**	<3	3.50	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Lagoon 1 Soil	8/15/2022	<0.07	0.15	2.30	<0.4	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Lagoon 2	8/15/2022	1.00	**2.10**	7	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lagoon 2 Soil	8/15/2022	<0.07	0.28	<0.4	<0.4	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Lagoon 3	8/15/2022	<0.5	**2.70**	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lagoon 3 Soil	8/15/2022	<0.07	0.25	<0.4	<0.4	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Lagoon 4	8/15/2022	1.60	**1.70**	<3	<3	1.2	2.4	1.7	0.91	1.2	**1.7**	0.62	**0.99**
Field Duplicate	8/15/2022	1.20	**1.60**	<3	<3	1.2	2.0	1.5	0.90	0.90	**1.4**	<0.6	**0.90**
Lagoon 4 Soil	8/15/2022	<0.07	0.13	<0.4	<0.4	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Lagoon 5	8/15/2022	<0.5	0.86	<2	<2	<0.5	0.55	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lagoon 5 Soil	8/15/2022	<0.07	0.17	<0.34	<0.34	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
North Berm	8/15/2022	<0.07	<0.07	<0.4	<0.4	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
South Berm	8/15/2022	<0.07	<0.07	<0.34	<0.34	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07

Notes:

1. Concentrations are reported as milligrams per kilogram (mg/kg), equivalent to parts per million (ppm). Concentrations for the Equipment Blank are reported as milligrams per liter (mg/L) equivalent to parts per million (ppm).
2. "NS" indicates that no standard is established. "--" or "<X" indicates that the parameter was not detected above the laboratory reporting limit. Bold text indicates the concentration exceeds Soil Remediation Standards (SRS), which are referenced in Table 600-2 of New Hampshire Code of Administrative Rules Part Env-Or 600 "Contaminated Site Management."
3. Samples were collected on the dates specified by Nobis Field Personnel and NHDES representatives. All analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire. The SVOC analyses were performed per EPA Method 8270D.
4. The Env-Wq Table 1613-2 Detection Limits are established per Env-Wq 1600 "Septage Management."
5. Samples labeled as Soil are from the berm of the designated lagoon. Samples labeled as lagoon only are septage solids.

Table 3
Summary of Inorganic Analyses
Hopkinton Septage Lagoons
491 East Penacook Road
Hopkinton, New Hampshire

NHDES Soil Standards		Parameters					
		Phosphorus	**Nitrate-Nitrite**	**Ammonia-N**	**TKN**	**pH**	**% Solids**
ENV-Or 600 Soil Remediation Standard		**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
ENV-Wq Table 1613-2 Detection Limit (mg/kg)		**16**	**31**	**30**	**300**	**NS**	**NS**
Location	**Date**						
Equipment Blank	8/15/2022	<0.01	<0.5	<0.05	<0.5	7.69	NA
Lagoon 1	8/15/2022	12000	<10	350	9300	6.77	53
Lagoon 1 Soil	8/15/2022	820	17	<5	520	NA	NA
Lagoon 2	8/15/2022	2600	<9	15	4700	6.19	67.5
Lagoon 2 Soil	8/15/2022	840	32	<5	620	5.01	95.5
Lagoon 3	8/15/2022	1700	<8	76	5400	6.65	74.4
Lagoon 3 Soil	8/15/2022	800	44	21	600	4.35	95
Lagoon 4	8/15/2022	4700	<10	170	7200	6.78	58.6
Field Duplicate	8/15/2022	4400	<10	130	4400	6.76	61.4
Lagoon 4 Soil	8/15/2022	720	11	<5	400	5.1	94.9
Lagoon 5	8/15/2022	3800	<8	82	2000	6.3	71.4
Lagoon 5 Soil	8/15/2022	500	31	<5	370	4.99	98.2
North Berm	8/15/2022	540	<7	<5	490	5.09	92.4
South Berm	8/15/2022	650	<7	<5	550	5.15	97.7

Notes:

1. Concentrations are reported as milligrams per kilogram (mg/kg), equivalent to parts per million (ppm); solids are represented as a percentage. Units for pH are standard units. Concentrations for the Equipment Blank are reported as milligrams per liter (mg/L) equivalent to parts per million (ppm).

2. "NS" indicates that no standard is established. "--" or "<X" indicates that the parameter was not detected above the laboratory reporting limit. "NA" indicates the analysis was not performed. Bold text indicates the concentration exceeds Soil Remediation Standards (SRS), which are referenced in Table 600-2 of New Hampshire Code of Administrative Rules Part Env-Or 600 "Contaminated Site Management."

3. Samples were collected on the dates specified by Nobis Field Personnel and NHDES representatives. All analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire.

4. The Env-Wq Table 1613-2 Detection Limits are established per Env-Wq 1600 "Septage Management."

5. Samples labeled as Soil are from the berm of the designated lagoon. Samples labeled as lagoon only are septage solids.

Table 4
Summary of Metals Analyses
Hopkinton Septage Lagoons
491 East Penacook Road
Hopkinton, New Hampshire

NHDES Standards		Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Potassium	Selenium	Zinc
ENV-Or 600 Soil Remediation Standard		**11**	**33**	**1,000**	**NS**	**400**	**7**	**NS**	**400**	**NS**	**180**	**1,000**
ENV-Wq Table 1613-2 Detection Limit (mg/kg)		**10**	**1**	**10**	**10**	**11**	**0.05**	**18**	**10**	**15**	**18**	**10**
Location	**Date**											
Equipment Blank	8/15/2022	<0.0000005	<0.000001	<0.000001	<0.000001	<0.000001	<0.0000001	<0.000001	<0.000001	<0.00005	<0.000001	<0.000005
Lagoon 1	8/15/2022	5.8	0.64	12	220	14	0.34	5.4	12	590	2.2	390
Lagoon 1 Soil	8/15/2022	2.3	<0.5	5.4	37	5.4	0.12	0.57	4.1	470	<0.5	45
Lagoon 2	8/15/2022	4.1	<0.5	11	140	14	0.82	2.4	9	710	1.6	210
Lagoon 2 Soil	8/15/2022	2.1	<0.5	5.8	39	6.8	0.1	0.52	4.1	500	<0.5	57
Lagoon 3	8/15/2022	5.8	<0.5	7.8	150	12	0.23	2.7	6.3	530	1.5	260
Lagoon 3 Soil	8/15/2022	2.6	<0.5	5.3	38	4.8	0.14	0.63	4.0	600	<0.5	52
Lagoon 4	8/15/2022	4.7	0.64	34	430	22	0.36	13	16	680	1.0	570
Field Duplicate	8/15/2022	3.8	<0.5	9.2	140	10	0.17	2.6	6.2	390	1.2	260
Lagoon 4 Soil	8/15/2022	1.6	<0.5	4.2	36	6.2	0.14	<0.5	2.9	400	<0.5	36
Lagoon 5	8/15/2022	4.1	<0.5	15	79	16	0.26	2.8	8.0	570	1.0	170
Lagoon 5 Soil	8/15/2022	1.7	<0.5	4.0	21	4.8	<0.1	<0.5	3.1	390	<0.5	32
North Berm	8/15/2022	1.7	<0.5	4.9	19	5.7	<0.1	<0.5	3.2	540	<0.5	27
South Berm	8/15/2022	1.7	<0.5	4.4	30	5.6	0.12	<0.5	2.7	390	<0.5	25

Notes:

1. Concentrations are reported as milligrams per kilogram (mg/kg), equivalent to parts per million (ppm). Concentrations for the Equipment Blank are reported as milligrams per liter (mg/L) equivalent to parts per million
2. "NS" indicates that no standard is established. "--" or "<X" indicates that the parameter was not detected above the laboratory reporting limit. Bold text indicates the concentration exceeds Soil Remediation Standards (SRS), which are referenced in Table 600-2 of New Hampshire Code of Administrative Rules Part Env-Or 600 "Contaminated Site Management."
3. Samples were collected on the dates specified by Nobis Field Personnel and NHDES representatives. All analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire.
4. The Env-Wq Table 1613-2 Detection Limits are established per Env-Wq 1600 "Septage Management."
5. Samples labeled as Soil are from the berm of the designated lagoon. Samples labeled as lagoon only are septage solids.

Table 5
Summary of PCB Analyses
Hopkinton Septage Lagoons
491 East Penacook Road
Hopkinton, New Hampshire

NHDES Soil Standards		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	PCB-1262	PCB-1268
ENV-Or 600 Soil Remediation Standard		1								
Location	Date									
Lagoon 1	8/15/2022	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lagoon 1 Soil	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lagoon 2	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lagoon 2 Soil	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lagoon 3	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lagoon 3 Soil	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lagoon 4	8/15/2022	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Field Duplicate	8/15/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lagoon 4 Soil	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lagoon 5	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lagoon 5 Soil	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
North Berm	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
South Berm	8/15/2022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes:

1. Concentrations are reported as milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).

2. "NS" indicates that no standard is established. "--" or "<X" indicates that the parameter was not detected above the laboratory reporting limit. Bold text indicates the concentration exceeds Soil Remediation Standards (SRS), which are referenced in Table 600-2 of New Hampshire Code of Administrative Rules Part Env-Or 600 "Contaminated Site Management."
3. Samples were collected on the dates specified by Nobis Field Personnel and NHDES representatives. All analyses were performed by Eastern Analytical, Inc. of Concord, New Hampshire.
4. The Env-Wq Table 1613-2 Detection Limits are established per Env-Wq 1600 "Septage Management."
5. Samples labeled as Soil are from the berm of the designated lagoon. Samples labeled as lagoon only are septage solids.

Table 6
Summary of PFAS Analyses
Hopkinton Septage Lagoons
491 East Penacook Road
Hopkinton, New Hampshire

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)		Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	Perfluorohexanoic Acid (PFHxA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorononanoic Acid (PFNA)	Perfluorodecanoic Acid (PFDA)	Perfluoroundecanoic Acid (PFUnA)	Perfluorododecanoic Acid (PFDoA)	Perfluorotridecanoic Acid (PFTrDA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorobutane Sulfonic Acid (PFBS)	Perfluoropetanesulfonic acid (PFPeS)	Perfluorohexane sulfonic Acid (PFHxS)	Perfluoroheptane Sulfonic Acid (PFHpS)	Perfluorooctane Sulfonic Acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane Sulfonic Acid (PFDS)	4:2 Fluorotelomersulfonic Acid (4:2FTS)	6:2 Fluorotelomersulfonic Acid (6:2FTS)	8:2 Fluorotelomersulfonic Acid (8:2FTS)	N-MeFOSAA	N-EtFOSAA	Perfluorooctane Sulfonamide (FOSA)
ENV-Or 600 Soil Remediation Standard		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
LOCATION	DATE	LABORATORY ANALYTICAL DATA																							
Lagoon 1 Soil	8/15/2022	<0.490	<0.490	<0.490	0.43	3.08	0.57	1.43	<0.490	<0.490	<0.490	<0.490	0.29	<0.981	0.42	<0.490	8.56	<0.981	0.73	<0.981	<0.490	<0.490	2.25	2.32	<0.490
Lagoon 1	8/15/2022	<0.417	<0.417	0.62	<0.208	0.85	0.50	0.65	<4.17	<0.417	<0.417	<0.417	<0.208	<0.833	<0.208	<0.417	2.68	<0.833	<4.17	<0.833	<0.417	<0.417	<4.17	5.12	0.43
Lagoon 2 Soil	8/15/2022	<0.469	0.48	0.67	0.72	4.83	0.73	1.93	<0.469	0.66	<0.469	<0.469	0.53	<0.938	0.51	<0.469	10.2	<0.938	2.50	<0.938	<0.469	<0.469	1.86	2.20	0.70
Lagoon 2	8/15/2022	<0.305	1.14	0.87	0.48	2.94	0.42	1.07	<0.305	<0.305	<0.305	<0.305	0.30	<0.611	<0.153	<0.305	2.03	<0.611	1.44	<0.611	<0.305	<0.305	4.07	4.27	0.50
Lagoon 3 Soil	8/15/2022	<0.491	0.58	0.83	0.87	5.37	0.55	1.36	<0.491	<0.491	<0.491	<0.491	0.50	<0.981	0.65	<0.491	10.1	<0.491	1.33	<0.981	<0.491	<0.491	3.52	4.12	1.06
Lagoon 3	8/15/2022	<0.417	1.07	1.14	1.08	10.2	2.28	5.31	0.65	1.3	<0.417	<0.417	0.58	<0.834	1.08	<0.417	16.5	<0.834	5.29	<0.834	<0.417	<0.417	21.1	25.0	4.26
Lagoon 4 Soil	8/15/2022	<0.494	<0.494	<0.494	0.37	3.00	0.56	1.54	<0.494	<0.494	<0.494	<0.494	<0.247	<0.989	0.51	<0.494	17.5	<0.989	1.03	<0.989	<0.494	<0.494	1.68	3.17	<0.494
Lagoon 4	8/15/2022	<0.392	<0.392	0.55	<0.196	0.57	<0.196	0.54	<0.392	<0.392	<0.392	<0.392	<0.196	<0.784	<0.196	<0.392	3.02	<0.784	0.89	<0.784	<0.392	<0.392	1.88	1.81	<0.392
Lagoon 5 Soil	8/15/2022	<0.458	<0.458	<0.458	0.31	1.77	<0.229	0.53	<0.458	<0.458	<0.458	<0.458	<0.229	<0.915	0.48	<0.458	6.40	<0.915	<0.458	<0.915	<0.458	<0.458	2.15	3.83	0.67
Lagoon 5	8/15/2022	<0.376	<0.376	0.47	<0.188	0.53	<0.188	0.30	<0.376	<0.376	<0.376	<0.376	<0.188	<0.751	<0.188	<0.376	1.40	<0.751	1.27	<0.751	<0.376	<0.376	1.44	2.21	<0.376
North Berm Soil	8/15/2022	<0.582	<0.582	<0.582	<0.291	0.53	<0.291	<0.291	<0.582	<0.582	<1.75	<1.75	<0.291	<1.16	<0.291	<0.582	6.47	<1.16	<0.582	<1.16	<0.582	<0.582	<1.75	1.19	<0.582
South Berm Soil	8/15/2022	<0.476	<0.476	<0.476	<0.238	1.04	0.25	1.35	<0.476	<0.476	<1.39	<1.39	<0.238	<0.951	<0.238	<0.476	11.40	<0.951	<0.476	<0.951	<0.476	<0.476	0.89	2.81	<0.476

Notes:
1. Concentrations are in nanograms per gram (ng/g), equivalent to parts per billion (ppb).
2. "NS" indicates that no standard is established. "--" or "<X" indicates that the parameter was not detected above the laboratory reporting limit. Red text indicates a concentration above the laboratory reporting limit. Soil Remediation Standards (SRS) are referenced in Table 600-2 of New Hampshire Code of Administrative Rules Part Env-Or 600 "Contaminated Site Management."
3. All samples were collected by the NH Department of Environmental Services. Samples were analyzed by Alpha Analytical Laboratory of Mansfield, Massachusetts.
4. Samples labeled as Soil are from the berm of the designated lagoon. Samples labeled as lagoon only are septage solids.

Septage Lagoon Area
(Approx. 3.6 acres)

LMW-1

Lagoon 1

Lagoon 2

Lagoon 3

Lagoon 4

Lagoon 5

GMW-4

LMW-3

LMW-2

LMW-5

LMW-4

GMW-3

MW-8

Notes:

1. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Monitoring Well
- Septage Lagoon Area
- GMZ
- Property Boundary
- Septage Lagoon
- Perimeter Berms
- Residual Stockpile Area

0 50 100 200

Feet
1 inch = 100 feet

N

Nobis Group® - 18 Chenell Drive
Concord, NH 03301 - (603) 224-4182
www.nobis-group.com

FIGURE 1

SITE PLAN
HOPKINTON SEPTAGE FACILITY
491 EAST PENACOOK ROAD
HOPKINTON, NEW HAMPSHIRE

PREPARED BY: TF	CHECKED BY: TA
PROJECT NO. 30157.000	DATE: DECEMBER 2022

J:\30151 Hopkinton Landfill\30151 GIS\Figures\Figure 2 Site Plan Septage Lagoons REV.mxd 12/7/2022 16:34 tfurtado

Eastern Analytical, Inc.

professional laboratory and drilling services

Tim Andrews
Nobis Group
18 Chenell Drive
Concord , NH 03301

Laboratory Report for:

Eastern Analytical, Inc. ID: 247647
Client Identification: Hopkinton Septage Lagoons | 030157.000
Date Received: 8/15/2022

Enclosed are the analytical results per the Chain of Custody for sample(s) in the referenced project. All analyses were performed in accordance with our QA/QC Program, NELAP and other applicable state requirements. All quality control criteria was within acceptance criteria unless noted on the report pages. Results are for the exclusive use of the client named on this report and will not be released to a third party without consent.

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the written approval of the laboratory.

The following standard abbreviations and conventions apply to all EAI reports:

< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Certifications:
Eastern Analytical, Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269), Vermont (VT1012), New York (12072), West Virginia (9910C) and Alabama (41620). Please refer to our website at www.easternanalytical.com for a copy of our certificates and accredited parameters.

References:

- EPA 600/4-79-020, 1983
- Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd edition or noted revision year.
- Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- Hach Water Analysis Handbook, 4th edition, 1992

If you have any questions regarding the results contained within, please feel free to contact customer service. Unless otherwise requested, we will dispose of the sample(s) 6 weeks from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director — 8.24.22 Date

SAMPLE CONDITIONS PAGE

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Temperature upon receipt (°C): 2.5 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date/Time Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
247647.01	Trip Blank 20220815	8/15/22	8/15/22 08:00	soil	100.0	Adheres to Sample Acceptance Policy
247647.02	Lagoon 1 - 20220815	8/15/22	8/15/22 10:10	soil	53.0	Adheres to Sample Acceptance Policy
247647.03	Lagoon 1 Soil - 20220815	8/15/22	8/15/22 09:45	soil	94.6	Adheres to Sample Acceptance Policy
247647.04	EB 20220815	8/15/22	8/15/22 09:15	aqueous		Adheres to Sample Acceptance Policy No Container received for PCB.
247647.05	Lagoon 2 Soil - 20220815	8/15/22	8/15/22 10:45	soil	95.5	Adheres to Sample Acceptance Policy
247647.06	Lagoon 2 20220815	8/15/22	8/15/22 11:00	soil	67.5	Adheres to Sample Acceptance Policy
247647.07	Lagoon 3 Soil 20220815	8/15/22	8/15/22 11:40	soil	95.0	Adheres to Sample Acceptance Policy
247647.08	Lagoon 3 20220815	8/15/22	8/15/22 12:00	soil	74.4	Adheres to Sample Acceptance Policy
247647.09	Lagoon 4 Soil 20220815	8/15/22	8/15/22 12:30	soil	94.9	Adheres to Sample Acceptance Policy
247647.1	Lagoon 4 20220815	8/15/22	8/15/22 12:55	soil	58.6	Adheres to Sample Acceptance Policy
247647.11	FDup 20220815	8/15/22	8/15/22 13:05	soil	61.4	Adheres to Sample Acceptance Policy
247647.12	Lagoon 5 Soil 20220815	8/15/22	8/15/22 12:25	soil	98.2	Adheres to Sample Acceptance Policy
247647.13	Lagoon 5 20220815	8/15/22	8/15/22 14:05	soil	71.4	Adheres to Sample Acceptance Policy
247647.14	North Berm 20220815	8/15/22	8/15/22 14:45	soil	92.4	Adheres to Sample Acceptance Policy
247647.15	South Berm 20220815	8/15/22	8/15/22 15:25	soil	97.7	Adheres to Sample Acceptance Policy

All results contained in this report relate only to the above listed samples.

