



October 31, 2025

Thomas Forbes
Roux Inc.
2558 Hamburg Turnpike
Suite 300
Buffalo, New York 14218

Re: Remedial System Optimization Work Plan
Urbana Landfill Site
Site No.: 851007
Hammondsport (V), Steuben (C)

Dear Mr. Forbes,

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health (NYSDOH) have completed a review of the Remedial System Optimization Work Plan (RSOWP) dated September 15, 2025, for the *Urbana Landfill* site (Site) located at Crow's Nest Road, the Village of Hammondsport, Steuben County. Based on the information presented in the RSOWP, the RSOWP is conditionally approved based on the clarifications and modifications presented below.

- Following implementation of the RSOWP, please provide a detailed list of all components (e.g., sealants, gaskets, O-rings, valves) that were changed and provide a schematic that shows all components of the treatment system and highlights the location of all upgraded/replaced parts.
- If there are any parts that should be upgraded, but for some reason could not be, please make a note of the part, its location, and provide a reason it was unable to be replaced.
- Following implementation of the RSOWP, samples will be collected from the pre-treated influent and the post-treated effluent, and analyzed for emerging contaminants (PFAS and 1,4-Dioxane). Results from these samples will be forwarded in a brief letter report to the Department and NYSDOH project managers for review along with the details requested above. All Site related data must be submitted as an electronic data deliverable (EDD) according to the instructions on the following webpage, <https://www.dec.ny.gov/chemical/62440.html>.
- If the confirmatory results in the letter report show that implementation of this RSOWP allows for the institutional control and engineering control (IC/EC) certification to be made, a revised 2024 Periodic Review Report (PRR) will be submitted to document all changes and upgrades made to the groundwater

treatment system-along with a photo log and field observations made during the RSO work. If the RSOWP fails to address the issues first outlined in the July 30, 2025, letter from the Department, then additional RSO work will be required to ensure the protection of public health and the environment.

The Department must be notified with a minimum of a 7-day advance notice for any field work to be conduct on-site so that Department oversight can be provided. The notification must include an anticipated start day and time for the Site's field work.

Following the completion of the RSOWP and letter report, a revised 2024 PRR with an updated Certification period will be prepared and submitted to the Department and NYSDOH for review and approval. The updated Reporting Period will be from [June 30, 2023], through [*the completion date for successfully implementing the RSOWP*].

A detailed schedule will be provided to the Department for the implementation of the Remedial System Optimization Work Plan **within 14-days of the date of this letter**. If you have any questions or concerns regarding this letter or need further assistance with the Site, please feel free to contact me at (585) 226-5349 or via email at Joshua.Ramsey@dec.ny.gov.

Sincerely,



Joshua J. Ramsey
Project Manager

ec:

Joseph Meade (Mercury)
David Durepo (Town of Urbana)
Justin Deming (NYSDOH)
Michael Izdebski (NYSDOH)
David Pratt (NYSDEC)
Michael Ormanoski (NYSDEC)

cc:

Steve & Tammi Perkins (Property Owners)

September 15, 2025

Mr. Joshua J. Ramsey
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Region 8, 6274 East Avon – Lima Rd
Avon, NY 14414

Re: Remedial System Optimization Work Plan (RSOWP)
Town of Urbana Landfill Site
Site No.: 851007
Hammondsport (T), Steuben (C)

Dear Mr. Ramsey:

On behalf of our client, Mercury Corporation (Mercury), Roux Environmental Engineering and Geology, D.P.C. (Roux) has prepared this Remedial System Optimization Work Plan (RSOWP) in response to the Department's letter dated July 30, 2025, requesting a RSOWP to address emerging contaminant (EC) concentrations within post-treated groundwater effluent at the Town of Urbana Landfill Site located on Crow's Nest Road (See Figures 1&2). Our approach for reducing EC in the post-treated groundwater effluent is presented in detail in the sections below.

Background

In 2001, Mercury (then known as Mercury Aircraft, Inc.) voluntarily agreed to implement remedial measures at the Town of Urbana Landfill Site following the completion of a Remedial Investigation/Feasibility Study (RI/FS). The remedial measures, implemented and financially funded by Mercury include: a landfill cover system, a landfill gas venting system, soil vapor extraction (SVE) remediation, stream bank stabilization, and a groundwater recovery and pre-treatment system (the GW System). The GW System went online in April 2003 and has been maintained and operated continuously by Mercury for the past 22 years. It is highly effective in capturing and treating chlorinated volatile organic contaminants (cVOCs), which were the only constituents of concern that the GW System was intended to address.

