

ANALYTICAL REPORT

PREPARED FOR

Attn: Kyle Malone
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Richmond, Virginia 23228

Generated 3/11/2026 2:59:00 AM

JOB DESCRIPTION

VA Water 1633

JOB NUMBER

410-267923-1

Eurofins Lancaster Laboratories Environment Testing, LLC

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
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Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Definitions/Glossary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Froehling & Robertson
Project: VA Water 1633

Job ID: 410-267923-1

Job ID: 410-267923-1

Eurofins Lancaster Laboratories Environment

Job Narrative 410-267923-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 3/3/2026 7:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C.

PFAS

Method 1633: The LCS labeled isotope(s) 13C8-PFOS recovery associated with samples: Field Blank (410-267923-1), Equipment Blank (410-267923-2) and SP-1 (410-267923-3) is outside the QC acceptance limits. Since the recovery for target analytes is within the limits, the data is reported.

Method 1633: The labeled isotopes 13C2 4:2 FTS are outside QC acceptance limits. Since the recovery in sample SP-1 (410-267923-3) is less than 350%, the data is reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: Field Blank Lab Sample ID: 410-267923-1

No Detections.

Client Sample ID: Equipment Blank Lab Sample ID: 410-267923-2

No Detections.

Client Sample ID: SP-1 Lab Sample ID: 410-267923-3

CAS No.	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
375-22-4	Perfluorobutanoic acid (PFBA)	320		2.9	0.81	ng/L	1		1633	Total/NA
2706-90-3	Perfluoropentanoic acid (PFPeA)	160		1.5	0.44	ng/L	1		1633	Total/NA
307-24-4	Perfluorohexanoic acid (PFHxA)	100		1.5	0.37	ng/L	1		1633	Total/NA
375-85-9	Perfluoroheptanoic acid (PFHpA)	68		1.5	0.59	ng/L	1		1633	Total/NA
335-67-1	Perfluorooctanoic acid (PFOA)	57		1.5	0.66	ng/L	1		1633	Total/NA
375-95-1	Perfluorononanoic acid (PFNA)	35		1.5	0.37	ng/L	1		1633	Total/NA
335-76-2	Perfluorodecanoic acid (PFDA)	16		1.5	0.37	ng/L	1		1633	Total/NA
2058-94-8	Perfluoroundecanoic acid (PFUnA)	9.3		1.5	0.37	ng/L	1		1633	Total/NA
307-55-1	Perfluorododecanoic acid (PFDoA)	5.9		1.5	0.37	ng/L	1		1633	Total/NA
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	2.8		1.5	0.37	ng/L	1		1633	Total/NA
376-06-7	Perfluorotetradecanoic acid (PFTeDA)	0.66	J	1.5	0.37	ng/L	1		1633	Total/NA
375-73-5	Perfluorobutanesulfonic acid (PFBS)	110		1.5	0.37	ng/L	1		1633	Total/NA
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	1.4	J	1.5	1.0	ng/L	1		1633	Total/NA
377-73-1	Perfluoro-3-methoxypropanoic acid (PFMPA)	48		1.5	0.37	ng/L	1		1633	Total/NA
863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMBA)	16		1.5	0.37	ng/L	1		1633	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: Field Blank

Lab Sample ID: 410-267923-1

Date Collected: 03/02/26 09:15

Matrix: Water

Date Received: 03/03/26 07:55

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

CAS No.	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
375-22-4	Perfluorobutanoic acid (PFBA)	ND		3.1	0.86	ng/L		03/04/26 11:51	03/10/26 12:31	1
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.6	0.47	ng/L		03/04/26 11:51	03/10/26 12:31	1
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.6	0.63	ng/L		03/04/26 11:51	03/10/26 12:31	1
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.6	0.71	ng/L		03/04/26 11:51	03/10/26 12:31	1
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
376-06-7	Perfluorotetradecanoic acid (PFTeDA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.6	0.63	ng/L		03/04/26 11:51	03/10/26 12:31	1
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.6	1.0	ng/L		03/04/26 11:51	03/10/26 12:31	1
68259-12-1	Perfluorononanesulfonic acid (PFNS)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND		1.6	0.47	ng/L		03/04/26 11:51	03/10/26 12:31	1
757124-72-4	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		3.1	0.78	ng/L		03/04/26 11:51	03/10/26 12:31	1
27619-97-2	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		3.1	0.78	ng/L		03/04/26 11:51	03/10/26 12:31	1
39108-34-4	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		3.1	0.78	ng/L		03/04/26 11:51	03/10/26 12:31	1
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
31506-32-8	N-methylperfluorooctane sulfonamide (NMeFOSA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
4151-50-2	N-ethylperfluorooctane sulfonamide (NEtFOSA)	ND		1.6	0.86	ng/L		03/04/26 11:51	03/10/26 12:31	1
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
24448-09-7	N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	ND		7.8	3.1	ng/L		03/04/26 11:51	03/10/26 12:31	1
1691-99-2	N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	ND		7.8	3.1	ng/L		03/04/26 11:51	03/10/26 12:31	1
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.6	1.1	ng/L		03/04/26 11:51	03/10/26 12:31	1
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
377-73-1	Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1