Unless otherwise noted:

- *Hold times, preservation, container types, and sample conditions adhered to EPA Protocol.*
- *Solid samples are reported on a dry weight basis, unless otherwise noted. pH/Corrosivity, Flashpoint, Ignitability, Paint Filter, Conductivity and Specific Gravity are always reported on an "as received" basis.*
- *Analysis of pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite were performed at the laboratory outside of the recommended 15 minute hold time.*
- *Samples collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures.*

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Trip Blank 20220815	Lagoon 1 - 20220815	Lagoon 1 Soil - 20220815	EB 20220815
Lab Sample ID:	247647.01	247647.02	247647.03	247647.04
Matrix:	soil	soil	soil	aqueous
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	ug/L
Date of Analysis:	8/16/22	8/16/22	8/16/22	8/16/22
Analyst:	JAK	JAK	JAK	SG
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	4	1	1
Dichlorodifluoromethane	< 0.1	< 0.4	< 0.1	< 2
Chloromethane	< 0.1	< 0.4	< 0.1	< 2
Vinyl chloride	< 0.02	< 0.07	< 0.02	< 1
Bromomethane	< 0.1	< 0.4	< 0.1	< 2
Chloroethane	< 0.1	< 0.4	< 0.1	< 2
Trichlorofluoromethane	< 0.1	< 0.4	< 0.1	< 2
Diethyl Ether	< 0.05	< 0.2	< 0.05	< 2
Acetone	< 2	< 7	< 2	< 10
1,1-Dichloroethene	< 0.05	< 0.2	< 0.05	< 0.5
tert-Butyl Alcohol (TBA)	< 2	< 7	< 2	< 30
Methylene chloride	< 0.1	< 0.4	< 0.1	< 1
Carbon disulfide	< 0.1	< 0.4	< 0.1	< 2
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.4	< 0.1	< 1
Ethyl-t-butyl ether(ETBE)	< 0.1	< 0.4	< 0.1	< 2
Isopropyl ether(DIPE)	< 0.1	< 0.4	< 0.1	< 2
tert-amyl methyl ether(TAME)	< 0.1	< 0.4	< 0.1	< 2
trans-1,2-Dichloroethene	< 0.05	< 0.2	< 0.05	< 1
1,1-Dichloroethane	< 0.05	< 0.2	< 0.05	< 1
2,2-Dichloropropane	< 0.05	< 0.2	< 0.05	< 1
cis-1,2-Dichloroethene	< 0.05	< 0.2	< 0.05	< 1
2-Butanone(MEK)	< 0.5	< 2	< 0.5	< 10
Bromochloromethane	< 0.05	< 0.2	< 0.05	< 1
Tetrahydrofuran(THF)	< 0.5	< 2	< 0.5	< 10
Chloroform	< 0.05	< 0.2	< 0.05	**1.4**
1,1,1-Trichloroethane	< 0.05	< 0.2	< 0.05	< 1
Carbon tetrachloride	< 0.05	< 0.2	< 0.05	< 1
1,1-Dichloropropene	< 0.05	< 0.2	< 0.05	< 1
Benzene	< 0.05	< 0.2	< 0.05	< 1
1,2-Dichloroethane	< 0.05	< 0.2	< 0.05	< 1
Trichloroethene	< 0.05	< 0.2	< 0.05	< 1
1,2-Dichloropropane	< 0.05	< 0.2	< 0.05	< 1
Dibromomethane	< 0.05	< 0.2	< 0.05	< 1
Bromodichloromethane	< 0.05	< 0.2	< 0.05	< 0.5
1,4-Dioxane	< 1	< 4	< 1	< 50
4-Methyl-2-pentanone(MIBK)	< 0.5	< 2	< 0.5	< 10
cis-1,3-Dichloropropene	< 0.05	< 0.2	< 0.05	< 0.5
Toluene	< 0.05	< 0.2	< 0.05	< 1
trans-1,3-Dichloropropene	< 0.05	< 0.2	< 0.05	< 0.5
1,1,2-Trichloroethane	< 0.05	< 0.2	< 0.05	< 1
2-Hexanone	< 0.1	< 0.4	< 0.1	< 10
Tetrachloroethene	< 0.05	< 0.2	< 0.05	< 1
1,3-Dichloropropane	< 0.05	< 0.2	< 0.05	< 1
Dibromochloromethane	< 0.05	< 0.2	< 0.05	< 1
1,2-Dibromoethane(EDB)	< 0.02	< 0.07	< 0.02	< 0.5
Chlorobenzene	< 0.05	**15**	< 0.05	< 1
1,1,1,2-Tetrachloroethane	< 0.05	< 0.2	< 0.05	< 1

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Trip Blank 20220815	Lagoon 1 - 20220815	Lagoon 1 Soil - 20220815	EB 20220815
Lab Sample ID:	247647.01	247647.02	247647.03	247647.04
Matrix:	soil	soil	soil	aqueous
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	ug/L
Date of Analysis:	8/16/22	8/16/22	8/16/22	8/16/22
Analyst:	JAK	JAK	JAK	SG
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	4	1	1
Ethylbenzene	< 0.05	< 0.2	< 0.05	< 1
mp-Xylene	< 0.05	< 0.2	< 0.05	< 1
o-Xylene	< 0.05	< 0.2	< 0.05	< 1
Styrene	< 0.05	< 0.2	< 0.05	< 1
Bromoform	< 0.05	< 0.2	< 0.05	< 2
IsoPropylbenzene	< 0.05	< 0.2	< 0.05	< 1
Bromobenzene	< 0.05	< 0.2	< 0.05	< 1
1,1,2,2-Tetrachloroethane	< 0.05	< 0.2	< 0.05	< 1
1,2,3-Trichloropropane	< 0.05	< 0.2	< 0.05	< 0.5
n-Propylbenzene	< 0.05	< 0.2	< 0.05	< 1
2-Chlorotoluene	< 0.05	< 0.2	< 0.05	< 1
4-Chlorotoluene	< 0.05	< 0.2	< 0.05	< 1
1,3,5-Trimethylbenzene	< 0.05	< 0.2	< 0.05	< 1
tert-Butylbenzene	< 0.05	< 0.2	< 0.05	< 1
1,2,4-Trimethylbenzene	< 0.05	< 0.2	< 0.05	< 1
sec-Butylbenzene	< 0.05	< 0.2	< 0.05	< 1
1,3-Dichlorobenzene	< 0.05	< 0.2	< 0.05	< 1
p-Isopropyltoluene	< 0.05	< 0.2	< 0.05	< 1
1,4-Dichlorobenzene	< 0.05	**5.2**	< 0.05	< 1
1,2-Dichlorobenzene	< 0.05	< 0.2	< 0.05	< 1
n-Butylbenzene	< 0.05	< 0.2	< 0.05	< 1
1,2-Dibromo-3-chloropropane	< 0.05	< 0.2	< 0.05	< 2
1,3,5-Trichlorobenzene	< 0.05	< 0.2	< 0.05	< 1
1,2,4-Trichlorobenzene	< 0.05	< 0.2	< 0.05	< 1
Hexachlorobutadiene	< 0.05	< 0.2	< 0.05	< 0.5
Naphthalene	< 0.1	< 0.4	< 0.1	< 2
1,2,3-Trichlorobenzene	< 0.05	< 0.2	< 0.05	< 0.5
4-Bromofluorobenzene (surr)	**96 %R**	**100 %R**	**97 %R**	**95 %R**
1,2-Dichlorobenzene-d4 (surr)	**97 %R**	**94 %R**	**96 %R**	**96 %R**
Toluene-d8 (surr)	**101 %R**	**98 %R**	**100 %R**	**111 %R**
1,2-Dichloroethane-d4 (surr)	**96 %R**	**97 %R**	**96 %R**	**106 %R**

EB 20220815: Due to the presence of headspace in the sample at the time of receipt, the values reported may not accurately reflect the concentration in the sample. Bromomethane exhibited recovery below acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).

Lagoon 1 - 20220815: Reporting limits are elevated due to the % solids content of the sample or the sample mass used for analysis.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 2 Soil - 20220815	Lagoon 2 20220815	Lagoon 3 Soil 20220815	Lagoon 3 20220815
Lab Sample ID:	247647.05	247647.06	247647.07	247647.08
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	8/16/22	8/16/22	8/16/22	8/16/22
Analyst:	JAK	JAK	JAK	JAK
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	2	1	2
Dichlorodifluoromethane	< 0.1	< 0.2	< 0.1	< 0.2
Chloromethane	< 0.1	< 0.2	< 0.1	< 0.2
Vinyl chloride	< 0.02	< 0.04	< 0.02	< 0.03
Bromomethane	< 0.1	< 0.2	< 0.1	< 0.2
Chloroethane	< 0.1	< 0.2	< 0.1	< 0.2
Trichlorofluoromethane	< 0.1	< 0.2	< 0.1	< 0.2
Diethyl Ether	< 0.05	< 0.1	< 0.05	< 0.08
Acetone	< 2	< 4	< 2	< 3
1,1-Dichloroethene	< 0.05	< 0.1	< 0.05	< 0.08
tert-Butyl Alcohol (TBA)	< 2	< 4	< 2	< 3
Methylene chloride	< 0.1	< 0.2	< 0.1	< 0.2
Carbon disulfide	< 0.1	< 0.2	< 0.1	< 0.2
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.2	< 0.1	< 0.2
Ethyl-t-butyl ether(ETBE)	< 0.1	< 0.2	< 0.1	< 0.2
Isopropyl ether(DIPE)	< 0.1	< 0.2	< 0.1	< 0.2
tert-amyl methyl ether(TAME)	< 0.1	< 0.2	< 0.1	< 0.2
trans-1,2-Dichloroethene	< 0.05	< 0.1	< 0.05	< 0.08
1,1-Dichloroethane	< 0.05	< 0.1	< 0.05	< 0.08
2,2-Dichloropropane	< 0.05	< 0.1	< 0.05	< 0.08
cis-1,2-Dichloroethene	< 0.05	< 0.1	< 0.05	< 0.08
2-Butanone(MEK)	< 0.5	< 1	< 0.5	< 0.8
Bromochloromethane	< 0.05	< 0.1	< 0.05	< 0.08
Tetrahydrofuran(THF)	< 0.5	< 1	< 0.5	< 0.8
Chloroform	< 0.05	< 0.1	< 0.05	< 0.08
1,1,1-Trichloroethane	< 0.05	< 0.1	< 0.05	< 0.08
Carbon tetrachloride	< 0.05	< 0.1	< 0.05	< 0.08
1,1-Dichloropropene	< 0.05	< 0.1	< 0.05	< 0.08
Benzene	< 0.05	< 0.1	< 0.05	< 0.08
1,2-Dichloroethane	< 0.05	< 0.1	< 0.05	< 0.08
Trichloroethene	< 0.05	< 0.1	< 0.05	< 0.08
1,2-Dichloropropane	< 0.05	< 0.1	< 0.05	< 0.08
Dibromomethane	< 0.05	< 0.1	< 0.05	< 0.08
Bromodichloromethane	< 0.05	< 0.1	< 0.05	< 0.08
1,4-Dioxane	< 1	< 2	< 1	< 2
4-Methyl-2-pentanone(MIBK)	< 0.5	< 1	< 0.5	< 0.8
cis-1,3-Dichloropropene	< 0.05	< 0.1	< 0.05	< 0.08
Toluene	< 0.05	**0.19**	< 0.05	< 0.08
trans-1,3-Dichloropropene	< 0.05	< 0.1	< 0.05	< 0.08
1,1,2-Trichloroethane	< 0.05	< 0.1	< 0.05	< 0.08
2-Hexanone	< 0.1	< 0.2	< 0.1	< 0.2
Tetrachloroethene	< 0.05	< 0.1	< 0.05	< 0.08
1,3-Dichloropropane	< 0.05	< 0.1	< 0.05	< 0.08
Dibromochloromethane	< 0.05	< 0.1	< 0.05	< 0.08
1,2-Dibromoethane(EDB)	< 0.02	< 0.04	< 0.02	< 0.03
Chlorobenzene	< 0.05	< 0.1	< 0.05	< 0.08
1,1,1,2-Tetrachloroethane	< 0.05	< 0.1	< 0.05	< 0.08

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 2 Soil - 20220815	Lagoon 2 20220815	Lagoon 3 Soil 20220815	Lagoon 3 20220815
Lab Sample ID:	247647.05	247647.06	247647.07	247647.08
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	8/16/22	8/16/22	8/16/22	8/16/22
Analyst:	JAK	JAK	JAK	JAK
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	2	1	2
Ethylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
mp-Xylene	< 0.05	< 0.1	< 0.05	< 0.08
o-Xylene	< 0.05	< 0.1	< 0.05	< 0.08
Styrene	< 0.05	< 0.1	< 0.05	< 0.08
Bromoform	< 0.05	< 0.1	< 0.05	< 0.08
IsoPropylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
Bromobenzene	< 0.05	< 0.1	< 0.05	< 0.08
1,1,2,2-Tetrachloroethane	< 0.05	< 0.1	< 0.05	< 0.08
1,2,3-Trichloropropane	< 0.05	< 0.1	< 0.05	< 0.08
n-Propylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
2-Chlorotoluene	< 0.05	< 0.1	< 0.05	< 0.08
4-Chlorotoluene	< 0.05	< 0.1	< 0.05	< 0.08
1,3,5-Trimethylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
tert-Butylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
1,2,4-Trimethylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
sec-Butylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
1,3-Dichlorobenzene	< 0.05	< 0.1	< 0.05	< 0.08
p-Isopropyltoluene	< 0.05	< 0.1	< 0.05	< 0.08
1,4-Dichlorobenzene	< 0.05	**0.21**	< 0.05	< 0.08
1,2-Dichlorobenzene	< 0.05	< 0.1	< 0.05	< 0.08
n-Butylbenzene	< 0.05	< 0.1	< 0.05	< 0.08
1,2-Dibromo-3-chloropropane	< 0.05	< 0.1	< 0.05	< 0.08
1,3,5-Trichlorobenzene	< 0.05	< 0.1	< 0.05	< 0.08
1,2,4-Trichlorobenzene	< 0.05	< 0.1	< 0.05	< 0.08
Hexachlorobutadiene	< 0.05	< 0.1	< 0.05	< 0.08
Naphthalene	< 0.1	< 0.2	< 0.1	< 0.2
1,2,3-Trichlorobenzene	< 0.05	< 0.1	< 0.05	< 0.08
4-Bromofluorobenzene (surr)	**97 %R**	**99 %R**	**96 %R**	**99 %R**
1,2-Dichlorobenzene-d4 (surr)	**95 %R**	**94 %R**	**95 %R**	**94 %R**
Toluene-d8 (surr)	**100 %R**	**99 %R**	**100 %R**	**99 %R**
1,2-Dichloroethane-d4 (surr)	**96 %R**	**96 %R**	**95 %R**	**96 %R**

Lagoon 2 20220815, Lagoon 3 20220815: Reporting limits are elevated due to the % solids content of the sample or the sample mass used for analysis.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 4 Soil 20220815	Lagoon 4 20220815	FDup 20220815	Lagoon 5 Soil 20220815
Lab Sample ID:	247647.09	247647.1	247647.11	247647.12
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	8/17/22	8/17/22	8/17/22	8/17/22
Analyst:	JAK	JAK	JAK	JAK
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	2	2	1
Dichlorodifluoromethane	< 0.1	< 0.2	< 0.2	< 0.1
Chloromethane	< 0.1	< 0.2	< 0.2	< 0.1
Vinyl chloride	< 0.02	< 0.05	< 0.04	< 0.02
Bromomethane	< 0.1	< 0.2	< 0.2	< 0.1
Chloroethane	< 0.1	< 0.2	< 0.2	< 0.1
Trichlorofluoromethane	< 0.1	< 0.2	< 0.2	< 0.1
Diethyl Ether	< 0.06	< 0.1	< 0.09	< 0.05
Acetone	< 2	< 5	< 4	< 2
1,1-Dichloroethene	< 0.06	< 0.1	< 0.09	< 0.05
tert-Butyl Alcohol (TBA)	< 2	< 5	< 4	< 2
Methylene chloride	< 0.1	< 0.2	< 0.2	< 0.1
Carbon disulfide	< 0.1	< 0.2	< 0.2	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.2	< 0.2	< 0.1
Ethyl-t-butyl ether(ETBE)	< 0.1	< 0.2	< 0.2	< 0.1
Isopropyl ether(DIPE)	< 0.1	< 0.2	< 0.2	< 0.1
tert-amyl methyl ether(TAME)	< 0.1	< 0.2	< 0.2	< 0.1
trans-1,2-Dichloroethene	< 0.06	< 0.1	< 0.09	< 0.05
1,1-Dichloroethane	< 0.06	< 0.1	< 0.09	< 0.05
2,2-Dichloropropane	< 0.06	< 0.1	< 0.09	< 0.05
cis-1,2-Dichloroethene	< 0.06	< 0.1	< 0.09	< 0.05
2-Butanone(MEK)	< 0.6	< 1	< 0.9	< 0.5
Bromochloromethane	< 0.06	< 0.1	< 0.09	< 0.05
Tetrahydrofuran(THF)	< 0.6	< 1	< 0.9	< 0.5
Chloroform	< 0.06	< 0.1	< 0.09	< 0.05
1,1,1-Trichloroethane	< 0.06	< 0.1	< 0.09	< 0.05
Carbon tetrachloride	< 0.06	< 0.1	< 0.09	< 0.05
1,1-Dichloropropene	< 0.06	< 0.1	< 0.09	< 0.05
Benzene	< 0.06	< 0.1	< 0.09	< 0.05
1,2-Dichloroethane	< 0.06	< 0.1	< 0.09	< 0.05
Trichloroethene	< 0.06	< 0.1	< 0.09	< 0.05
1,2-Dichloropropane	< 0.06	< 0.1	< 0.09	< 0.05
Dibromomethane	< 0.06	< 0.1	< 0.09	< 0.05
Bromodichloromethane	< 0.06	< 0.1	< 0.09	< 0.05
1,4-Dioxane	< 1	< 2	< 2	< 1
4-Methyl-2-pentanone(MIBK)	< 0.6	< 1	< 0.9	< 0.5
cis-1,3-Dichloropropene	< 0.06	< 0.1	< 0.09	< 0.05
Toluene	< 0.06	**0.48**	**0.66**	< 0.05
trans-1,3-Dichloropropene	< 0.06	< 0.1	< 0.09	< 0.05
1,1,2-Trichloroethane	< 0.06	< 0.1	< 0.09	< 0.05
2-Hexanone	< 0.1	< 0.2	< 0.2	< 0.1
Tetrachloroethene	< 0.06	< 0.1	< 0.09	< 0.05
1,3-Dichloropropane	< 0.06	< 0.1	< 0.09	< 0.05
Dibromochloromethane	< 0.06	< 0.1	< 0.09	< 0.05
1,2-Dibromoethane(EDB)	< 0.02	< 0.05	< 0.04	< 0.02
Chlorobenzene	< 0.06	**12**	**3.5**	< 0.05
1,1,1,2-Tetrachloroethane	< 0.06	< 0.1	< 0.09	< 0.05