Purpose and Scope

As an initial matter, it is important to reemphasize Mercury's position that any Department requirements regarding ECs, including but not limited to this RSOWP that was requested by the Department, are not governed by the Department's Order on Consent, Index # B8-0460-94-08 (the Order), that Mercury and the Town of Urbana entered into in June 2000 to memorialize certain obligations principally related to chlorinated volatile organic compound (VOC) contamination at the Site. Nevertheless, this workplan outlines Mercury's voluntary proposal for optimization procedures that are intended to reduce the levels of EC contaminants in the effluent discharge from the GW System. If the Department requires further RSO work beyond what is proposed in this RSOWP, additional potentially responsible parties (PRPs), including the Town of Urbana and other PRPs listed in the Department's March 1998 Record of Decision (ROD), will need to be involved and a new consent order will need to be negotiated.

Groundwater Recovery and Pre-treatment System

Groundwater is currently recovered along the western perimeter of the landfill between Crow's Nest Road and monitoring well MW-107 using submersible pumps in three vertical recovery wells. The groundwater

is pumped to treatment equipment housed in a pre-cast concrete building located near Crow's Nest Road.

The current groundwater pre-treatment process incorporates advanced oxidation technology (AOT). AOT is a destructive process incorporating ultraviolet light (UV) and hydrogen peroxide to form hydroxyl radicals, which are powerful oxidizers that convert chlorinated organics to carbon dioxide, water, and chloride salts. The groundwater treatment process also incorporates a polyethylene influent day tank to temporarily store groundwater and facilitate batch process treatment. A filtration system (bag filters) installed ahead of the day tank mitigates solids build-up in the tank and increases AOT efficiency. Upon reaching a high level setpoint in the tank, the system is activated. Groundwater is then transferred via a centrifugal pump from the day tank through the AOT unit. A hydrogen peroxide feed system incorporating a storage tank, metering pump, and control panel is installed in-line within the AOT unit. The feed system delivers 34 percent hydrogen peroxide to the groundwater influent line upstream of the AOT unit. Treated groundwater is discharged via gravity to an infiltration chamber located downgradient of the recovery wells.

Emergent Containment Sampling of Pre-treatment System 2024

In May 2024, Roux collected influent and effluent samples from the GW System for EC analysis. The laboratory results of the sampling indicated that the GW System operating at its current capacity showed a 60% reduction of PFOA concentrations in the effluent compared to the influent, and an 80% reduction of PFOS in the effluent compared to the influent. Concentrations of 1,4 dioxane were observed as non-detect in the effluent. Results of the May 2024 EC sampling are summarized as Table 1 of this work plan, with the laboratory analytical data presented in Attachment 1.

Pre-treatment System Optimization

To reduce EC concentrations within the effluent discharge, Roux intends to perform the following steps:

- The flow rate through the AOT Unit will be reduced by adjustment of valving downstream of the centrifugal transfer pump to allow additional processing time with AOT reaction chamber.
- Any wetted teflon tubing, fittings, etc. used in the hydrogen peroxide feed pump system will be replaced with HDPE, and the peroxide flow rate will be increased by approximately 10 percent (via increased metering pump stroke frequency) to assure complete reaction.
- UV Lamp delivery wattage will be verified to fall within the recommended maximum range of approximately 25-30 KW. A replacement lamp will be installed in the AOT Unit if needed.

Following AOT Unit adjustments, a set of groundwater influent and effluent samples will be collected and sent under chain of custody command to an ELAP Certified NYSDOH laboratory for PFAs analysis (EPA Method 537). A field blank will be collected as well. Results of the sampling and adjustments made to the AOT Unit will be provided in a letter report to the Department.

Schedule

We anticipate that the work specified herein can be completed within 8 weeks of Department approval assuming replacement components (peroxide feed system components and UV lamp, if needed) are readily available.

Please let us know if you have any questions or comments regarding this work plan.

Sincerely,

ROUX

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.