Client Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: Field Blank

Lab Sample ID: 410-267923-1

Date Collected: 03/02/26 09:15

Matrix: Water

Date Received: 03/03/26 07:55

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

CAS No.	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
763051-92-9	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
113507-82-7	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		1.6	0.39	ng/L		03/04/26 11:51	03/10/26 12:31	1
356-02-5	3-Perfluoropropylpropanoic acid (3:3 FTCA)	ND		3.1	0.78	ng/L		03/04/26 11:51	03/10/26 12:31	1
914637-49-3	3-Perfluoropentylpropanoic acid (5:3 FTCA)	ND		7.8	2.2	ng/L		03/04/26 11:51	03/10/26 12:31	1
812-70-4	3-Perfluoroheptylpropanoic acid (7:3 FTCA)	ND		7.8	2.0	ng/L		03/04/26 11:51	03/10/26 12:31	1
CAS No.	Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1017281-29-6	13C4-PFBA	103		5 - 130				03/04/26 11:51	03/10/26 12:31	1
2283397-79-3	13C5-PFPeA	101		40 - 130				03/04/26 11:51	03/10/26 12:31	1
2328024-54-8	13C5-PFHxA	109		40 - 130				03/04/26 11:51	03/10/26 12:31	1
2328024-55-9	13C4-PFHpA	102		40 - 130				03/04/26 11:51	03/10/26 12:31	1
1350614-84-4	13C8-PFOA	99.3		40 - 130				03/04/26 11:51	03/10/26 12:31	1
2283397-80-6	13C9-PFNA	98.4		40 - 130				03/04/26 11:51	03/10/26 12:31	1
2328024-56-0	13C6-PFDA	99.1		40 - 130				03/04/26 11:51	03/10/26 12:31	1
N/A	13C7-PFUnA	89.4		30 - 130				03/04/26 11:51	03/10/26 12:31	1
N/A	13C2-PFTeDA	74.6		10 - 130				03/04/26 11:51	03/10/26 12:31	1
2708218-83-9	13C3-PFBS	97.7		40 - 135				03/04/26 11:51	03/10/26 12:31	1
2708218-85-1	13C3-PFHxS	98.2		40 - 130				03/04/26 11:51	03/10/26 12:31	1
2265893-05-6	13C8-PFOS	103	cn	40 - 130				03/04/26 11:51	03/10/26 12:31	1
N/A	13C8-PFOSA	86.6		40 - 130				03/04/26 11:51	03/10/26 12:31	1
1400690-70-1	d3-NMeFOSAA	79.8		40 - 170				03/04/26 11:51	03/10/26 12:31	1
1265205-97-7	d5-NEtFOSAA	84.3		25 - 135				03/04/26 11:51	03/10/26 12:31	1
N/A	13C2 4:2 FTS	97.8		40 - 200				03/04/26 11:51	03/10/26 12:31	1
N/A	13C2 6:2 FTS	103		40 - 200				03/04/26 11:51	03/10/26 12:31	1
N/A	13C2 8:2 FTS	86.2		40 - 300				03/04/26 11:51	03/10/26 12:31	1
N/A	13C3-HFPO-DA	99.4		40 - 130				03/04/26 11:51	03/10/26 12:31	1
N/A	D7-NMeFOSE	60.1		10 - 130				03/04/26 11:51	03/10/26 12:31	1
N/A	D9-NEtFOSE	57.2		10 - 130				03/04/26 11:51	03/10/26 12:31	1
N/A	d5-NEtPFOSA	62.8		10 - 130				03/04/26 11:51	03/10/26 12:31	1
N/A	d3-NMePFOSA	67.6		10 - 130				03/04/26 11:51	03/10/26 12:31	1
960315-52-0	13C2 PFDaA	82.8		10 - 130				03/04/26 11:51	03/10/26 12:31	1