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 4 Soil 20220815	Lagoon 4 20220815	FDup 20220815	Lagoon 5 Soil 20220815
Lab Sample ID:	247647.09	247647.1	247647.11	247647.12
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	8/17/22	8/17/22	8/17/22	8/17/22
Analyst:	JAK	JAK	JAK	JAK
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	2	2	1
Ethylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
mp-Xylene	< 0.06	**0.29**	< 0.09	< 0.05
o-Xylene	< 0.06	< 0.1	< 0.09	< 0.05
Styrene	< 0.06	< 0.1	< 0.09	< 0.05
Bromoform	< 0.06	< 0.1	< 0.09	< 0.05
IsoPropylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
Bromobenzene	< 0.06	< 0.1	< 0.09	< 0.05
1,1,2,2-Tetrachloroethane	< 0.06	< 0.1	< 0.09	< 0.05
1,2,3-Trichloropropane	< 0.06	< 0.1	< 0.09	< 0.05
n-Propylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
2-Chlorotoluene	< 0.06	< 0.1	< 0.09	< 0.05
4-Chlorotoluene	< 0.06	< 0.1	< 0.09	< 0.05
1,3,5-Trimethylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
tert-Butylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
1,2,4-Trimethylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
sec-Butylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
1,3-Dichlorobenzene	< 0.06	< 0.1	< 0.09	< 0.05
p-Isopropyltoluene	< 0.06	**0.52**	**0.52**	< 0.05
1,4-Dichlorobenzene	< 0.06	**3.3**	**1.2**	< 0.05
1,2-Dichlorobenzene	< 0.06	< 0.1	< 0.09	< 0.05
n-Butylbenzene	< 0.06	< 0.1	< 0.09	< 0.05
1,2-Dibromo-3-chloropropane	< 0.06	< 0.1	< 0.09	< 0.05
1,3,5-Trichlorobenzene	< 0.06	< 0.1	< 0.09	< 0.05
1,2,4-Trichlorobenzene	< 0.06	< 0.1	< 0.09	< 0.05
Hexachlorobutadiene	< 0.06	< 0.1	< 0.09	< 0.05
Naphthalene	< 0.1	< 0.2	< 0.2	< 0.1
1,2,3-Trichlorobenzene	< 0.06	< 0.1	< 0.09	< 0.05
4-Bromofluorobenzene (surr)	**96 %R**	**105 %R**	**102 %R**	**96 %R**
1,2-Dichlorobenzene-d4 (surr)	**95 %R**	**94 %R**	**94 %R**	**97 %R**
Toluene-d8 (surr)	**100 %R**	**99 %R**	**99 %R**	**100 %R**
1,2-Dichloroethane-d4 (surr)	**95 %R**	**97 %R**	**98 %R**	**96 %R**

Lagoon 4 20220815, FDup 20220815: Reporting limits are elevated due to the % solids content of the sample or the sample mass used for analysis.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 5 20220815	North Berm 20220815	South Berm 20220815
Lab Sample ID:	247647.13	247647.14	247647.15
Matrix:	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg
Date of Analysis:	8/17/22	8/17/22	8/17/22
Analyst:	JAK	JAK	JAK
Method:	8260C	8260C	8260C
Dilution Factor:	3	1	1
Dichlorodifluoromethane	< 0.3	< 0.1	< 0.1
Chloromethane	< 0.3	< 0.1	< 0.1
Vinyl chloride	< 0.06	< 0.02	< 0.02
Bromomethane	< 0.3	< 0.1	< 0.1
Chloroethane	< 0.3	< 0.1	< 0.1
Trichlorofluoromethane	< 0.3	< 0.1	< 0.1
Diethyl Ether	< 0.2	< 0.05	< 0.05
Acetone	< 6	< 2	< 2
1,1-Dichloroethene	< 0.2	< 0.05	< 0.05
tert-Butyl Alcohol (TBA)	< 6	< 2	< 2
Methylene chloride	< 0.3	< 0.1	< 0.1
Carbon disulfide	< 0.3	< 0.1	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.3	< 0.1	< 0.1
Ethyl-t-butyl ether(ETBE)	< 0.3	< 0.1	< 0.1
Isopropyl ether(DIPE)	< 0.3	< 0.1	< 0.1
tert-amyl methyl ether(TAME)	< 0.3	< 0.1	< 0.1
trans-1,2-Dichloroethene	< 0.2	< 0.05	< 0.05
1,1-Dichloroethane	< 0.2	< 0.05	< 0.05
2,2-Dichloropropane	< 0.2	< 0.05	< 0.05
cis-1,2-Dichloroethene	< 0.2	< 0.05	< 0.05
2-Butanone(MEK)	< 2	< 0.5	< 0.5
Bromochloromethane	< 0.2	< 0.05	< 0.05
Tetrahydrofuran(THF)	< 2	< 0.5	< 0.5
Chloroform	< 0.2	< 0.05	< 0.05
1,1,1-Trichloroethane	< 0.2	< 0.05	< 0.05
Carbon tetrachloride	< 0.2	< 0.05	< 0.05
1,1-Dichloropropene	< 0.2	< 0.05	< 0.05
Benzene	< 0.2	< 0.05	< 0.05
1,2-Dichloroethane	< 0.2	< 0.05	< 0.05
Trichloroethene	< 0.2	< 0.05	< 0.05
1,2-Dichloropropane	< 0.2	< 0.05	< 0.05
Dibromomethane	< 0.2	< 0.05	< 0.05
Bromodichloromethane	< 0.2	< 0.05	< 0.05
1,4-Dioxane	< 3	< 1	< 1
4-Methyl-2-pentanone(MIBK)	< 2	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.2	< 0.05	< 0.05
Toluene	**2.6**	< 0.05	< 0.05
trans-1,3-Dichloropropene	< 0.2	< 0.05	< 0.05
1,1,2-Trichloroethane	< 0.2	< 0.05	< 0.05
2-Hexanone	< 0.3	< 0.1	< 0.1
Tetrachloroethene	< 0.2	< 0.05	< 0.05
1,3-Dichloropropane	< 0.2	< 0.05	< 0.05
Dibromochloromethane	< 0.2	< 0.05	< 0.05
1,2-Dibromoethane(EDB)	< 0.06	< 0.02	< 0.02
Chlorobenzene	**0.27**	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	< 0.2	< 0.05	< 0.05

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 5 20220815	North Berm 20220815	South Berm 20220815
Lab Sample ID:	247647.13	247647.14	247647.15
Matrix:	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg
Date of Analysis:	8/17/22	8/17/22	8/17/22
Analyst:	JAK	JAK	JAK
Method:	8260C	8260C	8260C
Dilution Factor:	3	1	1
Ethylbenzene	< 0.2	< 0.05	< 0.05
mp-Xylene	< 0.2	< 0.05	< 0.05
o-Xylene	< 0.2	< 0.05	< 0.05
Styrene	< 0.2	< 0.05	< 0.05
Bromoform	< 0.2	< 0.05	< 0.05
IsoPropylbenzene	< 0.2	< 0.05	< 0.05
Bromobenzene	< 0.2	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	< 0.2	< 0.05	< 0.05
1,2,3-Trichloropropane	< 0.2	< 0.05	< 0.05
n-Propylbenzene	< 0.2	< 0.05	< 0.05
2-Chlorotoluene	< 0.2	< 0.05	< 0.05
4-Chlorotoluene	< 0.2	< 0.05	< 0.05
1,3,5-Trimethylbenzene	< 0.2	< 0.05	< 0.05
tert-Butylbenzene	< 0.2	< 0.05	< 0.05
1,2,4-Trimethylbenzene	< 0.2	< 0.05	< 0.05
sec-Butylbenzene	< 0.2	< 0.05	< 0.05
1,3-Dichlorobenzene	< 0.2	< 0.05	< 0.05
p-Isopropyltoluene	< 0.2	< 0.05	< 0.05
1,4-Dichlorobenzene	**0.99**	< 0.05	< 0.05
1,2-Dichlorobenzene	< 0.2	< 0.05	< 0.05
n-Butylbenzene	< 0.2	< 0.05	< 0.05
1,2-Dibromo-3-chloropropane	< 0.2	< 0.05	< 0.05
1,3,5-Trichlorobenzene	< 0.2	< 0.05	< 0.05
1,2,4-Trichlorobenzene	< 0.2	< 0.05	< 0.05
Hexachlorobutadiene	< 0.2	< 0.05	< 0.05
Naphthalene	< 0.3	< 0.1	< 0.1
1,2,3-Trichlorobenzene	< 0.2	< 0.05	< 0.05
4-Bromofluorobenzene (surr)	**99 %R**	**96 %R**	**95 %R**
1,2-Dichlorobenzene-d4 (surr)	**95 %R**	**96 %R**	**96 %R**
Toluene-d8 (surr)	**100 %R**	**100 %R**	**100 %R**
1,2-Dichloroethane-d4 (surr)	**96 %R**	**96 %R**	**96 %R**

Lagoon 5 20220815: Reporting limits are elevated due to the % solids content of the sample or the sample mass used for analysis.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 1 - 20220815	Lagoon 1 Soil - 20220815	EB 20220815	Lagoon 2 Soil - 20220815
Lab Sample ID:	247647.02	247647.03	247647.04	247647.05
Matrix:	soil	soil	aqueous	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	ug/L	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/17/22	8/16/22
Date of Analysis:	8/18/22	8/17/22	8/17/22	8/17/22
Analyst:	JMR	JMR	JMR	JMR
Method:	8270D	8270D	8270D	8270D
Dilution Factor:	9	1	1	1
alpha-Terpineol	< 3	< 0.4	< 5	< 0.4
Phenol	< 0.7	< 0.07	< 1	< 0.07
2-Chlorophenol	< 0.7	< 0.07	< 1	< 0.07
2,4-Dichlorophenol	< 0.7	< 0.07	< 1	< 0.07
2,4,5-Trichlorophenol	< 0.7	< 0.07	< 1	< 0.07
2,4,6-Trichlorophenol	< 0.7	< 0.07	< 1	< 0.07
Pentachlorophenol	< 3	< 0.4	< 5	< 0.4
2-Nitrophenol	< 3	< 0.4	< 5	< 0.4
4-Nitrophenol	< 3	< 0.4	< 5	< 0.4
2,4-Dinitrophenol	< 6	< 0.7	< 10	< 0.7
2-Methylphenol	< 0.7	< 0.07	< 1	< 0.07
3/4-Methylphenol	< 0.7	< 0.07	< 1	< 0.07
2,4-Dimethylphenol	< 3	< 0.4	< 5	< 0.4
4-Chloro-3-methylphenol	< 0.7	< 0.07	< 1	< 0.07
4,6-Dinitro-2-methylphenol	< 3	< 0.4	< 5	< 0.4
Benzoic Acid	< 30	< 4	< 50	< 4
N-Nitrosodimethylamine	< 0.7	< 0.07	< 1	< 0.07
n-Nitroso-di-n-propylamine	< 0.4	< 0.04	< 0.5	< 0.04
n-Nitrosodiphenylamine	< 0.7	< 0.07	< 1	< 0.07
bis(2-Chloroethyl)ether	< 0.7	< 0.07	< 1	< 0.07
bis(2-chloroisopropyl)ether	< 0.7	< 0.07	< 1	< 0.07
bis(2-Chloroethoxy)methane	< 0.7	< 0.07	< 1	< 0.07
1,3-Dichlorobenzene	< 0.7	< 0.07	< 1	< 0.07
Acetophenone	< 6	< 0.7	< 10	< 0.7
1,4-Dichlorobenzene	**3.4**	< 0.07	< 1	< 0.07
1,2-Dichlorobenzene	< 0.7	< 0.07	< 1	< 0.07
1,2,4-Trichlorobenzene	< 0.7	< 0.07	< 1	< 0.07
2-Chloronaphthalene	< 0.7	< 0.07	< 1	< 0.07
4-Chlorophenyl-phenylether	< 0.7	< 0.07	< 1	< 0.07
4-Bromophenyl-phenylether	< 0.7	< 0.07	< 1	< 0.07
Hexachloroethane	< 0.7	< 0.07	< 1	< 0.07
Hexachlorobutadiene	< 0.7	< 0.07	< 1	< 0.07
Hexachlorocyclopentadiene	< 3	< 0.4	< 5	< 0.4
Hexachlorobenzene	< 0.7	< 0.07	< 1	< 0.07
4-Chloroaniline	**4.6**	**0.15**	< 1	**0.28**
2,3-Dichloroaniline	< 0.7	< 0.07	< 1	< 0.07
2-Nitroaniline	< 3	< 0.4	< 5	< 0.4
3-Nitroaniline	< 3	< 0.4	< 5	< 0.4
4-Nitroaniline	< 3	< 0.4	< 5	< 0.4
Aniline	< 0.7	< 0.07	< 1	< 0.07
Benzyl alcohol	< 6	< 0.7	< 10	< 0.7
Nitrobenzene	< 0.7	< 0.07	< 1	< 0.07
Isophorone	< 0.7	< 0.07	< 1	< 0.07
2,4-Dinitrotoluene	< 1	< 0.14	< 2	< 0.14
2,6-Dinitrotoluene	< 1	< 0.14	< 2	< 0.14
Benzidine (estimated)	< 3	< 0.4	< 5	< 0.4
3,3'-Dichlorobenzidine	< 0.7	< 0.07	< 1	< 0.07

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 1 - 20220815	Lagoon 1 Soil - 20220815	EB 20220815	Lagoon 2 Soil - 20220815
Lab Sample ID:	247647.02	247647.03	247647.04	247647.05
Matrix:	soil	soil	aqueous	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	ug/L	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/17/22	8/16/22
Date of Analysis:	8/18/22	8/17/22	8/17/22	8/17/22
Analyst:	JMR	JMR	JMR	JMR
Method:	8270D	8270D	8270D	8270D
Dilution Factor:	9	1	1	1
Pyridine	< 3	< 0.4	< 5	< 0.4
Azobenzene	< 0.7	< 0.07	< 1	< 0.07
Carbazole	< 0.7	< 0.07	< 1	< 0.07
Dimethylphthalate	< 0.7	< 0.07	< 1	< 0.07
Diethylphthalate	< 3	< 0.4	< 5	< 0.4
Di-n-butylphthalate	< 3	< 0.4	< 5	< 0.4
Butylbenzylphthalate	< 3	< 0.4	< 5	< 0.4
bis(2-Ethylhexyl)phthalate	< 3	**2.3**	< 5	< 0.4
Di-n-octylphthalate	< 3	< 0.4	< 5	< 0.4
Dibenzofuran	< 0.7	< 0.07	< 1	< 0.07
Naphthalene	< 0.7	< 0.07	< 0.1	< 0.07
2-Methylnaphthalene	< 0.7	< 0.07	< 0.1	< 0.07
1-Methylnaphthalene	< 0.7	< 0.07	< 0.1	< 0.07
Acenaphthylene	< 0.7	< 0.07	< 0.1	< 0.07
Acenaphthene	< 0.7	< 0.07	< 0.1	< 0.07
Fluorene	< 0.7	< 0.07	< 0.1	< 0.07
Phenanthrene	< 0.7	< 0.07	< 0.1	< 0.07
Anthracene	< 0.7	< 0.07	< 0.1	< 0.07
Fluoranthene	< 0.7	< 0.07	< 0.1	< 0.07
Pyrene	< 0.7	< 0.07	< 0.1	< 0.07
Benzo[a]anthracene	< 0.7	< 0.07	< 0.1	< 0.07
Chrysene	< 0.7	< 0.07	< 0.1	< 0.07
Benzo[b]fluoranthene	< 0.7	< 0.07	< 0.1	< 0.07
Benzo[k]fluoranthene	< 0.7	< 0.07	< 0.1	< 0.07
Benzo[a]pyrene	< 0.7	< 0.07	< 0.1	< 0.07
Indeno[1,2,3-cd]pyrene	< 0.7	< 0.07	< 0.1	< 0.07
Dibenz[a,h]anthracene	< 0.7	< 0.07	< 0.1	< 0.07
Benzo[g,h,i]perylene	< 0.7	< 0.07	< 0.1	< 0.07
n-Decane	< 3	< 0.4	< 5	< 0.4
n-Octadecane	**3.5**	< 0.4	< 5	< 0.4
2-Fluorophenol (surr)	**45 %R**	**63 %R**	**36 %R**	**67 %R**
Phenol-d6 (surr)	**52 %R**	**69 %R**	**25 %R**	**73 %R**
2,4,6-Tribromophenol (surr)	**61 %R**	**88 %R**	**74 %R**	**88 %R**
Nitrobenzene-D5 (surr)	**59 %R**	**74 %R**	**71 %R**	**79 %R**
2-Fluorobiphenyl (surr)	**58 %R**	**77 %R**	**77 %R**	**81 %R**
p-Terphenyl-D14 (surr)	**52 %R**	**71 %R**	**81 %R**	**73 %R**

Lagoon 1 - 20220815: Detection limits elevated due to low solids content and sample matrix causing internal standard failure in undiluted analysis.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 2 20220815	Lagoon 3 Soil 20220815	Lagoon 3 20220815	Lagoon 4 Soil 20220815
Lab Sample ID:	247647.06	247647.07	247647.08	247647.09
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/16/22	8/16/22
Date of Analysis:	8/18/22	8/17/22	8/18/22	8/17/22
Analyst:	JMR	JMR	JMR	JMR
Method:	8270D	8270D	8270D	8270D
Dilution Factor:	7	1	7	1
alpha-Terpineol	< 2	< 0.4	< 2	< 0.4
Phenol	< 0.5	< 0.07	< 0.5	< 0.07
2-Chlorophenol	< 0.5	< 0.07	< 0.5	< 0.07
2,4-Dichlorophenol	< 0.5	< 0.07	< 0.5	< 0.07
2,4,5-Trichlorophenol	< 0.5	< 0.07	< 0.5	< 0.07
2,4,6-Trichlorophenol	< 0.5	< 0.07	< 0.5	< 0.07
Pentachlorophenol	< 2	< 0.4	< 2	< 0.4
2-Nitrophenol	< 2	< 0.4	< 2	< 0.4
4-Nitrophenol	< 2	< 0.4	< 2	< 0.4
2,4-Dinitrophenol	< 5	< 0.7	< 4	< 0.7
2-Methylphenol	< 0.5	< 0.07	< 0.5	< 0.07
3/4-Methylphenol	< 0.5	< 0.07	< 0.5	< 0.07
2,4-Dimethylphenol	< 2	< 0.4	< 2	< 0.4
4-Chloro-3-methylphenol	< 0.5	< 0.07	< 0.5	< 0.07
4,6-Dinitro-2-methylphenol	< 2	< 0.4	< 2	< 0.4
Benzoic Acid	< 20	< 4	< 20	< 4
N-Nitrosodimethylamine	< 0.5	< 0.07	< 0.5	< 0.07
n-Nitroso-di-n-propylamine	< 0.3	< 0.04	< 0.3	< 0.04
n-Nitrosodiphenylamine	< 0.5	< 0.07	< 0.5	< 0.07
bis(2-Chloroethyl)ether	< 0.5	< 0.07	< 0.5	< 0.07
bis(2-chloroisopropyl)ether	< 0.5	< 0.07	< 0.5	< 0.07
bis(2-Chloroethoxy)methane	< 0.5	< 0.07	< 0.5	< 0.07
1,3-Dichlorobenzene	< 0.5	< 0.07	< 0.5	< 0.07
Acetophenone	< 5	< 0.7	< 4	< 0.7
1,4-Dichlorobenzene	**1.0**	< 0.07	< 0.5	< 0.07
1,2-Dichlorobenzene	< 0.5	< 0.07	< 0.5	< 0.07
1,2,4-Trichlorobenzene	< 0.5	< 0.07	< 0.5	< 0.07
2-Chloronaphthalene	< 0.5	< 0.07	< 0.5	< 0.07
4-Chlorophenyl-phenylether	< 0.5	< 0.07	< 0.5	< 0.07
4-Bromophenyl-phenylether	< 0.5	< 0.07	< 0.5	< 0.07
Hexachloroethane	< 0.5	< 0.07	< 0.5	< 0.07
Hexachlorobutadiene	< 0.5	< 0.07	< 0.5	< 0.07
Hexachlorocyclopentadiene	< 2	< 0.4	< 2	< 0.4
Hexachlorobenzene	< 0.5	< 0.07	< 0.5	< 0.07
4-Chloroaniline	**2.1**	**0.25**	**2.7**	**0.13**
2,3-Dichloroaniline	< 0.5	< 0.07	< 0.5	< 0.07
2-Nitroaniline	< 2	< 0.4	< 2	< 0.4
3-Nitroaniline	< 2	< 0.4	< 2	< 0.4
4-Nitroaniline	< 2	< 0.4	< 2	< 0.4
Aniline	< 0.5	< 0.07	< 0.5	< 0.07
Benzyl alcohol	< 5	< 0.7	< 4	< 0.7
Nitrobenzene	< 0.5	< 0.07	< 0.5	< 0.07
Isophorone	< 0.5	< 0.07	< 0.5	< 0.07
2,4-Dinitrotoluene	< 1	< 0.14	< 0.9	< 0.14
2,6-Dinitrotoluene	< 1	< 0.14	< 0.9	< 0.14
Benzidine (estimated)	< 2	< 0.4	< 2	< 0.4
3,3'-Dichlorobenzidine	< 0.5	< 0.07	< 0.5	< 0.07