Thomas H. Forbes, P.E.
Vice President, Principal Engineer, Co-Operations Manager

Att.

ec: Joseph Meade (Mercury)
Bud Meade (Mercury)
Greg Hintz (Mercury)
Thomas Tuori (Harter Secrest & Emery LLP, counsel for Mercury)
Rick Dubisz (Roux)
Justin Deming (NYSDOH)
Michael Izdebski (NYSDOH)
David Pratt (NYSDEC)
Michael Ormanoski (NYSDEC)
David Durepo (Town of Urbana)
Richard Buck (Richardson, Pullen & Buck, counsel for Town of Urbana).

Figures



BASE MAP - USGS HAMMONDSPORT AND RHEIMS, NEW YORK QUADRANGLES. DATED 2019.



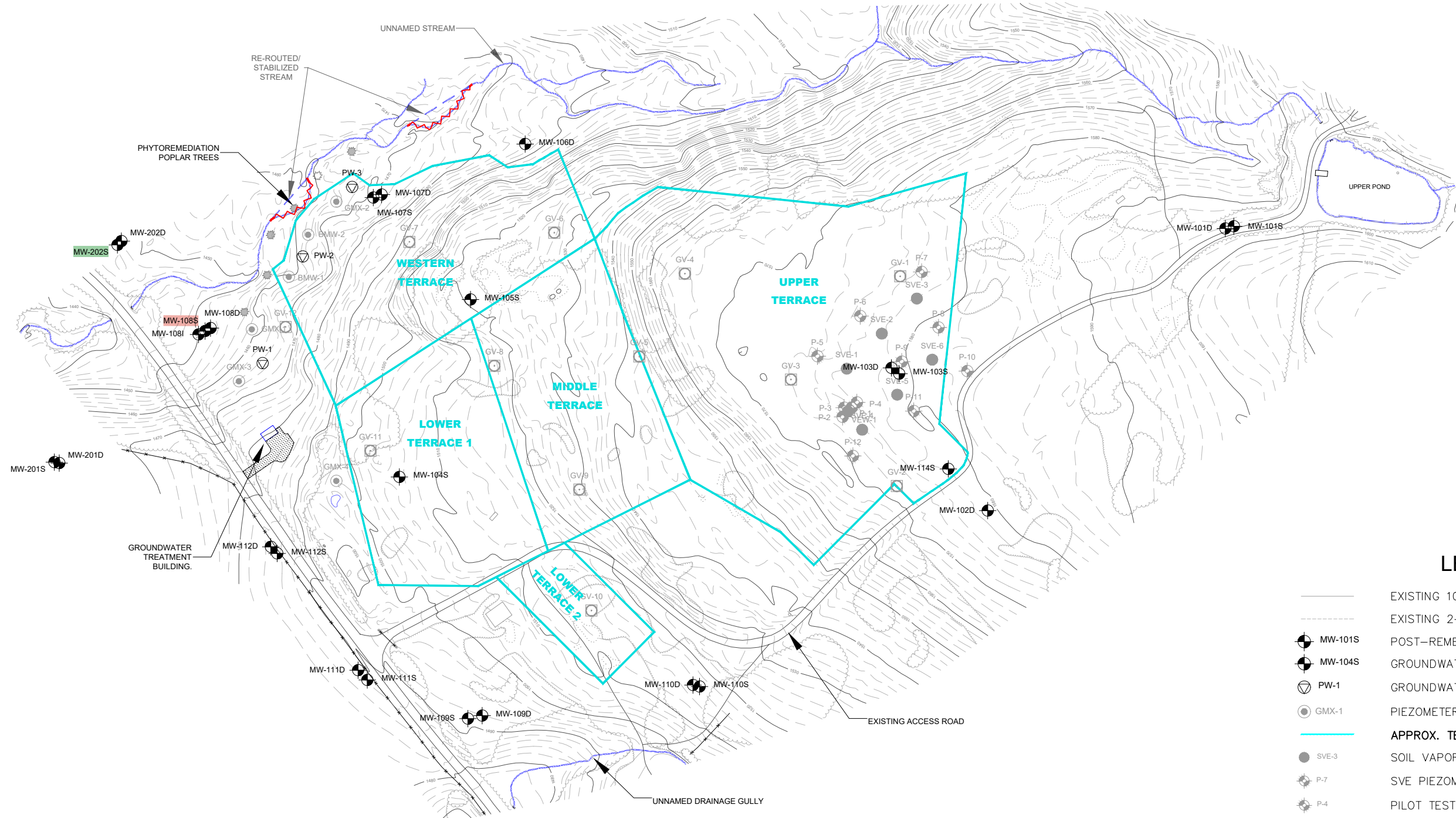
SCALE: 1 INCH = 4,000 FEET
SCALE IN FEET
(approximate)