Client Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: Equipment Blank

Lab Sample ID: 410-267923-2

Date Collected: 03/02/26 09:18

Matrix: Water

Date Received: 03/03/26 07:55

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

CAS No.	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
375-22-4	Perfluorobutanoic acid (PFBA)	ND		3.2	0.88	ng/L		03/04/26 11:51	03/06/26 18:29	1
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.6	0.48	ng/L		03/04/26 11:51	03/06/26 18:29	1
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.6	0.64	ng/L		03/04/26 11:51	03/06/26 18:29	1
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.6	0.72	ng/L		03/04/26 11:51	03/06/26 18:29	1
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
376-06-7	Perfluorotetradecanoic acid (PFTeDA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.6	0.64	ng/L		03/04/26 11:51	03/06/26 18:29	1
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.6	1.0	ng/L		03/04/26 11:51	03/06/26 18:29	1
68259-12-1	Perfluorononanesulfonic acid (PFNS)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND		1.6	0.48	ng/L		03/04/26 11:51	03/06/26 18:29	1
757124-72-4	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		3.2	0.80	ng/L		03/04/26 11:51	03/06/26 18:29	1
27619-97-2	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		3.2	0.80	ng/L		03/04/26 11:51	03/06/26 18:29	1
39108-34-4	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		3.2	0.80	ng/L		03/04/26 11:51	03/06/26 18:29	1
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
31506-32-8	N-methylperfluorooctane sulfonamide (NMeFOSA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
4151-50-2	N-ethylperfluorooctane sulfonamide (NEtFOSA)	ND		1.6	0.88	ng/L		03/04/26 11:51	03/06/26 18:29	1
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
24448-09-7	N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	ND		8.0	3.2	ng/L		03/04/26 11:51	03/06/26 18:29	1
1691-99-2	N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	ND		8.0	3.2	ng/L		03/04/26 11:51	03/06/26 18:29	1
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		1.6	1.1	ng/L		03/04/26 11:51	03/06/26 18:29	1
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
377-73-1	Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1

Client Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: Equipment Blank

Lab Sample ID: 410-267923-2

Date Collected: 03/02/26 09:18

Matrix: Water

Date Received: 03/03/26 07:55

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

CAS No.	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
763051-92-9	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
113507-82-7	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		1.6	0.40	ng/L		03/04/26 11:51	03/06/26 18:29	1
356-02-5	3-Perfluoropropylpropanoic acid (3:3 FTCA)	ND		3.2	0.80	ng/L		03/04/26 11:51	03/06/26 18:29	1
914637-49-3	3-Perfluoropentylpropanoic acid (5:3 FTCA)	ND		8.0	2.2	ng/L		03/04/26 11:51	03/06/26 18:29	1
812-70-4	3-Perfluoroheptylpropanoic acid (7:3 FTCA)	ND		8.0	2.0	ng/L		03/04/26 11:51	03/06/26 18:29	1
CAS No.	Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1017281-29-6	13C4-PFBA	124		5 - 130				03/04/26 11:51	03/06/26 18:29	1
2283397-79-3	13C5-PFPeA	120		40 - 130				03/04/26 11:51	03/06/26 18:29	1
2328024-54-8	13C5-PFHxA	118		40 - 130				03/04/26 11:51	03/06/26 18:29	1
2328024-55-9	13C4-PFHpA	121		40 - 130				03/04/26 11:51	03/06/26 18:29	1
1350614-84-4	13C8-PFOA	107		40 - 130				03/04/26 11:51	03/06/26 18:29	1
2283397-80-6	13C9-PFNA	97.8		40 - 130				03/04/26 11:51	03/06/26 18:29	1
2328024-56-0	13C6-PFDA	110		40 - 130				03/04/26 11:51	03/06/26 18:29	1
N/A	13C7-PFUnA	109		30 - 130				03/04/26 11:51	03/06/26 18:29	1
N/A	13C2-PFTeDA	74.1		10 - 130				03/04/26 11:51	03/06/26 18:29	1
2708218-83-9	13C3-PFBS	118		40 - 135				03/04/26 11:51	03/06/26 18:29	1
2708218-85-1	13C3-PFHxS	109		40 - 130				03/04/26 11:51	03/06/26 18:29	1
2265893-05-6	13C8-PFOS	119	cn	40 - 130				03/04/26 11:51	03/06/26 18:29	1
N/A	13C8-PFOSA	99.1		40 - 130				03/04/26 11:51	03/06/26 18:29	1
1400690-70-1	d3-NMeFOSAA	103		40 - 170				03/04/26 11:51	03/06/26 18:29	1
1265205-97-7	d5-NEtFOSAA	96.2		25 - 135				03/04/26 11:51	03/06/26 18:29	1
N/A	13C2 4:2 FTS	131		40 - 200				03/04/26 11:51	03/06/26 18:29	1
N/A	13C2 6:2 FTS	124		40 - 200				03/04/26 11:51	03/06/26 18:29	1
N/A	13C2 8:2 FTS	113		40 - 300				03/04/26 11:51	03/06/26 18:29	1
N/A	13C3-HFPO-DA	106		40 - 130				03/04/26 11:51	03/06/26 18:29	1
N/A	D7-NMeFOSE	62.8		10 - 130				03/04/26 11:51	03/06/26 18:29	1
N/A	D9-NEtFOSE	55.7		10 - 130				03/04/26 11:51	03/06/26 18:29	1
N/A	d5-NEtPFOSA	82.2		10 - 130				03/04/26 11:51	03/06/26 18:29	1
N/A	d3-NMePFOSA	80.3		10 - 130				03/04/26 11:51	03/06/26 18:29	1
960315-52-0	13C2 PFDaA	90.4		10 - 130				03/04/26 11:51	03/06/26 18:29	1