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 2 20220815	Lagoon 3 Soil 20220815	Lagoon 3 20220815	Lagoon 4 Soil 20220815
Lab Sample ID:	247647.06	247647.07	247647.08	247647.09
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/16/22	8/16/22
Date of Analysis:	8/18/22	8/17/22	8/18/22	8/17/22
Analyst:	JMR	JMR	JMR	JMR
Method:	8270D	8270D	8270D	8270D
Dilution Factor:	7	1	7	1
Pyridine	< 2	< 0.4	< 2	< 0.4
Azobenzene	< 0.5	< 0.07	< 0.5	< 0.07
Carbazole	< 0.5	< 0.07	< 0.5	< 0.07
Dimethylphthalate	< 0.5	< 0.07	< 0.5	< 0.07
Diethylphthalate	< 2	< 0.4	< 2	< 0.4
Di-n-butylphthalate	< 2	< 0.4	< 2	< 0.4
Butylbenzylphthalate	< 2	< 0.4	< 2	< 0.4
bis(2-Ethylhexyl)phthalate	**7**	< 0.4	< 2	< 0.4
Di-n-octylphthalate	< 2	< 0.4	< 2	< 0.4
Dibenzofuran	< 0.5	< 0.07	< 0.5	< 0.07
Naphthalene	< 0.5	< 0.07	< 0.5	< 0.07
2-Methylnaphthalene	< 0.5	< 0.07	< 0.5	< 0.07
1-Methylnaphthalene	< 0.5	< 0.07	< 0.5	< 0.07
Acenaphthylene	< 0.5	< 0.07	< 0.5	< 0.07
Acenaphthene	< 0.5	< 0.07	< 0.5	< 0.07
Fluorene	< 0.5	< 0.07	< 0.5	< 0.07
Phenanthrene	< 0.5	< 0.07	< 0.5	< 0.07
Anthracene	< 0.5	< 0.07	< 0.5	< 0.07
Fluoranthene	< 0.5	< 0.07	< 0.5	< 0.07
Pyrene	< 0.5	< 0.07	< 0.5	< 0.07
Benzo[a]anthracene	< 0.5	< 0.07	< 0.5	< 0.07
Chrysene	< 0.5	< 0.07	< 0.5	< 0.07
Benzo[b]fluoranthene	< 0.5	< 0.07	< 0.5	< 0.07
Benzo[k]fluoranthene	< 0.5	< 0.07	< 0.5	< 0.07
Benzo[a]pyrene	< 0.5	< 0.07	< 0.5	< 0.07
Indeno[1,2,3-cd]pyrene	< 0.5	< 0.07	< 0.5	< 0.07
Dibenz[a,h]anthracene	< 0.5	< 0.07	< 0.5	< 0.07
Benzo[g,h,i]perylene	< 0.5	< 0.07	< 0.5	< 0.07
n-Decane	< 2	< 0.4	< 2	< 0.4
n-Octadecane	< 2	< 0.4	< 2	< 0.4
2-Fluorophenol (surr)	**49 %R**	**65 %R**	**50 %R**	**64 %R**
Phenol-d6 (surr)	**57 %R**	**70 %R**	**58 %R**	**71 %R**
2,4,6-Tribromophenol (surr)	**68 %R**	**85 %R**	**70 %R**	**84 %R**
Nitrobenzene-D5 (surr)	**64 %R**	**76 %R**	**64 %R**	**76 %R**
2-Fluorobiphenyl (surr)	**67 %R**	**77 %R**	**67 %R**	**78 %R**
p-Terphenyl-D14 (surr)	**69 %R**	**70 %R**	**70 %R**	**71 %R**

Lagoon 2 20220815, Lagoon 3 20220815: Detection limits elevated due to low solids content and sample matrix causing internal standard failure in undiluted analysis.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 4 20220815	FDup 20220815	Lagoon 5 Soil 20220815	Lagoon 5 20220815
Lab Sample ID:	247647.1	247647.11	247647.12	247647.13
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/16/22	8/16/22
Date of Analysis:	8/18/22	8/18/22	8/17/22	8/18/22
Analyst:	JMR	JMR	JMR	JMR
Method:	8270D	8270D	8270D	8270D
Dilution Factor:	8	8	1	7
alpha-Terpineol	< 3	< 3	< 0.34	< 2
Phenol	< 0.6	< 0.6	< 0.07	< 0.5
2-Chlorophenol	< 0.6	< 0.6	< 0.07	< 0.5
2,4-Dichlorophenol	< 0.6	< 0.6	< 0.07	< 0.5
2,4,5-Trichlorophenol	< 0.6	< 0.6	< 0.07	< 0.5
2,4,6-Trichlorophenol	< 0.6	< 0.6	< 0.07	< 0.5
Pentachlorophenol	< 3	< 3	< 0.34	< 2
2-Nitrophenol	< 3	< 3	< 0.34	< 2
4-Nitrophenol	< 3	< 3	< 0.34	< 2
2,4-Dinitrophenol	< 6	< 5	< 0.7	< 5
2-Methylphenol	< 0.6	< 0.6	< 0.07	< 0.5
3/4-Methylphenol	< 0.6	< 0.6	< 0.07	< 0.5
2,4-Dimethylphenol	< 3	< 3	< 0.34	< 2
4-Chloro-3-methylphenol	< 0.6	< 0.6	< 0.07	< 0.5
4,6-Dinitro-2-methylphenol	< 3	< 3	< 0.34	< 2
Benzoic Acid	< 30	< 30	< 3.4	< 20
N-Nitrosodimethylamine	< 0.6	< 0.6	< 0.07	< 0.5
n-Nitroso-di-n-propylamine	< 0.3	< 0.3	< 0.04	< 0.3
n-Nitrosodiphenylamine	< 0.6	< 0.6	< 0.07	< 0.5
bis(2-Chloroethyl)ether	< 0.6	< 0.6	< 0.07	< 0.5
bis(2-chloroisopropyl)ether	< 0.6	< 0.6	< 0.07	< 0.5
bis(2-Chloroethoxy)methane	< 0.6	< 0.6	< 0.07	< 0.5
1,3-Dichlorobenzene	< 0.6	< 0.6	< 0.07	< 0.5
Acetophenone	< 6	< 5	< 0.7	< 5
1,4-Dichlorobenzene	**1.6**	**1.2**	< 0.07	< 0.5
1,2-Dichlorobenzene	< 0.6	< 0.6	< 0.07	< 0.5
1,2,4-Trichlorobenzene	< 0.6	< 0.6	< 0.07	< 0.5
2-Chloronaphthalene	< 0.6	< 0.6	< 0.07	< 0.5
4-Chlorophenyl-phenylether	< 0.6	< 0.6	< 0.07	< 0.5
4-Bromophenyl-phenylether	< 0.6	< 0.6	< 0.07	< 0.5
Hexachloroethane	< 0.6	< 0.6	< 0.07	< 0.5
Hexachlorobutadiene	< 0.6	< 0.6	< 0.07	< 0.5
Hexachlorocyclopentadiene	< 3	< 3	< 0.34	< 2
Hexachlorobenzene	< 0.6	< 0.6	< 0.07	< 0.5
4-Chloroaniline	**1.7**	**1.6**	**0.17**	**0.86**
2,3-Dichloroaniline	< 0.6	< 0.6	< 0.07	< 0.5
2-Nitroaniline	< 3	< 3	< 0.34	< 2
3-Nitroaniline	< 3	< 3	< 0.34	< 2
4-Nitroaniline	< 3	< 3	< 0.34	< 2
Aniline	< 0.6	< 0.6	< 0.07	< 0.5
Benzyl alcohol	< 6	< 5	< 0.7	< 5
Nitrobenzene	< 0.6	< 0.6	< 0.07	< 0.5
Isophorone	< 0.6	< 0.6	< 0.07	< 0.5
2,4-Dinitrotoluene	< 1	< 1	< 0.14	< 0.9
2,6-Dinitrotoluene	< 1	< 1	< 0.14	< 0.9
Benzidine (estimated)	< 3	< 3	< 0.34	< 2
3,3'-Dichlorobenzidine	< 0.6	< 0.6	< 0.07	< 0.5

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 4 20220815	FDup 20220815	Lagoon 5 Soil 20220815	Lagoon 5 20220815
Lab Sample ID:	247647.1	247647.11	247647.12	247647.13
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/16/22	8/16/22
Date of Analysis:	8/18/22	8/18/22	8/17/22	8/18/22
Analyst:	JMR	JMR	JMR	JMR
Method:	8270D	8270D	8270D	8270D
Dilution Factor:	8	8	1	7
Pyridine	< 3	< 3	< 0.34	< 2
Azobenzene	< 0.6	< 0.6	< 0.07	< 0.5
Carbazole	< 0.6	< 0.6	< 0.07	< 0.5
Dimethylphthalate	< 0.6	< 0.6	< 0.07	< 0.5
Diethylphthalate	< 3	< 3	< 0.34	< 2
Di-n-butylphthalate	< 3	< 3	< 0.34	< 2
Butylbenzylphthalate	< 3	< 3	< 0.34	< 2
bis(2-Ethylhexyl)phthalate	< 3	< 3	< 0.34	< 2
Di-n-octylphthalate	< 3	< 3	< 0.34	< 2
Dibenzofuran	< 0.6	< 0.6	< 0.07	< 0.5
Naphthalene	< 0.6	< 0.6	< 0.07	< 0.5
2-Methylnaphthalene	< 0.6	< 0.6	< 0.07	< 0.5
1-Methylnaphthalene	< 0.6	< 0.6	< 0.07	< 0.5
Acenaphthylene	< 0.6	< 0.6	< 0.07	< 0.5
Acenaphthene	< 0.6	< 0.6	< 0.07	< 0.5
Fluorene	< 0.6	< 0.6	< 0.07	< 0.5
Phenanthrene	**1.2**	**1.2**	< 0.07	< 0.5
Anthracene	< 0.6	< 0.6	< 0.07	< 0.5
Fluoranthene	**2.4**	**2.0**	< 0.07	**0.55**
Pyrene	**1.7**	**1.5**	< 0.07	< 0.5
Benzo[a]anthracene	**0.91**	**0.90**	< 0.07	< 0.5
Chrysene	**1.2**	**0.90**	< 0.07	< 0.5
Benzo[b]fluoranthene	**1.7**	**1.4**	< 0.07	< 0.5
Benzo[k]fluoranthene	**0.62**	< 0.6	< 0.07	< 0.5
Benzo[a]pyrene	**0.99**	**0.90**	< 0.07	< 0.5
Indeno[1,2,3-cd]pyrene	< 0.6	< 0.6	< 0.07	< 0.5
Dibenz[a,h]anthracene	< 0.6	< 0.6	< 0.07	< 0.5
Benzo[g,h,i]perylene	< 0.6	< 0.6	< 0.07	< 0.5
n-Decane	< 3	< 3	< 0.34	< 2
n-Octadecane	< 3	< 3	< 0.34	< 2
2-Fluorophenol (surr)	**52 %R**	**52 %R**	**63 %R**	**59 %R**
Phenol-d6 (surr)	**63 %R**	**61 %R**	**67 %R**	**64 %R**
2,4,6-Tribromophenol (surr)	**76 %R**	**75 %R**	**83 %R**	**75 %R**
Nitrobenzene-D5 (surr)	**68 %R**	**65 %R**	**72 %R**	**70 %R**
2-Fluorobiphenyl (surr)	**70 %R**	**69 %R**	**74 %R**	**72 %R**
p-Terphenyl-D14 (surr)	**72 %R**	**69 %R**	**75 %R**	**72 %R**

Lagoon 4 20220815, FDup 20220815, Lagoon 5 20220815: Detection limits elevated due to low solids content and sample matrix causing internal standard failure in undiluted analysis.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	North Berm 20220815	South Berm 20220815
Lab Sample ID:	247647.14	247647.15
Matrix:	soil	soil
Date Sampled:	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22
Units:	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22
Date of Analysis:	8/17/22	8/17/22
Analyst:	JMR	JMR
Method:	8270D	8270D
Dilution Factor:	1	1
alpha-Terpineol	< 0.4	< 0.34
Phenol	< 0.07	< 0.07
2-Chlorophenol	< 0.07	< 0.07
2,4-Dichlorophenol	< 0.07	< 0.07
2,4,5-Trichlorophenol	< 0.07	< 0.07
2,4,6-Trichlorophenol	< 0.07	< 0.07
Pentachlorophenol	< 0.4	< 0.34
2-Nitrophenol	< 0.4	< 0.34
4-Nitrophenol	< 0.4	< 0.34
2,4-Dinitrophenol	< 0.7	< 0.7
2-Methylphenol	< 0.07	< 0.07
3/4-Methylphenol	< 0.07	< 0.07
2,4-Dimethylphenol	< 0.4	< 0.34
4-Chloro-3-methylphenol	< 0.07	< 0.07
4,6-Dinitro-2-methylphenol	< 0.4	< 0.34
Benzoic Acid	< 4	< 3.4
N-Nitrosodimethylamine	< 0.07	< 0.07
n-Nitroso-di-n-propylamine	< 0.04	< 0.04
n-Nitrosodiphenylamine	< 0.07	< 0.07
bis(2-Chloroethyl)ether	< 0.07	< 0.07
bis(2-chloroisopropyl)ether	< 0.07	< 0.07
bis(2-Chloroethoxy)methane	< 0.07	< 0.07
1,3-Dichlorobenzene	< 0.07	< 0.07
Acetophenone	< 0.7	< 0.7
1,4-Dichlorobenzene	< 0.07	< 0.07
1,2-Dichlorobenzene	< 0.07	< 0.07
1,2,4-Trichlorobenzene	< 0.07	< 0.07
2-Chloronaphthalene	< 0.07	< 0.07
4-Chlorophenyl-phenylether	< 0.07	< 0.07
4-Bromophenyl-phenylether	< 0.07	< 0.07
Hexachloroethane	< 0.07	< 0.07
Hexachlorobutadiene	< 0.07	< 0.07
Hexachlorocyclopentadiene	< 0.4	< 0.34
Hexachlorobenzene	< 0.07	< 0.07
4-Chloroaniline	< 0.07	< 0.07
2,3-Dichloroaniline	< 0.07	< 0.07
2-Nitroaniline	< 0.4	< 0.34
3-Nitroaniline	< 0.4	< 0.34
4-Nitroaniline	< 0.4	< 0.34
Aniline	< 0.07	< 0.07
Benzyl alcohol	< 0.7	< 0.7
Nitrobenzene	< 0.07	< 0.07
Isophorone	< 0.07	< 0.07
2,4-Dinitrotoluene	< 0.14	< 0.14
2,6-Dinitrotoluene	< 0.14	< 0.14
Benzidine (estimated)	< 0.4	< 0.34
3,3'-Dichlorobenzidine	< 0.07	< 0.07

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	North Berm 20220815	South Berm 20220815
Lab Sample ID:	247647.14	247647.15
Matrix:	soil	soil
Date Sampled:	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22
Units:	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22
Date of Analysis:	8/17/22	8/17/22
Analyst:	JMR	JMR
Method:	8270D	8270D
Dilution Factor:	1	1
Pyridine	< 0.4	< 0.34
Azobenzene	< 0.07	< 0.07
Carbazole	< 0.07	< 0.07
Dimethylphthalate	< 0.07	< 0.07
Diethylphthalate	< 0.4	< 0.34
Di-n-butylphthalate	< 0.4	< 0.34
Butylbenzylphthalate	< 0.4	< 0.34
bis(2-Ethylhexyl)phthalate	< 0.4	< 0.34
Di-n-octylphthalate	< 0.4	< 0.34
Dibenzofuran	< 0.07	< 0.07
Naphthalene	< 0.07	< 0.07
2-Methylnaphthalene	< 0.07	< 0.07
1-Methylnaphthalene	< 0.07	< 0.07
Acenaphthylene	< 0.07	< 0.07
Acenaphthene	< 0.07	< 0.07
Fluorene	< 0.07	< 0.07
Phenanthrene	< 0.07	< 0.07
Anthracene	< 0.07	< 0.07
Fluoranthene	< 0.07	< 0.07
Pyrene	< 0.07	< 0.07
Benzo[a]anthracene	< 0.07	< 0.07
Chrysene	< 0.07	< 0.07
Benzo[b]fluoranthene	< 0.07	< 0.07
Benzo[k]fluoranthene	< 0.07	< 0.07
Benzo[a]pyrene	< 0.07	< 0.07
Indeno[1,2,3-cd]pyrene	< 0.07	< 0.07
Dibenz[a,h]anthracene	< 0.07	< 0.07
Benzo[g,h,i]perylene	< 0.07	< 0.07
n-Decane	< 0.4	< 0.34
n-Octadecane	< 0.4	< 0.34
2-Fluorophenol (surr)	**70 %R**	**61 %R**
Phenol-d6 (surr)	**75 %R**	**68 %R**
2,4,6-Tribromophenol (surr)	**86 %R**	**86 %R**
Nitrobenzene-D5 (surr)	**82 %R**	**74 %R**
2-Fluorobiphenyl (surr)	**80 %R**	**76 %R**
p-Terphenyl-D14 (surr)	**76 %R**	**75 %R**

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 1 - 20220815	Lagoon 1 Soil - 20220815	Lagoon 2 Soil - 20220815	Lagoon 2 20220815
Lab Sample ID:	247647.02	247647.03	247647.05	247647.06
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
% Solid:	53	94.6	95.5	67.5
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/16/22	8/16/22
Date of Analysis:	8/17/22	8/17/22	8/17/22	8/17/22
Analyst:	MB	MB	MB	MB
Extraction Method:	3540C	3540C	3540C	3540C
Analysis Method:	8082A	8082A	8082A	8082A
Dilution Factor:	2	1	1	1
PCB-1016	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1221	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1232	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1242	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1248	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1254	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1260	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1262	< 0.03	< 0.02	< 0.02	< 0.02
PCB-1268	< 0.03	< 0.02	< 0.02	< 0.02
TMX (surr)	**77 %R**	**74 %R**	**74 %R**	**87 %R**
DCB (surr)	**58 %R**	**71 %R**	**76 %R**	**62 %R**

Acid clean-up was performed on the samples and associated batch QC.