Title: **SITE LOCATION AND VICINITY MAP**
PERIODIC REVIEW REPORT

URBANA LANDFILL SITE
NYSDEC SITE NO. 8-51-007
URBANA, NEW YORK

Prepared for: **MERCURY AIRCRAFT, INC.**

	Compiled by: RFL	Date: JULY 2024	FIGURE 1
	Prepared by: RFL	Scale: AS SHOWN	
	Project Mgr: THF	Project: XX	
	File: FIGURE 1; SITE LOC & VIC MAP.DWG		



LEGEND

- EXISTING 10-FOOT GROUND SURFACE CONTOUR
- EXISTING 2-FOOT GROUND SURFACE CONTOUR
- MW-101S POST-REMEDIATION MONITORING WELL
- MW-104S GROUNDWATER MONITORING WELL
- PW-1 GROUNDWATER TREATMENT SYSTEM PUMPING WELL
- GMX-1 PIEZOMETER
- APPROX. TERRACE LIMITS
- SVE-3 SOIL VAPOR EXTRACTION (SVE) WELL
- P-7 SVE PIEZOMETER
- P-4 PILOT TEST SVE PIEZOMETER
- GV GAS VENT



SCALE: 1 INCH = 150 FEET
SCALE IN FEET
(approximate)



<p>Title:</p> <p>SITE PLAN</p> <p>PERIODIC REVIEW REPORT</p> <p>URBANA LANDFILL SITE</p> <p>NYSDEC SITE NO. 8-51-007</p> <p>URBANA, NEW YORK</p>										
<p>Prepared for:</p> <p>MERCURY AIRCRAFT, INC.</p>										
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">Compiled by: RFL</td> <td style="font-size: small;">Date: JULY 2024</td> </tr> <tr> <td style="font-size: small;">Prepared by: RFL</td> <td style="font-size: small;">Scale: AS SHOWN</td> </tr> <tr> <td style="font-size: small;">Project Mgr: THF</td> <td style="font-size: small;">Project: XX</td> </tr> <tr> <td colspan="2" style="font-size: x-small;">File: FIGURE 2 - SITE PLAN.DWG</td> </tr> </table>	Compiled by: RFL	Date: JULY 2024	Prepared by: RFL	Scale: AS SHOWN	Project Mgr: THF	Project: XX	File: FIGURE 2 - SITE PLAN.DWG		<p>FIGURE</p> <p>2</p>
Compiled by: RFL	Date: JULY 2024									
Prepared by: RFL	Scale: AS SHOWN									
Project Mgr: THF	Project: XX									
File: FIGURE 2 - SITE PLAN.DWG										

Table



**SUMMARY OF EMERGING CONTAMINANTS GROUNDWATER PRETREATMET SYSTEM ANALYTICAL RESULTS
URBANA LANDFILL SITE No.851007
URBANA, NEW YORK**

PARAMETERS	Sample Location and Date	
	Influent Sample	Effluent Sample
	5/9/2024	
1,4 Dioxane - ng/L		
1,4 Dioxane	1950	ND < 31.4
Perfluorinated Alkyl Acids - ng/L		
Perfluorobutanoic acid (PFBA)	5.39 J	3.53 J
Perfluoropentanoic acid (PFPeA)	2.6 J	2.43 J
Perfluorobutanesulfonic acid (PFBS)	1.94	1.37 J
Perfluorohexanoic acid (PFHxA)	3.87	2.93
Perfluoroheptanoic acid (PFHpA)	4.12	2.32
Perfluorohexanesulfonic acid (PFHxS)	5.76	2.99
Perfluorooctanoic acid (PFOA)	42.2	17.2
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2FTS)	ND < 1.97	ND < 4.82
Perfluoroheptanesulfonic acid (PFHpS)	1.85	0.459 J
Perfluorononanoic acid (PFNA)	1.52	ND < 0.24
Perfluorooctanesulfonic acid (PFOS)	67.1	13.0
Perfluorodecanoic acid (PFDA)	ND < 0.591	ND < 0.68
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2FTS)	ND < 2.27	ND < 2.34
N-Methyl Perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND < 0.795	ND < 0.82
Perfluoroundecanoic Acid (PFUnA)	ND < 0.635	ND < 0.65
Perfluorodecanesulfonic acid (PFDS)	ND < 0.336	ND < 0.34
Perfluorooctanesulfonamide (FOSA)	ND < 0.394	ND < 0.4
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND < 0.788	ND < 0.81
Perfluorododecanoic Acid (PFDoA)	ND < 0.671	ND < 0.69
Perfluorotridecanoic Acid (PFTrA)	ND < 0.547	ND < 0.56
Perfluorotetradecanoic acid (PFTeA)	ND < 0.387	ND < 0.39