Client Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: SP-1

Lab Sample ID: 410-267923-3

Date Collected: 03/02/26 09:21

Matrix: Water

Date Received: 03/03/26 07:55

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

CAS No.	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
375-22-4	Perfluorobutanoic acid (PFBA)	320		2.9	0.81	ng/L		03/04/26 11:51	03/06/26 18:43	1
2706-90-3	Perfluoropentanoic acid (PFPeA)	160		1.5	0.44	ng/L		03/04/26 11:51	03/06/26 18:43	1
307-24-4	Perfluorohexanoic acid (PFHxA)	100		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
375-85-9	Perfluoroheptanoic acid (PFHpA)	68		1.5	0.59	ng/L		03/04/26 11:51	03/06/26 18:43	1
335-67-1	Perfluorooctanoic acid (PFOA)	57		1.5	0.66	ng/L		03/04/26 11:51	03/06/26 18:43	1
375-95-1	Perfluorononanoic acid (PFNA)	35		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
335-76-2	Perfluorodecanoic acid (PFDA)	16		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
2058-94-8	Perfluoroundecanoic acid (PFUnA)	9.3		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
307-55-1	Perfluorododecanoic acid (PFDoA)	5.9		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	2.8		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
376-06-7	Perfluorotetradecanoic acid (PFTeDA)	0.66	J	1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	110		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.5	0.59	ng/L		03/04/26 11:51	03/06/26 18:43	1
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.5	0.96	ng/L		03/04/26 11:51	03/06/26 18:43	1
68259-12-1	Perfluorononanesulfonic acid (PFNS)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND		1.5	0.44	ng/L		03/04/26 11:51	03/06/26 18:43	1
757124-72-4	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.9	0.74	ng/L		03/04/26 11:51	03/06/26 18:43	1
27619-97-2	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.9	0.74	ng/L		03/04/26 11:51	03/06/26 18:43	1
39108-34-4	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.9	0.74	ng/L		03/04/26 11:51	03/06/26 18:43	1
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
31506-32-8	N-methylperfluorooctane sulfonamide (NMeFOSA)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
4151-50-2	N-ethylperfluorooctane sulfonamide (NEtFOSA)	ND		1.5	0.81	ng/L		03/04/26 11:51	03/06/26 18:43	1
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
24448-09-7	N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	ND		7.4	2.9	ng/L		03/04/26 11:51	03/06/26 18:43	1
1691-99-2	N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	ND		7.4	2.9	ng/L		03/04/26 11:51	03/06/26 18:43	1
13252-13-6	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	1.4	J	1.5	1.0	ng/L		03/04/26 11:51	03/06/26 18:43	1
919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
377-73-1	Perfluoro-3-methoxypropanoic acid (PFMPA)	48		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMBA)	16		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1