Lagoon 1 - 20220815: Detection limits elevated due to low solids content.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 3 Soil 20220815	Lagoon 3 20220815	Lagoon 4 Soil 20220815	Lagoon 4 20220815
Lab Sample ID:	247647.07	247647.08	247647.09	247647.1
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
% Solid:	95	74.4	94.9	58.6
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/16/22	8/16/22
Date of Analysis:	8/17/22	8/17/22	8/17/22	8/17/22
Analyst:	MB	MB	MB	MB
Extraction Method:	3540C	3540C	3540C	3540C
Analysis Method:	8082A	8082A	8082A	8082A
Dilution Factor:	1	1	1	2
PCB-1016	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1221	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1232	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1242	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1248	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1254	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1260	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1262	< 0.02	< 0.02	< 0.02	< 0.03
PCB-1268	< 0.02	< 0.02	< 0.02	< 0.03
TMX (surr)	**78 %R**	**83 %R**	**75 %R**	**96 %R**
DCB (surr)	**70 %R**	**66 %R**	**72 %R**	**70 %R**

Acid clean-up was performed on the samples and associated batch QC.

Lagoon 4 20220815: Detection limits elevated due to low solids content.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	FDup 20220815	Lagoon 5 Soil 20220815	Lagoon 5 20220815	North Berm 20220815
Lab Sample ID:	247647.11	247647.12	247647.13	247647.14
Matrix:	soil	soil	soil	soil
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22
% Solid:	61.4	98.2	71.4	92.4
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Extraction/Prep:	8/16/22	8/16/22	8/16/22	8/16/22
Date of Analysis:	8/17/22	8/17/22	8/17/22	8/17/22
Analyst:	MB	MB	MB	MB
Extraction Method:	3540C	3540C	3540C	3540C
Analysis Method:	8082A	8082A	8082A	8082A
Dilution Factor:	6	1	1	1
PCB-1016	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1221	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1232	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1242	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1248	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1254	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1260	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1262	< 0.1	< 0.02	< 0.02	< 0.02
PCB-1268	< 0.1	< 0.02	< 0.02	< 0.02
TMX (surr)	**72 %R**	**83 %R**	**87 %R**	**85 %R**
DCB (surr)	**56 %R**	**75 %R**	**63 %R**	**72 %R**

Acid clean-up was performed on the samples and associated batch QC.

FDup 20220815: Detection limits elevated due to sample matrix.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	South Berm 20220815
Lab Sample ID:	247647.15
Matrix:	soil
Date Sampled:	8/15/22
Date Received:	8/15/22
% Solid:	97.7
Units:	mg/kg
Date of Extraction/Prep:	8/16/22
Date of Analysis:	8/17/22
Analyst:	MB
Extraction Method:	3540C
Analysis Method:	8082A
Dilution Factor:	1

PCB-1016	< 0.02
PCB-1221	< 0.02
PCB-1232	< 0.02
PCB-1242	< 0.02
PCB-1248	< 0.02
PCB-1254	< 0.02
PCB-1260	< 0.02
PCB-1262	< 0.02
PCB-1268	< 0.02
TMX (surr)	**88 %R**
DCB (surr)	**78 %R**

Acid clean-up was performed on the samples and associated batch QC.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID: Lagoon 1 Soil - 20220815

Lab Sample ID: 247647.03

Matrix: soil

Date Sampled: 8/15/22

Date Received: 8/15/22

		Analysis			
	Units	Date	Time	Method	Analyst
Nitrate/Nitrite-N	**17**	mg/kg	08/19/22	17:49	353.2	KD
Ammonia-N	< 5	mg/kg	08/19/22	9:40	4500NH3D-11	OJ
TKN	**520**	mg/kg	08/18/22	16:11	$4500N_{org}C/NH3D$	OJ

Sample ID: EB 20220815

Lab Sample ID: 247647.04

Matrix: aqueous

Date Sampled: 8/15/22

Date Received: 8/15/22

		Analysis			
	Units	Date	Time	Method	Analyst
Nitrate/Nitrite-N	< 0.5	mg/L	08/16/22	9:47	353.2	KD
Ammonia-N	< 0.05	mg/L	08/19/22	11:29	TM NH3-001	GRS
TKN	< 0.5	mg/L	08/18/22	14:21	$4500N_{org}C/NH3D$	OJ
Total Phosphorus-P	< 0.01	mg/L	08/22/22	12:11	365.1	SEL
pH	**7.69**	SU	08/16/22	14:48	4500H+B-11	MKB

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 1 - 20220815	Lagoon 2 Soil - 20220815	Lagoon 2 20220815	Lagoon 3 Soil 20220815					
Lab Sample ID:	247647.02	247647.05	247647.06	247647.07					
Matrix:	soil	soil	soil	soil					
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22		Analysis			
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22	**Units**	**Date**	**Time**	**Method**	**Analyst**
Solids Total	**53**	**95.5**	**67.5**	**95**	Percent	08/16/22	12:00	2540G-11	MB
Nitrate/Nitrite-N	< 10	**32**	< 9	**44**	mg/kg	08/19/22	17:36	353.2	KD
Ammonia-N	**350**	< 5	**15**	**21**	mg/kg	08/19/22	9:40	4500NH3D-11	OJ
TKN	**9300**	**620**	**4700**	**600**	mg/kg	08/18/22	16:08	$4500N_{org}C/NH3D$	OJ
pH	**6.77**	**5.01**	**6.19**	**4.35**	SU	08/16/22	12:00	9045D	PMC

Sample ID:	Lagoon 3 20220815	Lagoon 4 Soil 20220815	Lagoon 4 20220815	FDup 20220815					
Lab Sample ID:	247647.08	247647.09	247647.1	247647.11					
Matrix:	soil	soil	soil	soil					
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22		Analysis			
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22	**Units**	**Date**	**Time**	**Method**	**Analyst**
Solids Total	**74.4**	**94.9**	**58.6**	**61.4**	Percent	08/16/22	12:00	2540G-11	MB
Nitrate/Nitrite-N	< 8	**11**	< 10	< 10	mg/kg	08/19/22	18:43	353.2	KD
Ammonia-N	**76**	< 5	**170**	**130**	mg/kg	08/19/22	9:40	4500NH3D-11	OJ
TKN	**5400**	**400**	**7200**	**4400**	mg/kg	08/18/22	16:22	$4500N_{org}C/NH3D$	OJ
pH	**6.65**	**5.1**	**6.78**	**6.76**	SU	08/16/22	12:00	9045D	PMC

Lagoon 1- 20220815: Due to the pH sample matrix, the ratio of reagent water to sample was increased from 1:1 to 2:1. The reporting limit for Nitrate/Nitrite-N has been elevated due to the sample matrix.
Lagoon 2 20220815: The reporting limit for Nitrate/Nitrite-N has been elevated due to the sample matrix.
Lagoon 3 20220815: The reporting limit for Nitrate/Nitrite-N has been elevated due to the sample matrix.
Lagoon 4 20220815: Due to the pH sample matrix, the ratio of reagent water to sample was increased from 1:1 to 2:1. The reporting limit for Nitrate-Nitrite-N has been elevated due to the sample matrix.
FDup 20220815: Due to the pH sample matrix, the ratio of reagent water to sample was increased from 1:1 to 2:1. The reporting limit for Nitrate/Nitrite-N has been elevated due to the sample matrix. The TKN matrix spike deviated above the acceptance criteria.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 5 Soil 20220815	Lagoon 5 20220815	North Berm 20220815	South Berm 20220815					
Lab Sample ID:	247647.12	247647.13	247647.14	247647.15					
Matrix:	soil	soil	soil	soil					
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22		Analysis			
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22	**Units**	**Date**	**Time**	**Method**	**Analyst**
Solids Total	**98.2**	**71.4**	**92.4**	**97.7**	Percent	8/16/22	12:00	2540G-11	MB
Nitrate/Nitrite-N	**31**	< 8	< 7	< 7	mg/kg	8/19/22	20:44	353.2	KD
Ammonia-N	< 5	**82**	< 5	< 5	mg/kg	8/19/22	9:40	4500NH3D-11	OJ
TKN	**370**	**2000**	**490**	**550**	mg/kg	8/18/22	16:47	$4500N_{org}C/NH3D$	OJ
pH	**4.99**	**6.3**	**5.09**	**5.15**	SU	8/16/22	12:00	9045D	PMC

Lagoon 5 20220815: The reporting limit for Nitrate/Nitrite-N has been elevated due to the sample matrix.

North Berm 20220815: The reporting limit for Nitrate/Nitrite-N has been elevated due to the sample matrix.

South Berm 20220815: The reporting limit for Nitrate/Nitrite-N has been elevated due to the sample matrix.

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID: EB 20220815

Lab Sample ID: 247647.04
Matrix: aqueous
Date Sampled: 8/15/22
Date Received: 8/15/22

		Analytical Matrix	Units	Date of Analysis	Method	Analyst
Arsenic	< 0.0005	AqTot	mg/L	8/19/22	200.8	DS
Cadmium	< 0.001	AqTot	mg/L	8/19/22	200.8	DS
Chromium	< 0.001	AqTot	mg/L	8/19/22	200.8	DS
Copper	< 0.001	AqTot	mg/L	8/19/22	200.8	DS
Lead	< 0.001	AqTot	mg/L	8/19/22	200.8	DS
Mercury	< 0.0001	AqTot	mg/L	8/19/22	200.8	DS
Molybdenum	< 0.001	AqTot	mg/L	8/19/22	200.8	DS
Nickel	< 0.001	AqTot	mg/L	8/19/22	200.8	DS
Potassium	< 0.05	AqTot	mg/L	8/19/22	200.8	DS
Selenium	< 0.001	AqTot	mg/L	8/19/22	200.8	DS
Zinc	< 0.005	AqTot	mg/L	8/19/22	200.8	DS

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	Lagoon 1 - 20220815	Lagoon 1 Soil - 20220815	Lagoon 2 Soil - 20220815	Lagoon 2 20220815					
Lab Sample ID:	247647.02	247647.03	247647.05	247647.06					
Matrix:	soil	soil	soil	soil					
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22					
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Arsenic	**5.8**	**2.3**	**2.1**	**4.1**	SolTotDry	mg/kg	8/18/22	6020A	DS
Cadmium	**0.64**	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	8/18/22	6020A	DS
Chromium	**12**	**5.4**	**5.8**	**11**	SolTotDry	mg/kg	8/18/22	6020A	DS
Copper	**220**	**37**	**39**	**140**	SolTotDry	mg/kg	8/18/22	6020A	DS
Lead	**14**	**5.4**	**6.8**	**14**	SolTotDry	mg/kg	8/18/22	6020A	DS
Mercury	**0.34**	**0.12**	**0.10**	**0.82**	SolTotDry	mg/kg	8/18/22	6020A	DS
Molybdenum	**5.4**	**0.57**	**0.52**	**2.4**	SolTotDry	mg/kg	8/18/22	6020A	DS
Nickel	**12**	**4.1**	**4.1**	**9.0**	SolTotDry	mg/kg	8/18/22	6020A	DS
Phosphorus	**12000**	**820**	**840**	**2600**	SolTotDry	mg/kg	8/18/22	6020A	DS
Potassium	**590**	**470**	**500**	**710**	SolTotDry	mg/kg	8/18/22	6020A	DS
Selenium	**2.2**	< 0.5	< 0.5	**1.6**	SolTotDry	mg/kg	8/18/22	6020A	DS
Zinc	**390**	**45**	**57**	**210**	SolTotDry	mg/kg	8/18/22	6020A	DS

Sample ID:	Lagoon 3 Soil 20220815	Lagoon 3 20220815	Lagoon 4 Soil 20220815	Lagoon 4 20220815					
Lab Sample ID:	247647.07	247647.08	247647.09	247647.1					
Matrix:	soil	soil	soil	soil					
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22					
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Arsenic	**2.6**	**5.8**	**1.6**	**4.7**	SolTotDry	mg/kg	8/18/22	6020A	DS
Cadmium	< 0.5	< 0.5	< 0.5	**0.64**	SolTotDry	mg/kg	8/18/22	6020A	DS
Chromium	**5.3**	**7.8**	**4.2**	**34**	SolTotDry	mg/kg	8/18/22	6020A	DS
Copper	**38**	**150**	**36**	**430**	SolTotDry	mg/kg	8/18/22	6020A	DS
Lead	**4.8**	**12**	**6.2**	**22**	SolTotDry	mg/kg	8/18/22	6020A	DS
Mercury	**0.14**	**0.23**	**0.14**	**0.36**	SolTotDry	mg/kg	8/18/22	6020A	DS
Molybdenum	**0.63**	**2.7**	< 0.5	**13**	SolTotDry	mg/kg	8/18/22	6020A	DS
Nickel	**4.0**	**6.3**	**2.9**	**16**	SolTotDry	mg/kg	8/18/22	6020A	DS
Phosphorus	**800**	**1700**	**720**	**4700**	SolTotDry	mg/kg	8/18/22	6020A	DS
Potassium	**600**	**530**	**400**	**680**	SolTotDry	mg/kg	8/18/22	6020A	DS
Selenium	< 0.5	**1.5**	< 0.5	**1.0**	SolTotDry	mg/kg	8/18/22	6020A	DS
Zinc	**52**	**260**	**36**	**570**	SolTotDry	mg/kg	8/18/22	6020A	DS

LABORATORY REPORT

EAI ID#: **247647**

Client: **Nobis Group**

Client Designation: **Hopkinton Septage Lagoons | 030157.000**

Sample ID:	FDup 20220815	Lagoon 5 Soil 20220815	Lagoon 5 20220815	North Berm 20220815					
Lab Sample ID:	247647.11	247647.12	247647.13	247647.14					
Matrix:	soil	soil	soil	soil					
Date Sampled:	8/15/22	8/15/22	8/15/22	8/15/22					
Date Received:	8/15/22	8/15/22	8/15/22	8/15/22	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Arsenic	**3.8**	**1.7**	**4.1**	**1.7**	SolTotDry	mg/kg	8/18/22	6020A	DS
Cadmium	< 0.5	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	8/18/22	6020A	DS
Chromium	**9.2**	**4.0**	**15**	**4.9**	SolTotDry	mg/kg	8/18/22	6020A	DS
Copper	**140**	**21**	**79**	**19**	SolTotDry	mg/kg	8/18/22	6020A	DS
Lead	**10**	**4.8**	**16**	**5.7**	SolTotDry	mg/kg	8/18/22	6020A	DS
Mercury	**0.17**	< 0.1	**0.26**	< 0.1	SolTotDry	mg/kg	8/18/22	6020A	DS
Molybdenum	**2.6**	< 0.5	**2.8**	< 0.5	SolTotDry	mg/kg	8/18/22	6020A	DS
Nickel	**6.2**	**3.1**	**8.0**	**3.2**	SolTotDry	mg/kg	8/18/22	6020A	DS
Phosphorus	**4400**	**500**	**3800**	**540**	SolTotDry	mg/kg	8/18/22	6020A	DS
Potassium	**390**	**390**	**570**	**540**	SolTotDry	mg/kg	8/18/22	6020A	DS
Selenium	**1.2**	< 0.5	**1.0**	< 0.5	SolTotDry	mg/kg	8/18/22	6020A	DS
Zinc	**260**	**32**	**170**	**27**	SolTotDry	mg/kg	8/18/22	6020A	DS

Sample ID:	South Berm 20220815						
Lab Sample ID:	247647.15						
Matrix:	soil						
Date Sampled:	8/15/22						
Date Received:	8/15/22	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**	
Arsenic	**1.7**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Cadmium	< 0.5	SolTotDry	mg/kg	8/18/22	6020A	DS	
Chromium	**4.4**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Copper	**30**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Lead	**5.6**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Mercury	**0.12**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Molybdenum	< 0.5	SolTotDry	mg/kg	8/18/22	6020A	DS	
Nickel	**2.7**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Phosphorus	**650**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Potassium	**390**	SolTotDry	mg/kg	8/18/22	6020A	DS	
Selenium	< 0.5	SolTotDry	mg/kg	8/18/22	6020A	DS	
Zinc	**25**	SolTotDry	mg/kg	8/18/22	6020A	DS	

CHAIN-OF-CUSTODY RECORD

247647

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

SAMPLE I.D.	SAMPLING DATE/TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 / 524.2 MTBE ONLY / 8260 / 624 / VTICs / 1,4 DIOXANE / 8021 / 8015 GRO / MAVPH	SVOC: 8270 / 625 / ABN / PAH / EDB / DBCP / TPH8100 / L1 / L2 / 8015 DRO / MAEPH / PEST 608 / PEST 8081 / PCB 608 / PCB 8082 / OIL & GREASE 1664 / TPH 1664	TCLP: TCLP 1311 / VOC / CBOD / TS / BR / NO2 / PEST / ABN / HERB / TSS / CL / NO3 / CBOD / TDS / F / SO4 / NO2/NO3 / TKN / NH3 / O. PHOS. / T. PHOS / T. RES. CHLORINE / pH / SPEC. CON. / T. ALK. / COD / PHENOLS / TOC / DOC / TOTAL CYANIDE / TOTAL SULFIDE / REACTIVE CYANIDE / REACTIVE SULFIDE / FLASHPOINT / IGNITABILITY / TOTAL COLIFORM / FECAL COLIFORM / E. COLI / ENTEROCOCCI / HETEROTROPHIC PLATE COUNT	DISSOLVED METALS (LIST BELOW) / TOTAL METALS (LIST BELOW)	OTHER: % Solids	# OF CONTAINERS	NOTES MEOH VIAL #
Trip Blank 20220815	8/15/2022 0800	S	C	X				3
Lagoon 1 - 20220815	1010			X	X	X		3
Lagoon 1 - Soil 20220815	0945			X	X	X	**	3
EB 20220815	0915	W	G	X	X	X		3
Lagoon 2 Soil - 20220815	1045	S	C	X	X	X		3
Lagoon 2 20220815	1100			X	X	X		3
Lagoon 3 Soil 20220815	1140			X	X	X		3
Lagoon 3 20220815	1200			X	X	X		3
Lagoon 4 Soil 20220815	1230			X	X	X		3
Lagoon 4 20220815	1255			X	X	X		3

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: Tim Andrews

COMPANY: Nobis Group

ADDRESS: 18 Chenell Dr.