Definitions:

ng/L = nanograms per liter

ND < 3.7 = Parameter not detected above method detection limit.

J = Estimated Value - The target analyte concentration is below the Reporting Limit (RL) but above the the Method Detection Limit (MDL)

ATTACHMENT 1

MAY 2024 LABORATORY ANALYTICAL DATA



ANALYTICAL REPORT

Lab Number:	L2425966
Client:	Roux 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Thomas Forbes
Phone:	(716) 856-0599
Project Name:	URBANA LF
Project Number:	4362.0002B000
Report Date:	05/24/24

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

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

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



Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2425966-01	PROCESS INFLUENT	WATER	URBANA, NY	05/09/24 09:30	05/10/24
L2425966-02	PROCESS EFFLUENT	WATER	URBANA, NY	05/09/24 10:10	05/10/24
L2425966-03	FIELD BLANK	WATER	URBANA, NY	05/09/24 10:00	05/10/24

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

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: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Case Narrative (continued)

Report Submission

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

Sample Receipt

L2425966-01: The sample identified as "PROCESS INFLUENT" on the chain of custody was identified as "TREATMENT INFLUENT" on the container label. At the client's request, the sample is reported as "PROCESS INFLUENT".

L2425966-02: The sample identified as "PROCESS EFFLUENT" on the chain of custody was identified as "TREATMENT EFFLUENT" on the container label. At the client's request, the sample is reported as "PROCESS EFFLUENT".

L2425966-03: The analysis of 1,4 Dioxane via EPA 8270C-SIM was requested on the Chain of Custody; however, sample containers were not received. This was verified by the client.

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

Authorized Signature:



Kelly O'Neill

Title: Technical Director/Representative

Date: 05/24/24

ORGANICS

SEMIVOLATILES

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-01
 Client ID: PROCESS INFLUENT
 Sample Location: URBANA, NY

Date Collected: 05/09/24 09:30
 Date Received: 05/10/24
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270E-SIM
 Analytical Date: 05/17/24 21:48
 Analyst: CSP

Extraction Method: EPA 3510C
 Extraction Date: 05/16/24 10:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270E-SIM - Mansfield Lab						
1,4-Dioxane	1950		ng/l	134	30.3	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			36		15-110	

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-01
Client ID: PROCESS INFLUENT
Sample Location: URBANA, NY

Date Collected: 05/09/24 09:30
Date Received: 05/10/24
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 144,1633
Analytical Date: 05/19/24 18:38
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 05/19/24 06:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.39	J	ng/l	5.84	0.934	1
Perfluoropentanoic Acid (PFPeA)	2.60	J	ng/l	2.92	0.781	1
Perfluorobutanesulfonic Acid (PFBS)	1.94		ng/l	1.46	0.489	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	5.84	1.52	1
Perfluorohexanoic Acid (PFHxA)	3.87		ng/l	1.46	0.430	1
Perfluoropentanesulfonic Acid (PFPeS)	2.05		ng/l	1.46	0.255	1
Perfluoroheptanoic Acid (PFHpA)	4.12		ng/l	1.46	0.292	1
Perfluorohexanesulfonic Acid (PFHxS)	5.76		ng/l	1.46	0.350	1
Perfluorooctanoic Acid (PFOA)	42.2		ng/l	1.46	0.635	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	5.84	1.97	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.85		ng/l	1.46	0.394	1
Perfluorononanoic Acid (PFNA)	1.52		ng/l	1.46	0.460	1
Perfluorooctanesulfonic Acid (PFOS)	67.1		ng/l	1.46	0.664	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.46	0.591	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	5.84	2.27	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/l	1.46	0.452	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.46	0.795	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.46	0.635	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.46	0.336	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.46	0.394	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.46	0.788	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.46	0.671	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.46	0.547	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.46	0.387	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	5.84	0.817	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	5.84	0.919	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.46	0.555	1