Client Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: SP-1

Lab Sample ID: 410-267923-3

Date Collected: 03/02/26 09:21

Matrix: Water

Date Received: 03/03/26 07:55

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

CAS No.	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
763051-92-9	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
113507-82-7	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		1.5	0.37	ng/L		03/04/26 11:51	03/06/26 18:43	1
356-02-5	3-Perfluoropropylpropanoic acid (3:3 FTCA)	ND		2.9	0.74	ng/L		03/04/26 11:51	03/06/26 18:43	1
914637-49-3	3-Perfluoropentylpropanoic acid (5:3 FTCA)	ND		7.4	2.1	ng/L		03/04/26 11:51	03/06/26 18:43	1
812-70-4	3-Perfluoroheptylpropanoic acid (7:3 FTCA)	ND		7.4	1.8	ng/L		03/04/26 11:51	03/06/26 18:43	1
CAS No.	Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1017281-29-6	13C4-PFBA	116		5 - 130				03/04/26 11:51	03/06/26 18:43	1
2283397-79-3	13C5-PFPeA	119		40 - 130				03/04/26 11:51	03/06/26 18:43	1
2328024-54-8	13C5-PFHxA	118		40 - 130				03/04/26 11:51	03/06/26 18:43	1
2328024-55-9	13C4-PFHpA	111		40 - 130				03/04/26 11:51	03/06/26 18:43	1
1350614-84-4	13C8-PFOA	103		40 - 130				03/04/26 11:51	03/06/26 18:43	1
2283397-80-6	13C9-PFNA	104		40 - 130				03/04/26 11:51	03/06/26 18:43	1
2328024-56-0	13C6-PFDA	101		40 - 130				03/04/26 11:51	03/06/26 18:43	1
N/A	13C7-PFUnA	114		30 - 130				03/04/26 11:51	03/06/26 18:43	1
N/A	13C2-PFTeDA	73.9		10 - 130				03/04/26 11:51	03/06/26 18:43	1
2708218-83-9	13C3-PFBS	114		40 - 135				03/04/26 11:51	03/06/26 18:43	1
2708218-85-1	13C3-PFHxS	104		40 - 130				03/04/26 11:51	03/06/26 18:43	1
2265893-05-6	13C8-PFOS	104	cn	40 - 130				03/04/26 11:51	03/06/26 18:43	1
N/A	13C8-PFOSA	88.0		40 - 130				03/04/26 11:51	03/06/26 18:43	1
1400690-70-1	d3-NMeFOSAA	97.9		40 - 170				03/04/26 11:51	03/06/26 18:43	1
1265205-97-7	d5-NEtFOSAA	88.2		25 - 135				03/04/26 11:51	03/06/26 18:43	1
N/A	13C2 4:2 FTS	202	*5+ cn	40 - 200				03/04/26 11:51	03/06/26 18:43	1
N/A	13C2 6:2 FTS	176		40 - 200				03/04/26 11:51	03/06/26 18:43	1
N/A	13C2 8:2 FTS	116		40 - 300				03/04/26 11:51	03/06/26 18:43	1
N/A	13C3-HFPO-DA	111		40 - 130				03/04/26 11:51	03/06/26 18:43	1
N/A	D7-NMeFOSE	57.0		10 - 130				03/04/26 11:51	03/06/26 18:43	1
N/A	D9-NEtFOSE	54.1		10 - 130				03/04/26 11:51	03/06/26 18:43	1
N/A	d5-NEtPFOSA	62.6		10 - 130				03/04/26 11:51	03/06/26 18:43	1
N/A	d3-NMePFOSA	70.9		10 - 130				03/04/26 11:51	03/06/26 18:43	1
960315-52-0	13C2 PFDaA	89.8		10 - 130				03/04/26 11:51	03/06/26 18:43	1

Isotope Dilution Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (5-130)	PFPeA (40-130)	13C5PHA (40-130)	C4PFHA (40-130)	C8PFOA (40-130)	C9PFNA (40-130)	C6PFDA (40-130)	13C7PUA (30-130)
410-267923-1	Field Blank	103	101	109	102	99.3	98.4	99.1	89.4
410-267923-2	Equipment Blank	124	120	118	121	107	97.8	110	109
410-267923-3	SP-1	116	119	118	111	103	104	101	114
LCS 410-777459/5-A	Lab Control Sample	123	120	125	121	121	103	118	120
LCSD 410-777459/6-A	Lab Control Sample Dup	107	103	96.1	89.1	93.0	91.1	94.7	102
LLCS 410-777459/7-A	Lab Control Sample	117	107	112	112	117	103	104	100
MB 410-777459/4-A	Method Blank	117	111	111	97.3	102	94.5	102	97.4