CITY: Concord STATE: NH ZIP: 03301

PHONE: 603-224-4182 EXT.:

E-MAIL: TAndrews@Nobis-Group.com

SITE NAME: Hopkinton Septage Lagoons

PROJECT #: 030157.000

STATE: (NH) MA ME VT OTHER:

REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:

QUOTE #: PO #:

QA/QC REPORTING

(A) B C

MA MCP

TEMP. 2-5 °C

ICE? (YES) NO

REPORTING OPTIONS

PRELIMS: YES OR NO

ELECTRONIC OPTIONS

PDF EXCEL

EQUIS

OTHER

TURN AROUND TIME

24hr* 48hr*

3-4 Days*

5 Day (7 Day)

10 Day

*Pre-approval Required

SAMPLER(S): L. Cox, J. Cumberland

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
[signature]	Aug 15 2022	1650	[signature]
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:

METALS: 8 RCRA 13 PP Fe, Mn (Pb, Cu)

OTHER METALS: As, Cd, Cr, Hg, Mo, Ni, Se, Zn, K

SAMPLES FIELD FILTERED? ☐ YES ☐ NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

** ABN vs. PAH per client 8/17/22 cj

SITE HISTORY:

SUSPECTED CONTAMINATION:

FIELD READINGS:

Eastern Analytical, Inc.
professional laboratory and drilling services
51 Antrim Avenue | CONCORD, NH 03301 | TEL: 603.228.0525 | 1.800.287.0525 | E-MAIL: CUSTOMERSERVICE@EASTERNANALYTICAL.COM | WWW.EASTERNANALYTICAL.COM

(WHITE: Lab Copy GREEN: Customer Copy)

CHAIN-OF-CUSTODY RECORD

247647

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

SAMPLE I.D.	SAMPLING DATE/TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 / 524.2 MTBE ONLY	VOC: (8260) 624 VTICs / 1,4 DIOXANE	VOC: 8021	VOC: 8015 GRO MAVPH	SVOC: 8270 (ABN) ~~(PAH)~~ 625 **EDB DBCP	SVOC: TPH8100 L1 L2	SVOC: 8015 DRO MAEPH	SVOC: PEST 608 PCB 608 / PEST 8081 (PCB 8082)	SVOC: OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 ABN METALS / VOC PEST HERB	INORGANICS: BOD CBOD / TS TSS TDS	INORGANICS: BR Cl F SO_4 / NO_2 NO_3 (NO_3NO_2)	INORGANICS: (TKN) (NH_3) TN / (T. PHOS.) O. PHOS.	INORGANICS: (pH) T. RES. CHLORINE / SPEC. CON. T. ALK.	INORGANICS: COD PHENOLS TOC DOC	INORGANICS: TOTAL CYANIDE TOTAL SULFIDE	INORGANICS: REACTIVE CYANIDE REACTIVE SULFIDE / FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI / FECAL COLIFORM	MICRO: ENTEROCOCCI / HETEROTROPHIC PLATE COUNT	METALS: DISSOLVED METALS (LIST BELOW)	METALS: TOTAL METALS (LIST BELOW)	OTHER: % Solids	OTHER	OTHER	OTHER	# OF CONTAINERS	NOTES MeOH VIAL #
FDup 20220815	8/15/2022 1305	S	C		X			X			X					X	X							X	X				3	
Lagoon5 soil 20220815	↓ 12:25* ~~1325~~	↓	↓		X			X			X					X	X							X	X				↓	
Lagoon 5 20220815	1405	↓	↓		X			X			X					X	X							X	X				↓	
North Berm 20220815	1445	↓	↓		X			X			X					X	X							X	X				↓	
South Berm 20220815	↓ 1525	↓	↓		X			X			X					X	X							X	X				↓	

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: Tim Andrews
COMPANY: Nobis Group
ADDRESS: 18 Chenell Dr.
CITY: Concord STATE: NH ZIP: 03301
PHONE: 603-224-4182 EXT.:
E-MAIL: TAndrews@Nobis-Group.com
SITE NAME: Hopkinton Septage Lagoons
PROJECT #: 030157.000
STATE: (NH) MA ME VT OTHER:
REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:
QUOTE #: PO #:

QA/QC REPORTING
(A) B C
MA MCP

TEMP. 2.5 °C
ICE? (YES) NO

REPORTING OPTIONS
PRELIMS: YES OR NO

ELECTRONIC OPTIONS
PDF EXCEL
EQUIS
OTHER

TURN AROUND TIME
24hr* 48hr*
3-4 Days*
5 Day (7 Day)
10 Day
*Pre-approval Required

SAMPLER(S): L. Cox, J. Cumberland

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
[signature]	Aug 15	1650	[signature]

METALS: 8 RCRA 13 PP Fe, Mn (Pb, Cu)
OTHER METALS: As, Cd, Cr, Hg, Mo, Ni, Se, Zn, K
SAMPLES FIELD FILTERED? ☐ YES ☐ NO
NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)
* collection time per client 8/17/22 g
** ABN vs. PAH per client 8/17/22 g
SITE HISTORY:
SUSPECTED CONTAMINATION:
FIELD READINGS:

ANALYTICAL REPORT

Lab Number:	L2244283
Client:	NHDES 29 Hazen Drive Concord, NH 03302-0095
ATTN:	Anthony Drouin
Phone:	(603) 271-2818
Project Name:	2022-SEF-00-001
Project Number:	2022-SEF-00-001
Report Date:	09/21/22

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

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

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2244283-01	LAGOON 1 SOILS EQ	WATER	HOPKINTON, NH	08/15/22 09:10	08/16/22
L2244283-02	LAGOON 1 SOILS	SOIL	HOPKINTON, NH	08/15/22 09:45	08/16/22
L2244283-03	LAGOON 1 EQ	WATER	HOPKINTON, NH	08/15/22 09:55	08/16/22
L2244283-04	LAGOON 1	SLUDGE	HOPKINTON, NH	08/15/22 10:10	08/16/22
L2244283-05	LAGOON 2 SOILS EQ	WATER	HOPKINTON, NH	08/15/22 10:20	08/16/22
L2244283-06	LAGOON 2 SOILS	SOIL	HOPKINTON, NH	08/15/22 10:45	08/16/22
L2244283-07	LAGOON 2 EQ	WATER	HOPKINTON, NH	08/15/22 10:55	08/16/22
L2244283-08	LAGOON 2	SLUDGE	HOPKINTON, NH	08/15/22 11:00	08/16/22
L2244283-09	LAGOON 3 SOILS EQ	WATER	HOPKINTON, NH	08/15/22 11:25	08/16/22
L2244283-10	LAGOON 3 SOILS	SOIL	HOPKINTON, NH	08/15/22 11:40	08/16/22
L2244283-11	LAGOON 3 EQ	WATER	HOPKINTON, NH	08/15/22 11:50	08/16/22
L2244283-12	LAGOON 3	SLUDGE	HOPKINTON, NH	08/15/22 12:00	08/16/22
L2244283-13	LAGOON 4 SOILS EQ	WATER	HOPKINTON, NH	08/15/22 12:20	08/16/22
L2244283-14	LAGOON 4 SOILS	SOIL	HOPKINTON, NH	08/15/22 12:30	08/16/22
L2244283-15	LAGOON 4 EQ	WATER	HOPKINTON, NH	08/15/22 12:40	08/16/22
L2244283-16	LAGOON 4	SLUDGE	HOPKINTON, NH	08/15/22 12:55	08/16/22
L2244283-17	LAGOON 5 SOILS EQ	WATER	HOPKINTON, NH	08/15/22 13:20	08/16/22
L2244283-18	LAGOON 5 SOILS	SOIL	HOPKINTON, NH	08/15/22 13:25	08/16/22
L2244283-19	LAGOON 5 EQ	WATER	HOPKINTON, NH	08/15/22 14:00	08/16/22
L2244283-20	LAGOON 5	SLUDGE	HOPKINTON, NH	08/15/22 14:05	08/16/22
L2244283-21	NORTH BERM EQ	WATER	HOPKINTON, NH	08/15/22 14:30	08/16/22
L2244283-22	NORTH BERM	SOIL	HOPKINTON, NH	08/15/22 14:45	08/16/22
L2244283-23	SOUTH BERM EQ	WATER	HOPKINTON, NH	08/15/22 15:00	08/16/22
L2244283-24	SOUTH BERM	SOIL	HOPKINTON, NH	08/15/22 15:25	08/16/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2244283-25	FIELD BLANK - LG4	WATER	HOPKINTON, NH	08/15/22 12:58	08/16/22
L2244283-26	FIELD BLANK - WASH STATION	WATER	HOPKINTON, NH	08/15/22 14:30	08/16/22

Project Name:	2022-SEF-00-001	**Lab Number:**	L2244283
Project Number:	2022-SEF-00-001	**Report Date:**	09/21/22

Case Narrative

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

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

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

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

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

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

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283
Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

L2244283-02, -06, -14, -22, and -24: 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.

L2244283-02, -04, -06, -08, -10, -12, -13, -14, -16, -18, -20, -22, -22RE, -24, -24RE, and -25: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2244283-04D: The sample was re-analyzed on dilution due to matrix interference in the original extraction. The results of the re-analysis are reported for NMeFOSAA, PFUnA and PFDS.

L2244283-22: The Extracted Internal Standard recovery is less than 2% for perfluoro[1,2-13c2]tetradecanoic acid (m2pfteda) (0%); however, the extraction efficiency was improved upon re-extraction at a lower volume with the method required holding time exceeded. The associated target compounds are not reported in the initial analysis due to the insufficient recovery of this surrogate. The results of the re-extraction are reported for the associated target compounds. The Extracted Internal Standard recovery is less than 5% for n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-nmefosaa) (4%); however, the extraction efficiency was improved upon re-extraction at a lower volume with the method required holding time exceeded. The results of both extractions are reported for the associated target compounds.

L2244283-24: The Extracted Internal Standard recovery is less than 5% for perfluoro[1,2-13c2]tetradecanoic acid (m2pfteda) (4%); however, the extraction efficiency was improved upon re-extraction at a lower volume with the method required holding time exceeded. The results of both extractions are reported for the associated target compounds.

WG1677991-1R: The sample was re-analyzed due to QC failures in the original analysis. The results of the re-analysis are reported.

WG1680590-1, WG1680590-2, WG1680590-3, WG1680590-4, WG1687439-1, WG1687439-2, and WG1687439-3: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The Extracted Internal Standard recovery for the WG1680590-1 Method Blank, associated with L2244283-02,

Project Name:	2022-SEF-00-001	**Lab Number:**	L2244283
Project Number:	2022-SEF-00-001	**Report Date:**	09/21/22

Case Narrative (continued)

-06, -10, -14, -18, -22, and -24, is below the acceptance criteria for perfluoro[13c8]octanesulfonamide (m8fosa) (less than 5%); however, the associated samples are non-detect to the RL for all associated target analytes; therefore, no further action was taken.

The WG1680590-2 LCS recoveries, associated with L2244283-02, -06, -10, -14, -18, -22, and -24, are above the acceptance criteria for perfluoroheptanesulfonic acid (pfhps) (141%), 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (169%), and perfluorotetradecanoic acid (pfta) (140%); however, the associated samples are non-detect to the RL for these target analytes. The results of the original analysis are reported.

The Extracted Internal Standard recovery for the WG1680590-2 LCS, associated with L2244283-02, -06, -10, -14, -18, -22, and -24, is below the acceptance criteria (less than 5%) for perfluoro[13c8]octanesulfonamide (m8fosa) (2%); however, all associated target analytes are within overall LCS criteria; therefore, no further action was taken.

The WG1680590-3 MS recoveries, performed on L2244283-02, are outside the acceptance criteria for 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (167%), n-methyl perfluorooctanesulfonamidoacetic acid (nmefosaa) (149%) and n-ethyl perfluorooctanesulfonamidoacetic acid (netfosaa) (157%).

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: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 09/21/22

ORGANICS

SEMIVOLATILES

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-01
Client ID: LAGOON 1 SOILS EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 09:10
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 20:22
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-01 Date Collected: 08/15/22 09:10

Client ID: LAGOON 1 SOILS EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

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

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	96		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	67		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	46		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	54		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-02
Client ID: LAGOON 1 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 09:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 00:48
Analyst: SG
Percent Solids: 96%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.490	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.490	--	1
Perfluorobutanesulfonic Acid (PFBS)	0.292		ng/g	0.245	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.981	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.490	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.981	--	1
Perfluoroheptanoic Acid (PFHpA)	0.429		ng/g	0.245	--	1
Perfluorohexanesulfonic Acid (PFHxS)	0.424		ng/g	0.245	--	1
Perfluorooctanoic Acid (PFOA)	3.08		ng/g	0.245	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.490	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.490	--	1
Perfluorononanoic Acid (PFNA)	0.570		ng/g	0.245	--	1
Perfluorooctanesulfonic Acid (PFOS)	8.56		ng/g	0.245	--	1
Perfluorodecanoic Acid (PFDA)	1.43		ng/g	0.245	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.490	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.981	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2.25	F	ng/g	0.490	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.490	--	1
Perfluorodecanesulfonic Acid (PFDS)	0.727		ng/g	0.490	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.32		ng/g	0.490	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.490	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.490	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.490	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-02 Date Collected: 08/15/22 09:45

Client ID: LAGOON 1 SOILS Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**44**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**46**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**71**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	72		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**54**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**65**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	82		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**71**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	74		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**68**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**73**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**20**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**30**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	49		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-02
Client ID: LAGOON 1 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 09:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/16/22 19:24
Analyst: RS
Percent Solids: 96%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.490	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	81		5-117

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-03
Client ID: LAGOON 1 EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 09:55
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 20:39
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-03 Date Collected: 08/15/22 09:55

Client ID: LAGOON 1 EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	97		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	82		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	65		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)	87		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	97		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	75		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	57		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	58		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-04
Client ID: LAGOON 1
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:10
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 14:55
Analyst: MP
Percent Solids: 58%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.417	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.417	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.208	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.833	--	1
Perfluorohexanoic Acid (PFHxA)	0.618		ng/g	0.417	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.833	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.208	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.208	--	1
Perfluorooctanoic Acid (PFOA)	0.851		ng/g	0.208	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.417	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.417	--	1
Perfluorononanoic Acid (PFNA)	0.496		ng/g	0.208	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.68		ng/g	0.208	--	1
Perfluorodecanoic Acid (PFDA)	0.646		ng/g	0.208	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.417	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.833	--	1
Perfluorooctanesulfonamide (FOSA)	0.429	F	ng/g	0.417	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	5.12		ng/g	0.417	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.417	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.417	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.417	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-04 Date Collected: 08/15/22 10:10

Client ID: LAGOON 1 Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	76		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)	**285**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	78		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**252**	Q	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**76**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	84		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	117		19-175
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**22**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**52**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	82		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-04 D
Client ID: LAGOON 1
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:10
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/20/22 14:36
Analyst: SG
Percent Solids: 58%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	4.17	--	10
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	4.17	--	10
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	4.17	--	10

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	114		79-136
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	112		61-155

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-05
Client ID: LAGOON 2 SOILS EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:20
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 20:56
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-05 Date Collected: 08/15/22 10:20

Client ID: LAGOON 2 SOILS EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

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

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	84		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	96		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	94		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	120		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	54		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-06
Client ID: LAGOON 2 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 01:21
Analyst: SG
Percent Solids: 96%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.469	--	1
Perfluoropentanoic Acid (PFPeA)	0.482		ng/g	0.469	--	1
Perfluorobutanesulfonic Acid (PFBS)	0.530		ng/g	0.235	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.938	--	1
Perfluorohexanoic Acid (PFHxA)	0.673		ng/g	0.469	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.938	--	1
Perfluoroheptanoic Acid (PFHpA)	0.718		ng/g	0.235	--	1
Perfluorohexanesulfonic Acid (PFHxS)	0.509		ng/g	0.235	--	1
Perfluorooctanoic Acid (PFOA)	4.83		ng/g	0.235	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.469	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.469	--	1
Perfluorononanoic Acid (PFNA)	0.732		ng/g	0.235	--	1
Perfluorooctanesulfonic Acid (PFOS)	10.2		ng/g	0.235	--	1
Perfluorodecanoic Acid (PFDA)	1.93		ng/g	0.235	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.469	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.938	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	1.86	F	ng/g	0.469	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.469	--	1
Perfluorodecanesulfonic Acid (PFDS)	2.50	F	ng/g	0.469	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.20		ng/g	0.469	--	1
Perfluorododecanoic Acid (PFDoA)	0.658		ng/g	0.469	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.469	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.469	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-06 Date Collected: 08/15/22 10:45

Client ID: LAGOON 2 SOILS Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**45**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**46**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	76		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	75		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**56**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**65**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**68**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	81		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**68**	Q	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)	81		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**28**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	63		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	37		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	57		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	43		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-06
Client ID: LAGOON 2 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/16/22 19:31
Analyst: RS
Percent Solids: 96%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	0.701	F	ng/g	0.469	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	71		5-117

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-07
Client ID: LAGOON 2 EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:55
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 21:29
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-07 Date Collected: 08/15/22 10:55

Client ID: LAGOON 2 EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	93		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	96		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	91		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	97		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	108		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	58		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	61		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	75		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	55		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-08
Client ID: LAGOON 2
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 11:00
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 15:12
Analyst: MP
Percent Solids: 79%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.305	--	1
Perfluoropentanoic Acid (PFPeA)	1.14		ng/g	0.305	--	1
Perfluorobutanesulfonic Acid (PFBS)	0.297		ng/g	0.153	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.611	--	1
Perfluorohexanoic Acid (PFHxA)	0.865		ng/g	0.305	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.611	--	1
Perfluoroheptanoic Acid (PFHpA)	0.478		ng/g	0.153	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.153	--	1
Perfluorooctanoic Acid (PFOA)	2.94		ng/g	0.153	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.305	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.305	--	1
Perfluorononanoic Acid (PFNA)	0.416		ng/g	0.153	--	1
Perfluorooctanesulfonic Acid (PFOS)	2.03		ng/g	0.153	--	1
Perfluorodecanoic Acid (PFDA)	1.07		ng/g	0.153	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.305	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.611	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	4.07	F	ng/g	0.305	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.305	--	1
Perfluorodecanesulfonic Acid (PFDS)	1.44		ng/g	0.305	--	1
Perfluorooctanesulfonamide (FOSA)	0.495	F	ng/g	0.305	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	4.27		ng/g	0.305	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.305	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.305	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.305	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-08 Date Collected: 08/15/22 11:00

Client ID: LAGOON 2 Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	71		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**285**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	66		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	72		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**236**	Q	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	101		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**261**	Q	19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**48**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	47		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**37**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-09
Client ID: LAGOON 3 SOILS EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 11:25
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 21:45
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-09 Date Collected: 08/15/22 11:25

Client ID: LAGOON 3 SOILS EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

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

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	88		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	90		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	81		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	82		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-10
Client ID: LAGOON 3 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 11:40
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 01:54
Analyst: SG
Percent Solids: 95%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.491	--	1
Perfluoropentanoic Acid (PFPeA)	0.580		ng/g	0.491	--	1
Perfluorobutanesulfonic Acid (PFBS)	0.496		ng/g	0.245	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.981	--	1
Perfluorohexanoic Acid (PFHxA)	0.828		ng/g	0.491	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.981	--	1
Perfluoroheptanoic Acid (PFHpA)	0.871		ng/g	0.245	--	1
Perfluorohexanesulfonic Acid (PFHxS)	0.646		ng/g	0.245	--	1
Perfluorooctanoic Acid (PFOA)	5.37	F	ng/g	0.245	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.491	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.491	--	1
Perfluorononanoic Acid (PFNA)	0.553		ng/g	0.245	--	1
Perfluorooctanesulfonic Acid (PFOS)	10.1		ng/g	0.245	--	1
Perfluorodecanoic Acid (PFDA)	1.36		ng/g	0.245	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.491	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.981	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	3.52	F	ng/g	0.491	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.491	--	1
Perfluorodecanesulfonic Acid (PFDS)	1.33	F	ng/g	0.491	--	1
Perfluorooctanesulfonamide (FOSA)	1.06	F	ng/g	0.491	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	4.12		ng/g	0.491	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.491	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.491	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.491	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-10 Date Collected: 08/15/22 11:40

Client ID: LAGOON 3 SOILS Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**32**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**24**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	100		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**23**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**25**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	106		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**30**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	106		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**37**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**53**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**24**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**50**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	10		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**28**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	57		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	47		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-11
Client ID: LAGOON 3 EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 11:50
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 22:02
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	12.3		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-11 Date Collected: 08/15/22 11:50

Client ID: LAGOON 3 EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	89		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	115		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	117		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	103		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	48		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	58		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-12
Client ID: LAGOON 3
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:00
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 15:28
Analyst: MP
Percent Solids: 57%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.417	--	1
Perfluoropentanoic Acid (PFPeA)	1.07		ng/g	0.417	--	1
Perfluorobutanesulfonic Acid (PFBS)	0.576		ng/g	0.208	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.834	--	1
Perfluorohexanoic Acid (PFHxA)	1.14		ng/g	0.417	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.834	--	1
Perfluoroheptanoic Acid (PFHpA)	1.08		ng/g	0.208	--	1
Perfluorohexanesulfonic Acid (PFHxS)	1.08	F	ng/g	0.208	--	1
Perfluorooctanoic Acid (PFOA)	10.2		ng/g	0.208	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.417	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.417	--	1
Perfluorononanoic Acid (PFNA)	2.28		ng/g	0.208	--	1
Perfluorooctanesulfonic Acid (PFOS)	16.5		ng/g	0.208	--	1
Perfluorodecanoic Acid (PFDA)	5.31		ng/g	0.208	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.417	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.834	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	21.1		ng/g	0.417	--	1
Perfluoroundecanoic Acid (PFUnA)	0.648		ng/g	0.417	--	1
Perfluorodecanesulfonic Acid (PFDS)	5.29		ng/g	0.417	--	1
Perfluorooctanesulfonamide (FOSA)	4.26		ng/g	0.417	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	25.0		ng/g	0.417	--	1
Perfluorododecanoic Acid (PFDoA)	1.30		ng/g	0.417	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.417	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.417	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-12 Date Collected: 08/15/22 12:00