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-01
Client ID: PROCESS INFLUENT
Sample Location: URBANA, NY

Date Collected: 05/09/24 09:30
Date Received: 05/10/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	5.84	1.20	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	5.84	1.20	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.46	0.635	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.46	0.671	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	14.6	3.43	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	14.6	1.79	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	2.92	0.416	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	2.92	0.387	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEEESA)	ND		ng/l	2.92	0.321	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	2.92	1.72	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.30	2.41	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	36.5	8.54	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	36.5	5.76	1

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-01
 Client ID: PROCESS INFLUENT
 Sample Location: URBANA, NY

Date Collected: 05/09/24 09:30
 Date Received: 05/10/24
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	82		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	89		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	130		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	109		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	88		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	104		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	80		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	81		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	78		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	68		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	75		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	89		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	80		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	105		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	65		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	68		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	90		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	94		20-150

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-02
 Client ID: PROCESS EFFLUENT
 Sample Location: URBANA, NY

Date Collected: 05/09/24 10:10
 Date Received: 05/10/24
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270E-SIM
 Analytical Date: 05/17/24 22:11
 Analyst: CSP

Extraction Method: EPA 3510C
 Extraction Date: 05/16/24 10:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270E-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			31		15-110	

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-02
Client ID: PROCESS EFFLUENT
Sample Location: URBANA, NY

Date Collected: 05/09/24 10:10
Date Received: 05/10/24
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 144,1633
Analytical Date: 05/19/24 18:51
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 05/19/24 06:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.53	J	ng/l	6.02	0.962	1
Perfluoropentanoic Acid (PFPeA)	2.43	J	ng/l	3.01	0.805	1
Perfluorobutanesulfonic Acid (PFBS)	1.37	J	ng/l	1.50	0.504	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.02	1.57	1
Perfluorohexanoic Acid (PFHxA)	2.93		ng/l	1.50	0.444	1
Perfluoropentanesulfonic Acid (PFPeS)	1.53		ng/l	1.50	0.263	1
Perfluoroheptanoic Acid (PFHpA)	2.32		ng/l	1.50	0.301	1
Perfluorohexanesulfonic Acid (PFHxS)	2.99		ng/l	1.50	0.361	1
Perfluorooctanoic Acid (PFOA)	17.2		ng/l	1.50	0.654	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.02	2.03	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.459	J	ng/l	1.50	0.406	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.50	0.474	1
Perfluorooctanesulfonic Acid (PFOS)	13.0		ng/l	1.50	0.684	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.50	0.609	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.02	2.34	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/l	1.50	0.466	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.50	0.820	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.50	0.654	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.50	0.346	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.50	0.406	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.50	0.812	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.50	0.692	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.50	0.564	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.50	0.398	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.02	0.842	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.02	0.947	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.50	0.572	1

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-02
Client ID: PROCESS EFFLUENT
Sample Location: URBANA, NY

Date Collected: 05/09/24 10:10
Date Received: 05/10/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.02	1.24	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.02	1.24	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.50	0.654	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.50	0.692	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.0	3.53	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.0	1.84	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.01	0.429	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.01	0.398	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEEESA)	ND		ng/l	3.01	0.331	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.01	1.77	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.52	2.48	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	37.6	8.80	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	37.6	5.93	1

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-02
 Client ID: PROCESS EFFLUENT
 Sample Location: URBANA, NY

Date Collected: 05/09/24 10:10
 Date Received: 05/10/24
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	97		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	99		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	92		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	93		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	90		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	80		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	80		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	74		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	76		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	82		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	76		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	81		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	74		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	69		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	98		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	64		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	67		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	90		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	93		20-150

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-03
 Client ID: FIELD BLANK
 Sample Location: URBANA, NY

Date Collected: 05/09/24 10:00
 Date Received: 05/10/24
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 144,1633
 Analytical Date: 05/19/24 19:04
 Analyst: ANH

Extraction Method: EPA 1633
 Extraction Date: 05/19/24 06:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.49	J	ng/l	6.38	1.02	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.19	0.853	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.59	0.534	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.38	1.67	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.59	0.470	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.59	0.279	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.59	0.319	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.59	0.383	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.59	0.694	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.38	2.15	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.59	0.431	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.59	0.502	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.59	0.726	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.59	0.646	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.38	2.48	1
Perfluoronanesulfonic Acid (PFNS)	ND		ng/l	1.59	0.494	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.59	0.869	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.59	0.694	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.59	0.367	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.59	0.431	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.59	0.861	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.59	0.734	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.59	0.598	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.59	0.423	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.38	0.893	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.38	1.00	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.59	0.606	1