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFTDA (10-130)	C3PFBS (40-135)	C3PFHS (40-130)	C8PFOS (40-130)	PFOSA (40-130)	d3NMFOS (40-170)	d5NEFOS (25-135)	M242FTS (40-200)
410-267923-1	Field Blank	74.6	97.7	98.2	103 cn	86.6	79.8	84.3	97.8
410-267923-2	Equipment Blank	74.1	118	109	119 cn	99.1	103	96.2	131
410-267923-3	SP-1	73.9	114	104	104 cn	88.0	97.9	88.2	202 *5+ cn
LCS 410-777459/5-A	Lab Control Sample	86.3	127	127	131 *5+	99.3	106	103	143
LCSD 410-777459/6-A	Lab Control Sample Dup	78.6	96.6	96.1	104	88.9	88.9	87.7	113
LLCS 410-777459/7-A	Lab Control Sample	84.4	116	108	113	91.5	103	96.9	129
MB 410-777459/4-A	Method Blank	71.0	107	100	107	92.7	91.6	93.5	121

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (40-200)	M282FTS (40-300)	HFPODA (40-130)	NMFM (10-130)	NEFM (10-130)	d5NPFSA (10-130)	d3NMFSA (10-130)	PFDaA (10-130)
410-267923-1	Field Blank	103	86.2	99.4	60.1	57.2	62.8	67.6	82.8
410-267923-2	Equipment Blank	124	113	106	62.8	55.7	82.2	80.3	90.4
410-267923-3	SP-1	176	116	111	57.0	54.1	62.6	70.9	89.8
LCS 410-777459/5-A	Lab Control Sample	146	133	117	78.3	69.6	75.5	76.6	112
LCSD 410-777459/6-A	Lab Control Sample Dup	110	99.3	92.0	60.2	60.3	67.5	67.7	88.2
LLCS 410-777459/7-A	Lab Control Sample	137	133	106	69.8	58.7	72.5	72.4	101
MB 410-777459/4-A	Method Blank	125	106	109	61.3	55.9	69.6	77.0	90.0

Surrogate Legend

PFBA = 13C4-PFBA
PFPeA = 13C5-PFPeA
13C5PHA = 13C5-PFHxA
C4PFHA = 13C4-PFHpA
C8PFOA = 13C8-PFOA
C9PFNA = 13C9-PFNA
C6PFDA = 13C6-PFDA
13C7PUA = 13C7-PFUnA
PFTDA = 13C2-PFTeDA
C3PFBS = 13C3-PFBS
C3PFHS = 13C3-PFHxS
C8PFOS = 13C8-PFOS
PFOSA = 13C8-PFOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NeIFOSAA
M242FTS = 13C2 4:2 FTS
M262FTS = 13C2 6:2 FTS
M282FTS = 13C2 8:2 FTS
HFPODA = 13C3-HFPO-DA
NMFM = D7-NMeFOSE

Isotope Dilution Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633
NEFM = D9-NEtFOSE
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA
PFDoA = 13C2 PFDoA

Job ID: 410-267923-1

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QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Lab Sample ID: MB 410-777459/4-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 777459

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		4.0	1.1	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.60	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.90	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorotridecanoic acid (PFTeDA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorotetradecanoic acid (PFTeDA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.80	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorononanesulfonic acid (PFNS)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.0	0.60	ng/L		03/04/26 11:51	03/06/26 15:32	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		4.0	1.0	ng/L		03/04/26 11:51	03/06/26 15:32	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		4.0	1.0	ng/L		03/04/26 11:51	03/06/26 15:32	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		4.0	1.0	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluorooctanesulfonamide (PFOSA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	ND		2.0	1.1	ng/L		03/04/26 11:51	03/06/26 15:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	ND		10	4.0	ng/L		03/04/26 11:51	03/06/26 15:32	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	ND		10	4.0	ng/L		03/04/26 11:51	03/06/26 15:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		2.0	1.4	ng/L		03/04/26 11:51	03/06/26 15:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 410-777459/4-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 777459