Client ID: LAGOON 3 Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**60**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	61		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**259**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**56**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**61**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**67**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**205**	Q	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	74		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**69**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**210**	Q	19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**39**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	39		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**33**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-13
Client ID: LAGOON 4 SOILS EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:20
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 22:19
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.02	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.02	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.02	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.02	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.02	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.02	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.02	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.02	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.02	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.02	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.02	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.02	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.02	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.02	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.02	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.02	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.02	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.02	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.02	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.02	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.02	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.02	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.02	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.02	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-13 Date Collected: 08/15/22 12:20

Client ID: LAGOON 4 SOILS EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	88		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	89		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**162**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	122		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**47**	Q	55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	40		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**43**	Q	48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-14
Client ID: LAGOON 4 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:30
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 02:11
Analyst: SG
Percent Solids: 96%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.494	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.494	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.247	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.989	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.494	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.989	--	1
Perfluoroheptanoic Acid (PFHpA)	0.372		ng/g	0.247	--	1
Perfluorohexanesulfonic Acid (PFHxS)	0.506		ng/g	0.247	--	1
Perfluorooctanoic Acid (PFOA)	3.00	F	ng/g	0.247	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.494	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.494	--	1
Perfluorononanoic Acid (PFNA)	0.559		ng/g	0.247	--	1
Perfluorooctanesulfonic Acid (PFOS)	17.5		ng/g	0.247	--	1
Perfluorodecanoic Acid (PFDA)	1.54		ng/g	0.247	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.494	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.989	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	1.68		ng/g	0.494	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.494	--	1
Perfluorodecanesulfonic Acid (PFDS)	1.03		ng/g	0.494	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	3.17		ng/g	0.494	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.494	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.494	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.494	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-14 Date Collected: 08/15/22 12:30

Client ID: LAGOON 4 SOILS Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**37**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**41**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**72**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	66		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**46**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**55**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	85		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**59**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**60**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**71**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**69**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	60		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**28**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	62		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**30**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**51**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	26		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-14
Client ID: LAGOON 4 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:30
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/16/22 19:39
Analyst: RS
Percent Solids: 96%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.494	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	81		5-117

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-15
Client ID: LAGOON 4 EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:40
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 22:35
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-15 Date Collected: 08/15/22 12:40

Client ID: LAGOON 4 EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	87		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	87		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	82		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	102		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	97		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	78		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	34		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	62		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	67		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-16
Client ID: LAGOON 4
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:55
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 15:45
Analyst: MP
Percent Solids: 62%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.392	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.392	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.196	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.784	--	1
Perfluorohexanoic Acid (PFHxA)	0.551		ng/g	0.392	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.784	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.196	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.196	--	1
Perfluorooctanoic Acid (PFOA)	0.570		ng/g	0.196	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.392	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.392	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.196	--	1
Perfluorooctanesulfonic Acid (PFOS)	3.02		ng/g	0.196	--	1
Perfluorodecanoic Acid (PFDA)	0.540		ng/g	0.196	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.392	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.784	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	1.88		ng/g	0.392	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.392	--	1
Perfluorodecanesulfonic Acid (PFDS)	0.886	F	ng/g	0.392	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.392	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.81	F	ng/g	0.392	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.392	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.392	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.392	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-16 Date Collected: 08/15/22 12:55

Client ID: LAGOON 4 Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

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

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	73		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**340**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**244**	Q	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	84		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**269**	Q	19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	35		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**37**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	10		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	36		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**39**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-17
Client ID: LAGOON 5 SOILS EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 13:20
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 22:52
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-17 Date Collected: 08/15/22 13:20

Client ID: LAGOON 5 SOILS EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	93		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	94		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	104		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89		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)	93		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	58		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-18
Client ID: LAGOON 5 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 13:25
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 02:27
Analyst: SG
Percent Solids: 98%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.458	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.458	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.229	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.915	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.458	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.915	--	1
Perfluoroheptanoic Acid (PFHpA)	0.314		ng/g	0.229	--	1
Perfluorohexanesulfonic Acid (PFHxS)	0.477		ng/g	0.229	--	1
Perfluorooctanoic Acid (PFOA)	1.77		ng/g	0.229	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.458	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.458	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.229	--	1
Perfluorooctanesulfonic Acid (PFOS)	6.40		ng/g	0.229	--	1
Perfluorodecanoic Acid (PFDA)	0.530		ng/g	0.229	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.458	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.915	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2.15		ng/g	0.458	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.458	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.458	--	1
Perfluorooctanesulfonamide (FOSA)	0.670		ng/g	0.458	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	3.83		ng/g	0.458	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.458	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.458	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.458	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-18 Date Collected: 08/15/22 13:25

Client ID: LAGOON 5 SOILS Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**53**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**54**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	81		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**63**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	74		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**69**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		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)	78		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**25**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	71		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	14		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**33**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	54		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-19
Client ID: LAGOON 5 EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:00
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 23:08
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-19 Date Collected: 08/15/22 14:00

Client ID: LAGOON 5 EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	87		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	88		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	103		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	100		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	95		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-20
Client ID: LAGOON 5
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:05
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 16:01
Analyst: MP
Percent Solids: 65%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.376	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.376	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.188	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.751	--	1
Perfluorohexanoic Acid (PFHxA)	0.467		ng/g	0.376	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.751	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.188	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.188	--	1
Perfluorooctanoic Acid (PFOA)	0.526		ng/g	0.188	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.376	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.376	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.188	--	1
Perfluorooctanesulfonic Acid (PFOS)	1.40	F	ng/g	0.188	--	1
Perfluorodecanoic Acid (PFDA)	0.298		ng/g	0.188	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.376	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.751	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	1.44		ng/g	0.376	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.376	--	1
Perfluorodecanesulfonic Acid (PFDS)	1.27	F	ng/g	0.376	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.376	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.21		ng/g	0.376	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.376	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.376	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.376	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-20 Date Collected: 08/15/22 14:05

Client ID: LAGOON 5 Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	73		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	70		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**340**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	67		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**304**	Q	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**259**	Q	19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**29**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**34**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	7		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**29**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**41**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-21
Client ID: NORTH BERM EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:30
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 23:25
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-21 Date Collected: 08/15/22 14:30

Client ID: NORTH BERM EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	93		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	94		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	95		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	98		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	120		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	107		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	120		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	49		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	79		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	16		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	53		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	52		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-22
Client ID: NORTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 02:44
Analyst: SG
Percent Solids: 80%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.582	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.582	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.291	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.16	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.582	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.16	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.291	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.291	--	1
Perfluorooctanoic Acid (PFOA)	0.525	F	ng/g	0.291	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.582	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.582	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.291	--	1
Perfluorooctanesulfonic Acid (PFOS)	6.47		ng/g	0.291	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.291	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.582	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.16	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.582	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.582	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.582	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.19		ng/g	0.582	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.582	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-22 Date Collected: 08/15/22 14:45

Client ID: NORTH BERM Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**34**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**33**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**55**	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)	**35**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**39**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**57**	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**39**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	50		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**35**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**44**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**40**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	25		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**4**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**28**	Q	61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**5**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**17**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**0**	Q	24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-22
Client ID: NORTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/18/22 13:59
Analyst: SG
Percent Solids: 80%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.582	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	78		5-117

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-22 RE
Client ID: NORTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 16:25
Analyst: SG
Percent Solids: 80%

Extraction Method: ALPHA 23528
Extraction Date: 09/14/22 16:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	1.75	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	1.75	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	1.75	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**17**	Q	31-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**36**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**10**	Q	24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-23
Client ID: SOUTH BERM EQ
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 15:00
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 23:41
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.12	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.12	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.12	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.12	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.12	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.12	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.12	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.12	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.12	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.12	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.12	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.12	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.12	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.12	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.12	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.12	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.12	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.12	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.12	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.12	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.12	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.12	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.12	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.12	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-23 Date Collected: 08/15/22 15:00

Client ID: SOUTH BERM EQ Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	86		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	93		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	109		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	126		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	50		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	70		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	16		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	33		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	66		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	56		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-24
Client ID: SOUTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 15:25
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 03:00
Analyst: SG
Percent Solids: 98%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.476	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.476	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.238	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.951	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.476	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.951	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.238	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.238	--	1
Perfluorooctanoic Acid (PFOA)	1.04	F	ng/g	0.238	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.476	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.476	--	1
Perfluorononanoic Acid (PFNA)	0.253	F	ng/g	0.238	--	1
Perfluorooctanesulfonic Acid (PFOS)	11.4		ng/g	0.238	--	1
Perfluorodecanoic Acid (PFDA)	1.35		ng/g	0.238	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.476	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.951	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.888		ng/g	0.476	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.476	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.476	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.81	F	ng/g	0.476	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.476	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.476	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.476	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-24 Date Collected: 08/15/22 15:25

Client ID: SOUTH BERM Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**13**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**14**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**29**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	26		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**18**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**21**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**34**	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**21**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	27		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**18**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**28**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**21**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	22		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**16**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**16**	Q	61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**15**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**14**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**4**	Q	24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-24
Client ID: SOUTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 15:25
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/18/22 14:06
Analyst: SG
Percent Solids: 98%

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.476	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	91		5-117

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-24 RE
Client ID: SOUTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 15:25
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 16:42
Analyst: SG
Percent Solids: 98%

Extraction Method: ALPHA 23528
Extraction Date: 09/14/22 16:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	1.39	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	1.39	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**19**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**7**	Q	24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-25
Client ID: FIELD BLANK - LG4
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:58
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 03:15
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 08/22/22 08:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.03	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.03	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.03	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.03	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.03	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.03	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.03	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.03	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.03	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.03	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.03	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.03	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.03	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.03	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.03	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.03	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.03	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.03	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.03	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.03	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.03	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.03	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.03	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.03	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-25 Date Collected: 08/15/22 12:58

Client ID: FIELD BLANK - LG4 Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

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

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	115		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	125		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	92		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	111		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	108		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	115		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	90		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	118		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	120		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**130**	Q	62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	105		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	92		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	127		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	48		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	120		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	125		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-26
Client ID: FIELD BLANK - WASH STATION
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:30
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 03:32
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 08/22/22 08:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	--	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	--	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-26 Date Collected: 08/15/22 14:30

Client ID: FIELD BLANK - WASH STATION Date Received: 08/16/22

Sample Location: HOPKINTON, NH Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	108		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	120		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	88		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	107		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	118		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	111		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	116		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	110		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	115		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	93		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	90		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	110		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	35		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	105		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	125		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 17:20
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1676984-1					
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)	ND		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	--

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 17:20
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/19/22 05:14

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1676984-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	83		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	81		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	61		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	47		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	103		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 16:33
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/22/22 08:48

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 25-26 Batch: WG1677991-1 R					
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)	ND		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	--

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/11/22 16:33
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/22/22 08:48

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 25-26 Batch: WG1677991-1 R					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	88		12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	99		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	79		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	105		22-136

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 12:43
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 04,08,12,16,20 Batch: WG1680528-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.250	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.250	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.125	--
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.500	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.250	--
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.500	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.125	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.125	--
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.125	--
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.250	--
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.250	--
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.125	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.125	--
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.125	--
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.250	--
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.500	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.250	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.250	--
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.250	--
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.250	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.250	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.250	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.250	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.250	--

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 12:43
Analyst: MP

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 11:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 04,08,12,16,20 Batch: WG1680528-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	103		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	105		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	104		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	112		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	102		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	108		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	117		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	108		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	110		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40		5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	100		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	111		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	139		24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 00:15
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02,06,10,14,18,22,24 Batch: WG1680590-1					
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	--

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/12/22 00:15
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02,06,10,14,18,22,24 Batch: WG1680590-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**48**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**47**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**55**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	54		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**53**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**59**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**58**	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**62**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	54		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**50**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**52**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**58**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	40		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**16**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**42**	Q	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**2**	Q	5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**15**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**39**	Q	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**17**	Q	24-159

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/16/22 19:10
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 08/28/22 14:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02,06,10,14,18,22,24 Batch: WG1680590-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	71		5-117

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 14:46
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 09/14/22 16:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 22,24 Batch: WG1687439-1					
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	--
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	--
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	--

Project Name: 2022-SEF-00-001 **Lab Number:** L2244283

Project Number: 2022-SEF-00-001 **Report Date:** 09/21/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 09/17/22 14:46
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 09/14/22 16:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 22,24 Batch: WG1687439-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	70		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	70		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**68**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	86		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**62**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	81		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	84		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	77		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**75**	Q	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)	83		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	44		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	43		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	85		24-159

Lab Control Sample Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab	Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23					Batch: WG1676984-2		
Perfluorobutanoic Acid (PFBA)	93		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	92		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	90		-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	103		-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	92		-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	94		-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	94		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	106		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	85		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	105		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	108		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	88		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	100		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	88		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	112		-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	103		-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	104		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	120		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	111		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	101		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	86		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	87		-		67-153	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab	Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23				Batch: WG1676984-2			
Perfluorotridecanoic Acid (PFTrDA)	102		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	82		-		59-182	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96				70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	89				12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	103				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	90				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	63				5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	87				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74				22-136

Lab Control Sample Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 25-26 Batch: WG1677991-2								
Perfluorobutanoic Acid (PFBA)	99		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	101		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	97		-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	104		-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	100		-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	102		-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	98		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	115		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	92		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	110		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	114		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	93		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	110		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	75		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	131		-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	105		-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	121		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	104		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	123		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	101		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	107		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	103		-		67-153	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001

Project Number: 2022-SEF-00-001

Lab Number: L2244283

Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 25-26 Batch: WG1677991-2								
Perfluorotridecanoic Acid (PFTrDA)	101		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	99		-		59-182	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98				70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	91				12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	110				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	96				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	120				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	115				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	42				5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	87				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	107				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	123				22-136

Lab Control Sample Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04,08,12,16,20 Batch: WG1680528-2								
Perfluorobutanoic Acid (PFBA)	97		-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	98		-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	97		-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	105		-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	96		-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	102		-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	97		-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	112		-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	92		-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	110		-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	91		-		70-132	-		30
Perfluorononanoic Acid (PFNA)	91		-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	103		-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	97		-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	115		-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	94		-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	93		-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	99		-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	95		-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	95		-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	104		-		69-135	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001

Project Number: 2022-SEF-00-001

Lab Number: L2244283

Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04,08,12,16,20 Batch: WG1680528-2								
Perfluorotridecanoic Acid (PFTrDA)	100		-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	94		-		69-133	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103				58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98				74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	104				14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	99				66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100				78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	109				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	103				20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	108				72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106				79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	108				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)	108				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111				61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36				5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105				34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	108				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	154				24-159

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001

Project Number: 2022-SEF-00-001

Lab Number: L2244283

Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,06,10,14,18,22,24 Batch: WG1680590-2								
Perfluorobutanoic Acid (PFBA)	100		-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	99		-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	104		-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	107		-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	96		-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	103		-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	99		-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	116		-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	99		-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	117		-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	**141**	Q	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	112		-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	128		-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	92		-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	**169**	Q	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	114		-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	137		-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	127		-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	111		-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	98		-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	132		-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	122		-		69-135	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,06,10,14,18,22,24 Batch: WG1680590-2								
Perfluorotridecanoic Acid (PFTrDA)	103		-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	**140**	Q	-		69-133	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**35**	Q			61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**36**	Q			58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**52**	Q			74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	55				14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**40**	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**45**	Q			71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**61**	Q			78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**48**	Q			75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	57				20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**41**	Q			72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**45**	Q			79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**51**	Q			75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	36				19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**21**	Q			31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**41**	Q			61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**2**	Q			5-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**20**	Q			34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	**34**	Q			54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	**15**	Q			24-159

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001

Project Number: 2022-SEF-00-001

Lab Number: L2244283

Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,06,10,14,18,22,24 Batch: WG1680590-2								
Perfluorooctanesulfonamide (FOSA)	126		-		67-137	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	71				5-117

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001

Project Number: 2022-SEF-00-001

Lab Number: L2244283

Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 22,24 Batch: WG1687439-2 WG1687439-3								
Perfluorobutanoic Acid (PFBA)	87		89		71-135	2		30
Perfluoropentanoic Acid (PFPeA)	86		86		69-132	0		30
Perfluorobutanesulfonic Acid (PFBS)	91		92		72-128	1		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	99		97		62-145	2		30
Perfluorohexanoic Acid (PFHxA)	84		84		70-132	0		30
Perfluoropentanesulfonic Acid (PFPeS)	91		89		73-123	2		30
Perfluoroheptanoic Acid (PFHpA)	86		84		71-131	2		30
Perfluorohexanesulfonic Acid (PFHxS)	103		104		67-130	1		30
Perfluorooctanoic Acid (PFOA)	71		85		69-133	18		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	97		101		64-140	4		30
Perfluoroheptanesulfonic Acid (PFHpS)	96		89		70-132	8		30
Perfluorooctanesulfonic Acid (PFOS)	90		82		68-136	9		30
Perfluorodecanoic Acid (PFDA)	86		88		69-133	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	109		92		65-137	17		30
Perfluorononanesulfonic Acid (PFNS)	95		86		69-125	10		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	92		110		63-144	18		30
Perfluoroundecanoic Acid (PFUnA)	85		78		64-136	9		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	112		103		61-139	8		30
Perfluorododecanoic Acid (PFDoA)	89		95		69-135	7		30
Perfluorotridecanoic Acid (PFTrDA)	107		98		66-139	9		30
Perfluorotetradecanoic Acid (PFTA)	92		89		69-133	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 22,24 Batch: WG1687439-2 WG1687439-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**57**	Q	64		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	58		68		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**72**	Q	**72**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	95		96		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**59**	Q	67		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**70**	Q	78		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		86		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		84		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94		90		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		95		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		90		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		90		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84		93		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	55		54		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	105		113		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	42		53		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		95		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		88		24-159

Matrix Spike Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001 ***Lab Number:*** L2244283

Project Number: 2022-SEF-00-001 ***Report Date:*** 09/21/22

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1676984-3 QC Sample: L2244233-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	59.1	37	96.7	102		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	116	37	158	114		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	8.07	32.8	39.5	96		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	34.7	37.6	108		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	160	37	206	124		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	6.40	34.8	41.0	99		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	141	37	182	111		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	43.8	33.8	82.2	114		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	170	37	210	108		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.07	35.2	42.7	115		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	35.3	41.3	112		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	127	37	170	116		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	109	34.3	152	125		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	19.3	37	52.7	90		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	35.5	43.4	122		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	35.6	32.1	90		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	37	38.7	105		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	4.93F	37	44.6	107		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	3.24F	35.7	38.9	100		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	37	38.1F	103		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	37	37.6	102		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	3.43F	37	40.6	101		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1676984-3 QC Sample: L2244233-01 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	37	34.0F	92		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	37	39.8	108		-	-		59-182	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	80				10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	138				12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	111				14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	59				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	75				55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	55				22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	88				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	76				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40				5-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83				70-131