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-03
Client ID: FIELD BLANK
Sample Location: URBANA, NY

Date Collected: 05/09/24 10:00
Date Received: 05/10/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.38	1.32	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.38	1.32	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.59	0.694	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.59	0.734	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	15.9	3.75	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	15.9	1.95	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.19	0.454	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.19	0.423	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEEESA)	ND		ng/l	3.19	0.351	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.19	1.88	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	7.97	2.63	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	39.9	9.33	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	39.9	6.29	1

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

SAMPLE RESULTS

Lab ID: L2425966-03
Client ID: FIELD BLANK
Sample Location: URBANA, NY

Date Collected: 05/09/24 10:00
Date Received: 05/10/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	98		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	103		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	98		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	86		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	96		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	100		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	94		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	94		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	85		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	85		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	97		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	87		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	81		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	77		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	103		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	91		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	96		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	86		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	111		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	75		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	82		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	103		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	109		20-150

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 05/17/24 15:17
Analyst: CSP

Extraction Method: EPA 3510C
Extraction Date: 05/16/24 10:59

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270E-SIM - Mansfield Lab for sample(s): 01-02 Batch: WG1921950-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	39		15-110

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Method Blank Analysis Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 05/19/24 13:28
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 05/19/24 06:47

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-03 Batch: WG1922994-1					
Perfluorobutanoic Acid (PFBA)	1.46	J	ng/l	6.40	1.02
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	3.20	0.856
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.60	0.536
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	6.40	1.67
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.60	0.472
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.60	0.280
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.60	0.320
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.60	0.384
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.60	0.696
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	6.40	2.16
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.60	0.432
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.60	0.504
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.60	0.728
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.60	0.648
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	6.40	2.49
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.60	0.496
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.60	0.872
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.60	0.696
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.60	0.368
Perfluorooctanesulfonamide (PFOSA)	ND		ng/l	1.60	0.432
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.60	0.864
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.60	0.736
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.60	0.600
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/l	1.60	0.424
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	6.40	0.896
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	6.40	1.01
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/l	1.60	0.608

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Method Blank Analysis Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 05/19/24 13:28
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 05/19/24 06:47

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-03 Batch: WG1922994-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	6.40	1.32
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	6.40	1.32
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/l	1.60	0.696
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/l	1.60	0.736
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/l	16.0	3.76
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/l	16.0	1.96
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/l	3.20	0.456
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/l	3.20	0.424
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/l	3.20	0.352
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/l	3.20	1.89
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/l	8.00	2.64
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/l	40.0	9.36
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/l	40.0	6.31

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Method Blank Analysis Batch Quality Control

Analytical Method: 144,1633
Analytical Date: 05/19/24 13:28
Analyst: ANH

Extraction Method: EPA 1633
Extraction Date: 05/19/24 06:47

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-03 Batch: WG1922994-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	96		20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	99		20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	106		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	84		20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	93		20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	93		20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89		20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	80		20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	92		20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	90		20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	88		20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	71		20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	78		20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	93		20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	83		20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	74		20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	94		20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	104		20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	57		20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	63		20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	94		20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	98		20-150

Lab Control Sample Analysis Batch Quality Control

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270E-SIM - Mansfield Lab Associated sample(s): 01-02 Batch: WG1921950-2 WG1921950-3								
1,4-Dioxane	124		126		40-140	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	34		38		15-110



Lab Control Sample Analysis

Batch Quality Control

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Parameter	Low Level	Qual	Low Level	Qual	%Recovery Limits	RPD	Qual	RPD Limits
	LCS %Recovery		LCS %Recovery					
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1922994-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	97		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	96		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	87		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	106		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	94		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	107		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	92		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	94		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	105		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	101		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	87		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	103		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	114		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	105		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	105		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	101		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	96		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	93		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	89		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	90		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	106		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	95		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Parameter	Low Level	Qual	Low Level	Qual	%Recovery Limits	RPD	Qual	RPD Limits
	LCS %Recovery		LCS %Recovery					
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1922994-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTTrDA)	85		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	100		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	95		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	89		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	75		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	97		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUS)	88		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	90		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	83		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	98		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	99		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	115		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	89		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	93		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	127		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	93		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	76		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	52		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Parameter	Low Level LCS		Low Level LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1922994-2 LOW LEVEL								

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	96				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	101				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	79				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	94				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	92				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	76				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	91				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	86				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	72				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	70				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	99				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	86				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	72				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	96				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	77				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	99				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	55				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	59				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	91				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	95				20-150

Lab Control Sample Analysis

Batch Quality Control

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1922994-3								
Perfluorobutanoic Acid (PFBA)	92		-		40-150	-		30
Perfluoropentanoic Acid (PFPeA)	93		-		40-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	97		-		40-150	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	101		-		40-150	-		30
Perfluorohexanoic Acid (PFHxA)	98		-		40-150	-		30
Perfluoropentanesulfonic Acid (PFPeS)	102		-		40-150	-		30
Perfluoroheptanoic Acid (PFHpA)	92		-		40-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	89		-		40-150	-		30
Perfluorooctanoic Acid (PFOA)	89		-		40-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	98		-		40-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	98		-		40-150	-		30
Perfluorononanoic Acid (PFNA)	97		-		40-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	97		-		40-150	-		30
Perfluorodecanoic Acid (PFDA)	88		-		40-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	91		-		40-150	-		30
Perfluorononanesulfonic Acid (PFNS)	95		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	100		-		40-150	-		30
Perfluoroundecanoic Acid (PFUnA)	91		-		40-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	87		-		40-150	-		30
Perfluorooctanesulfonamide (PFOSA)	98		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		-		40-150	-		30
Perfluorododecanoic Acid (PFDoA)	96		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Parameter	LCS	Qual	LCS	Qual	%Recovery	RPD	Qual	RPD
	%Recovery		%Recovery		Limits			Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1922994-3								
Perfluorotridecanoic Acid (PFTrDA)	86		-		40-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	95		-		40-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	92		-		40-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	81		-		40-150	-		30
Perfluorododecanesulfonic Acid (PFDoS)	75		-		40-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	90		-		40-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUS)	80		-		40-150	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	99		-		40-150	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	98		-		40-150	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	101		-		40-150	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	102		-		40-150	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	110		-		40-150	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	85		-		40-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	93		-		40-150	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	137		-		40-150	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	90		-		40-150	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	87		-		40-150	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	77		-		40-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

Parameter	LCS		LCSD		%Recovery		RPD	RPD	
	%Recovery	Qual	%Recovery	Qual	Limits	Qual		Limits	
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1922994-3									

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	96				20-150
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	103				20-150
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	98				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	82				20-150
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92				20-150
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	94				20-150
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	89				20-150
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	89				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	79				20-150
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	84				20-150
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	87				20-150
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	94				20-150
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	78				20-150
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	71				20-150
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	88				20-150
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	79				20-150
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	71				20-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83				20-150
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	70				20-150
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	105				20-150
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	63				20-150
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	62				20-150
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86				20-150
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	86				20-150

Project Name: URBANA LF
Project Number: 4362.0002B000

Lab Number: L2425966
Report Date: 05/24/24

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(*)
L2425966-01A	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2425966-01B	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2425966-01C	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)
L2425966-01D	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)
L2425966-01E	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)
L2425966-02A	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2425966-02B	Amber 250ml unpreserved	A	7	7	3.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2425966-02C	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)
L2425966-02D	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)
L2425966-02E	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)
L2425966-03A	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)
L2425966-03B	Plastic 500ml unpreserved	A	NA		3.7	Y	Absent		A2-1633-DRAFT(28)

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PFAS PARAMETER SUMMARY

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

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PFAS PARAMETER SUMMARY

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

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GLOSSARY

Acronyms

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

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Footnotes

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

Terms

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

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

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

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

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

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

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

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

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

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

Data Qualifiers

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

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Data Qualifiers

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

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 144 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Draft EPA Method 1633, EPA Document 821-D-22-001, June 2022.

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

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

EPA 625.1: alpha-Terpineol

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

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

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

Mansfield Facility

SM 2540D: TSS.

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

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

Nonpotable Water: **EPA RSK-175 Dissolved Gases**

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

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

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

Non-Potable Water

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

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

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

EPA 624.1: Volatile Halocarbons & Aromatics,

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

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

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

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