Matrix Spike Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001
Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 25-26 QC Batch ID: WG1677991-3 QC Sample: L2243837-03 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	9.67	36	44.2	96		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	14.6	36	49.4	97		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	4.42	32	33.7	92		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	33.8	35.7	106		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	12.1	36	46.8	96		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	33.9	34.4	98		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	10.3	36	45.3	97		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	6.52	32.9	44.2	114		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	47.3	36	88.0	113		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	15.1	34.3	50.6	104		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	34.4	37.7	110		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	17.3	36	48.3	86		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	17.3	33.4	54.2	110		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	36	32.3	88		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	34.6	35.5	103		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	34.6	36.5	105		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	36	37.8	105		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	36	40.8	113		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	34.8	31.1	89		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	36	33.2F	92		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	36	32.5	90		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	36	35.4	98		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 25-26 QC Batch ID: WG1677991-3 QC Sample: L2243837-03 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	36	36.7	102		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	36	34.0	94		-	-		59-182	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**268**	Q			10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**202**	Q			12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**222**	Q			14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	74				55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	107				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	104				22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	91				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	84				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13				5-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	111				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94				70-131

Matrix Spike Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04,08,12,16,20 QC Batch ID: WG1680528-3 QC Sample: L2244079-01 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	0.946	4.75	5.34	92		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	2.76	4.75	7.25	95		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	3.47	4.22	7.51	96		-	-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	4.46	4.69	105		-	-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	3.33	4.75	7.92	97		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	4.48	4.41	99		-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	2.34	4.75	6.87	95		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	1.11	4.34	5.77	107		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	13.4	4.75	17.6	88		-	-		69-133	-		30
Perfluorononanoic Acid (PFNA)	5.63	4.75	9.78	87		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	23.1	4.41	27.1	91		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	8.55	4.75	12.9	92		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	4.56	5.41	111		-	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	4.57	5.01	101		-	-		69-125	-		30
Perfluoroundecanoic Acid (PFUnA)	2.44	4.75	6.96	95		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	1.49	4.59	6.04	99		-	-		59-134	-		30
Perfluorododecanoic Acid (PFDoA)	2.28	4.75	7.58	111		-	-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	0.580	4.75	4.45	81		-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	0.769	4.75	4.98	89		-	-		69-133	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**184**	Q			19-175

Matrix Spike Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001 ***Lab Number:*** L2244283

Project Number: 2022-SEF-00-001 ***Report Date:*** 09/21/22

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04,08,12,16,20 QC Batch ID: WG1680528-3 QC Sample: L2244079-01 Client ID: MS Sample												

Surrogate (Extracted Internal Standard)	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**224**	Q			14-167
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	73				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	**68**	Q			75-130
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**62**	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**66**	Q			71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92				78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	59				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72				24-159
Perfluoro[13C4]Butanoic Acid (MPFBA)	66				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**57**	Q			58-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	86				79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**72**	Q			75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**69**	Q			72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88				74-139

Matrix Spike Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001 ***Lab Number:*** L2244283

Project Number: 2022-SEF-00-001 ***Report Date:*** 09/21/22

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,06,10,14,18,22,24 QC Batch ID: WG1680590-3 QC Sample: L2244283-02 Client ID: LAGOON 1 SOILS												
Perfluorobutanoic Acid (PFBA)	ND	4.71	5.09	107		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	ND	4.71	5.20	106		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	0.292	4.18	4.74	106		-	-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	4.42	5.07	115		-	-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	ND	4.71	5.21	102		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	4.43	4.77	108		-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	0.429	4.71	5.39	105		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	0.424	4.3	5.75	124		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	3.08	4.71	8.56F	116		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	4.48	5.77	129		-	-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	4.49	5.50	122		-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	0.570	4.71	5.78	111		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	8.56	4.37	13.2	106		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	1.43	4.71	6.04	98		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	4.52	7.53	**167**	Q	-	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	4.53	5.34	118		-	-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2.25F	4.71	9.27	**149**	Q	-	-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	4.71	6.11	126		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	0.727	4.55	5.96F	115		-	-		59-134	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.32	4.71	9.70	**157**	Q	-	-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	ND	4.71	5.91	116		-	-		69-135	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	4.71	5.40F	115		-	-		66-139	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,06,10,14,18,22,24 QC Batch ID: WG1680590-3 QC Sample: L2244283-02 Client ID: LAGOON 1 SOILS												
Perfluorotetradecanoic Acid (PFTA)	ND	4.71	4.99F	105		-	-		69-133	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	55				19-175
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	68				14-167
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	71				20-154
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**28**	Q			34-137
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**22**	Q			31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	68				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77				75-130
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**53**	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**62**	Q			71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	**76**	Q			78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	55				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	35				24-159
Perfluoro[13C4]Butanoic Acid (MPFBA)	**45**	Q			61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**46**	Q			58-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**72**	Q			79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**60**	Q			75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**62**	Q			72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**66**	Q			74-139

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1676984-4 QC Sample: L2244233-05 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	31.1	29.6	ng/l	5		30
Perfluoropentanoic Acid (PFPeA)	47.5	44.2	ng/l	7		30
Perfluorobutanesulfonic Acid (PFBS)	67.7	63.3	ng/l	7		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	103	95.3	ng/l	8		30
Perfluoropentanesulfonic Acid (PFPeS)	91.0	80.7	ng/l	12		30
Perfluoroheptanoic Acid (PFHpA)	23.5	23.0	ng/l	2		30
Perfluorohexanesulfonic Acid (PFHxS)	500	452	ng/l	10		30
Perfluorooctanoic Acid (PFOA)	44.3	45.7	ng/l	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	2.94	2.71	ng/l	8		30
Perfluoroheptanesulfonic Acid (PFHpS)	17.6	14.7	ng/l	18		30
Perfluorononanoic Acid (PFNA)	100	112	ng/l	11		30
Perfluorooctanesulfonic Acid (PFOS)	614E	563E	ng/l	9		30
Perfluorodecanoic Acid (PFDA)	3.59F	3.86	ng/l	7		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)	2.12F	2.69F	ng/l	24		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: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1676984-4 QC Sample: L2244233-05 Client ID: DUP Sample						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		89		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	82		83		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	106		95		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**169**	Q	**147**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	78		76		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		87		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		98		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		87		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	150	Q	131		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		76		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		88		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	100		92		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	117		99		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	53		48		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		76		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		41		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	58		55		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	67		66		48-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1676984-4 QC Sample: L2244233-05 Client ID: DUP Sample

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		66		22-136

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 25-26 QC Batch ID: WG1677991-4 QC Sample: L2244068-02 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	14.4	14.4	ng/l	0		30
Perfluoropentanoic Acid (PFPeA)	12.0	12.0	ng/l	0		30
Perfluorobutanesulfonic Acid (PFBS)	2.29	2.04	ng/l	12		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	9.28	9.44	ng/l	2		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	4.81	5.31	ng/l	10		30
Perfluorohexanesulfonic Acid (PFHxS)	4.54	4.56	ng/l	0		30
Perfluorooctanoic Acid (PFOA)	15.0F	13.7	ng/l	9		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	2.15F	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	86.9	94.2	ng/l	8		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: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 25-26 QC Batch ID: WG1677991-4 QC Sample: L2244068-02 Client ID: DUP Sample						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	79		74		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	74		71		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		82		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**193**	Q	**165**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	63		59		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73		70		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102		89		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		80		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**195**	Q	**164**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	84		80		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	105		82		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	94		91		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	131		104		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	81		78		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		87		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	11		11		5-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	78		76		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93		78		48-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 25-26 QC Batch ID: WG1677991-4 QC Sample: L2244068-02 Client ID: DUP Sample						

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	97		99		22-136

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04,08,12,16,20 QC Batch ID: WG1680528-4 QC Sample: L2244079-02 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	4.86	4.80	ng/g	1		30
Perfluoropentanoic Acid (PFPeA)	6.68	6.72	ng/g	1		30
Perfluorobutanesulfonic Acid (PFBS)	6.36	6.26	ng/g	2		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/g	NC		30
Perfluorohexanoic Acid (PFHxA)	12.2	12.3	ng/g	1		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	1.62	1.63	ng/g	1		30
Perfluorohexanesulfonic Acid (PFHxS)	0.297	0.278	ng/g	7		30
Perfluorooctanoic Acid (PFOA)	8.90	8.88	ng/g	0		30
Perfluorononanoic Acid (PFNA)	2.30	2.20	ng/g	4		30
Perfluorooctanesulfonic Acid (PFOS)	7.86	7.57	ng/g	4		30
Perfluorodecanoic Acid (PFDA)	5.14	4.85	ng/g	6		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.756	0.851	ng/g	12		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30
Perfluoroundecanoic Acid (PFUnA)	0.972	1.04	ng/g	7		30
Perfluorodecanesulfonic Acid (PFDS)	1.02	0.735	ng/g	**32**	Q	30
Perfluorododecanoic Acid (PFDoA)	1.18F	1.06	ng/g	11		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 04,08,12,16,20 QC Batch ID: WG1680528-4 QC Sample: L2244079-02 Client ID: DUP Sample

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	75		74		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**54**	Q	**53**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	78		75		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**210**	Q	**199**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**48**	Q	**47**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**68**	Q	**66**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		86		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		79		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		88		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		82		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		82		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**222**	Q	**211**	Q	19-175
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		74		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60		60		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	84		89		24-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,06,10,14,18,22,24 QC Batch ID: WG1680590-4 QC Sample: L2244283-06 Client ID: LAGOON 2 SOILS						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/g	NC		30
Perfluoropentanoic Acid (PFPeA)	0.482	ND	ng/g	NC		30
Perfluorobutanesulfonic Acid (PFBS)	0.530	0.483	ng/g	9		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/g	NC		30
Perfluorohexanoic Acid (PFHxA)	0.673	0.691	ng/g	3		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	0.718	0.734	ng/g	2		30
Perfluorohexanesulfonic Acid (PFHxS)	0.509	0.487	ng/g	4		30
Perfluorooctanoic Acid (PFOA)	4.83	5.17	ng/g	7		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/g	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/g	NC		30
Perfluorononanoic Acid (PFNA)	0.732	0.742	ng/g	1		30
Perfluorooctanesulfonic Acid (PFOS)	10.2	9.89	ng/g	3		30
Perfluorodecanoic Acid (PFDA)	1.93	2.03	ng/g	5		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/g	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	1.86F	2.35	ng/g	23		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/g	NC		30
Perfluorodecanesulfonic Acid (PFDS)	2.50F	2.24F	ng/g	11		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2.20	2.40	ng/g	9		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02,06,10,14,18,22,24 QC Batch ID: WG1680590-4 QC Sample: L2244283-06 Client ID: LAGOON 2 SOILS						
Perfluorododecanoic Acid (PFDoA)	0.658	0.600F	ng/g	9		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**45**	Q	**52**	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**46**	Q	**54**	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	76		77		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	75		73		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**56**	Q	**61**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**65**	Q	**69**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	86		88		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	**68**	Q	**73**	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	81		85		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**68**	Q	75		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		79		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		80		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	81		91		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**28**	Q	31		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	63		69		61-155
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	37		40		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	57		71		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	43		60		24-159

INORGANICS
&
MISCELLANEOUS

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-02
Client ID: LAGOON 1 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 09:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	95.7		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-04
Client ID: LAGOON 1
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:10
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	58.4		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-06
Client ID: LAGOON 2 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 10:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	96.0		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-08
Client ID: LAGOON 2
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 11:00
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	79.0		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-10
Client ID: LAGOON 3 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 11:40
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	94.8		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-12
Client ID: LAGOON 3
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:00
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	56.9		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-14
Client ID: LAGOON 4 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:30
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	96.3		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-16
Client ID: LAGOON 4
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 12:55
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	62.1		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-18
Client ID: LAGOON 5 SOILS
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 13:25
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	98.0		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-20
Client ID: LAGOON 5
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:05
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Sludge

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	65.1		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-22
Client ID: NORTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 14:45
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	80.3		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

SAMPLE RESULTS

Lab ID: L2244283-24
Client ID: SOUTH BERM
Sample Location: HOPKINTON, NH

Date Collected: 08/15/22 15:25
Date Received: 08/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	98.0		%	0.100	--	1	-	08/18/22 17:22	121,2540G	JM

Lab Duplicate Analysis

Batch Quality Control

Project Name: 2022-SEF-00-001

Project Number: 2022-SEF-00-001

Lab Number: L2244283

Report Date: 09/21/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 02,04,06,08,10,12,14,16,18,20,22,24 QC Batch ID: WG1676996-1 QC Sample: L2244504-01 Client ID: DUP Sample						
Solids, Total	27.0	26.7	%	1		10

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2244283-01A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-01B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-02A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-02B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-03A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-03B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-04A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-537-ISOTOPE(14)
L2244283-04B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-05A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-05B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-06A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-06B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-07A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-07B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-08A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-537-ISOTOPE(14)
L2244283-08B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-09A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-09B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-10A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-10B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-11A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-11B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2244283-12A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-537-ISOTOPE(14)
L2244283-12B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-13A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-13B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-14A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-14B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-15A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-15B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-16A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-537-ISOTOPE(14)
L2244283-16B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-17A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-17B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-18A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-18B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-19A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-19B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-20A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-537-ISOTOPE(14)
L2244283-20B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-21A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-21B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-22A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-22B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-23A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-23B	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-24A	Plastic 8oz unpreserved	B	NA		2.8	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-24B	Plastic 2oz unpreserved for TS	B	NA		2.8	Y	Absent		A2-TS(7)
L2244283-25A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)
L2244283-26A	Plastic 250ml unpreserved	A	NA		3.0	Y	Absent		A2-NH-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)

*Values in parentheses indicate holding time in days

Project Name: 2022-SEF-00-001
Project Number: 2022-SEF-00-001

Lab Number: L2244283
Report Date: 09/21/22

PFAS PARAMETER SUMMARY

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

Project Name:	2022-SEF-00-001	**Lab Number:**	L2244283
Project Number:	2022-SEF-00-001	**Report Date:**	09/21/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	2022-SEF-00-001	**Lab Number:**	L2244283
Project Number:	2022-SEF-00-001	**Report Date:**	09/21/22

Footnotes

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

Terms

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

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

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

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

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

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

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

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

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

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

Data Qualifiers

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

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

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

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

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

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

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

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

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

J - Estimated value. 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:	2022-SEF-00-001	**Lab Number:**	L2244283
Project Number:	2022-SEF-00-001	**Report Date:**	09/21/22

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.)

Report Format: Data Usability Report

Project Name:	2022-SEF-00-001	**Lab Number:**	L2244283
Project Number:	2022-SEF-00-001	**Report Date:**	09/21/22

REFERENCES

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 3

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 8/17/22

ALPHA Job #: L2244283

Client Information

Client: NH DES
Address: 29 Hazen Dr.
Concord, NH
Phone: 603-271-3571
Email: anthony.f.drouin@des.nh.gov

Additional Project Information:

Project Information

Project Name: 2022-SEF-CO-001
Project Location: Hopkinton NH
Project #: 2022-SEF-00-001
Project Manager: A. Drouin
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS	Sample Comments
44283-01	Lagoon 1 Soils EQ	8/15	9:10	Water	ATD	X	
-02	Lagoon 1 Soils	8/15	9:45	Soil	ATD	X	
-03	Lagoon 1 EQ	8/15	9:55	Water	ATD	X	
-04	Lagoon 1	8/15	10:10	SG	ATD	X	
-05	Lagoon 2 Soils EQ	8/15	10:20	Water	ATD	X	
-06	Lagoon 2 Soils	8/15	10:45	Soil	ATD	X	
-07	Lagoon 2 EQ	8/15	10:55	Water	ATD	X	
-08	Lagoon 2	8/15	11:00	SG	ATD	X	
-09	Lagoon 3 Soils EQ	8/15	11:25	Water	ATD	X	
-10	Lagoon 3 Soils	8/15	11:40	Soil	ATD	X	

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration ☐ Field ☐ Lab to do
Preservation ☐ Lab to do

TOTAL # BOTTLES

Container Type										
Preservative										

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
	8/15 16:00	NHDES Walk in Cooler	8/15 16:00
	8/16 15:03		8/16 15:03
	8/16 16:35		8/16/22 1655

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

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

Serial_No:09212214:35

CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 8/17/22

ALPHA Job #: L2244283

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: NH DES
Address: 29 Hazen Dr. Concord, NH
Phone: 603-271-3571
Email: anthony.f.drouin@des.nh.gov

Additional Project Information:

Project Information

Project Name: 2022-SEF-00-001
Project Location: Hopkinton, NH
Project #: 2022-SEF-00-001
Project Manager: A. Drouin
ALPHA Quote #:

Turn-Around Time

☐ Standard (circled) ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL (circled)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; PFAS

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS	Sample Comments	TOTAL # BOTTLES
44283-11	Lagoon 3 EQ	8/15	11:50	Water	AFD	X		
-12	Lagoon 3	8/15	12:00	SG	AFD	X		
-13	Lagoon 4 Soils EQ	8/15	12:20	Water	AFD	X		
-14	Lagoon 4 Soils	8/15	12:30	Soil	AFD	X		
-15	Lagoon 4 EQ	8/15	12:40	Water	AFD	X		
-16	Lagoon 4	8/15	12:55	SG	AFD	X		
-17	Lagoon 5 Soils EQ	8/15	13:20	Water	AFD	X		
-18	Lagoon 5 Soils	8/15	13:25	Soils	AFD	X		
-19	Lagoon 5 EQ	8/15	14:00	Water	AFD	X		
-20	Lagoon 5	8/15	14:25	SG	AFD	X		

Container Type
Preservative

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/15 16:00	NHDES Walk in cooler	8/15 16:00
[signature]	8/16 15:03	[signature]	8-16 15:03
[signature]	8-16 1635	[signature] AAL	8/16/22 16:35
[signature] AAL	8/16/22 17:00	Tom Hensick AAL	8/16/22 17:00
[signature] 8/17/22 0500			

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

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

Handwritten margin notes: Tom Hensick 8/16/22 17:45; 1 Lili Mori 8/16/22 1945; Relinquished - MBD AAL 8/17/22 0930; MBD AAL 8/17/22 0800; 8-17-22 08:00

CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 8/17/22

ALPHA Job #: L2244283

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: NHDES

Address: 29 Hazen Dr, Concord, NH

Phone: 603-271-3571

Email: Anthony.f.drouin@des.nh.gov

Project Information

Project Name: 2022-SEF-00-001

Project Location: Hopkinton, NH

Project #: 2022-SEF-00-001

Project Manager: A. Drouin

ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

Turn-Around Time

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

Date Due:

Additional Project Information:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PFAS	TOTAL # BOTTLES
44283-21	North Berm EQ	8/15	14:30	Water	AFD	X	
-22	North Berm	8/15	14:45	Soil	AFD	X	
-23	South Berm EQ	8/15	15:00	Water	AFD	X	
-24	South Berm	8/15	15:25	Soil	AFD	X	
-25	Field Blank-LG4	8/15	12:58	Water	AFD	X	
-26	Field Blank - Wash station	8/15	14:30	Water	AFD	X	

ANALYSIS: ☐ VOC: ☐ 8260 ☐ 624 ☐ 524.2 ☐ SVOC: ☐ ABN ☐ PAH ☐ METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 ☐ METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13 ☐ EPH: ☐ Ranges & Targets ☐ Ranges Only ☐ VPH: ☐ Ranges & Targets ☐ Ranges Only ☐ PCB ☐ PEST ☐ TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO

Filtration
☐ Field
☐ Lab to do

Preservation
☐ Lab to do

Sample Comments

Container Type																			
Preservative																			

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
	8/15 16:00	NHDES Walk-in Cooler	8/15 16:00
	8/16 15:03		8/16 15:03
	8/16 16:35		8/16/22 16:35
	8/16/22 17:00	Tom Hoskell AAL	8/16/22 17:00

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

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