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11CI-PF3OUdS)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		2.0	0.50	ng/L		03/04/26 11:51	03/06/26 15:32	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	ND		4.0	1.0	ng/L		03/04/26 11:51	03/06/26 15:32	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	ND		10	2.8	ng/L		03/04/26 11:51	03/06/26 15:32	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	ND		10	2.5	ng/L		03/04/26 11:51	03/06/26 15:32	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4-PFBA	117		5 - 130	03/04/26 11:51	03/06/26 15:32	1
13C5-PFPeA	111		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C5-PFHxA	111		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C4-PFHpA	97.3		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C8-PFOA	102		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C9-PFNA	94.5		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C6-PFDA	102		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C7-PFUnA	97.4		30 - 130	03/04/26 11:51	03/06/26 15:32	1
13C2-PFTeDA	71.0		10 - 130	03/04/26 11:51	03/06/26 15:32	1
13C3-PFBS	107		40 - 135	03/04/26 11:51	03/06/26 15:32	1
13C3-PFHxS	100		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C8-PFOS	107		40 - 130	03/04/26 11:51	03/06/26 15:32	1
13C8-PFOSA	92.7		40 - 130	03/04/26 11:51	03/06/26 15:32	1
d3-NMeFOSAA	91.6		40 - 170	03/04/26 11:51	03/06/26 15:32	1
d5-NEtFOSAA	93.5		25 - 135	03/04/26 11:51	03/06/26 15:32	1
13C2 4:2 FTS	121		40 - 200	03/04/26 11:51	03/06/26 15:32	1
13C2 6:2 FTS	125		40 - 200	03/04/26 11:51	03/06/26 15:32	1
13C2 8:2 FTS	106		40 - 300	03/04/26 11:51	03/06/26 15:32	1
13C3-HFPO-DA	109		40 - 130	03/04/26 11:51	03/06/26 15:32	1
D7-NMeFOSE	61.3		10 - 130	03/04/26 11:51	03/06/26 15:32	1
D9-NEtFOSE	55.9		10 - 130	03/04/26 11:51	03/06/26 15:32	1
d5-NEtPFOSA	69.6		10 - 130	03/04/26 11:51	03/06/26 15:32	1
d3-NMePFOSA	77.0		10 - 130	03/04/26 11:51	03/06/26 15:32	1
13C2 PFDoA	90.0		10 - 130	03/04/26 11:51	03/06/26 15:32	1

Lab Sample ID: LCS 410-777459/5-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	80.0	70.7		ng/L		88	70 - 140
Perfluoropentanoic acid (PFPeA)	40.0	35.2		ng/L		88	65 - 135
Perfluorohexanoic acid (PFHxA)	40.0	35.7		ng/L		89	70 - 145
Perfluoroheptanoic acid (PFHpA)	40.0	33.7		ng/L		84	70 - 150
Perfluorooctanoic acid (PFOA)	40.0	34.3		ng/L		86	70 - 150
Perfluorononanoic acid (PFNA)	40.0	35.8		ng/L		90	70 - 150
Perfluorodecanoic acid (PFDA)	40.0	35.8		ng/L		89	70 - 140

QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-777459/5-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	40.0	40.0		ng/L		100	70 - 145
Perfluorododecanoic acid (PFDoA)	40.0	37.4		ng/L		94	70 - 140
Perfluorotridecanoic acid (PFTrDA)	40.0	43.0		ng/L		107	65 - 140
Perfluorotetradecanoic acid (PFTeDA)	40.0	33.3		ng/L		83	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.5	29.9		ng/L		84	60 - 145
Perfluoropentanesulfonic acid (PFPeS)	37.6	34.6		ng/L		92	65 - 140
Perfluorohexanesulfonic acid (PFHxS)	36.5	31.3		ng/L		86	65 - 145
Perfluoroheptanesulfonic acid (PFHpS)	38.2	28.9		ng/L		76	70 - 150
Perfluorooctanesulfonic acid (PFOS)	37.2	28.9		ng/L		78	55 - 150
Perfluorononanesulfonic acid (PFNS)	38.5	29.7		ng/L		77	65 - 145
Perfluorodecanesulfonic acid (PFDS)	38.6	27.7		ng/L		72	60 - 145
Perfluorododecanesulfonic acid (PFDoS)	38.8	20.5		ng/L		53	50 - 145
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	75.0	59.7		ng/L		80	70 - 145
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	76.2	65.1		ng/L		86	65 - 155
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	76.8	66.6		ng/L		87	60 - 150
Perfluorooctanesulfonamide (PFOSA)	40.0	34.3		ng/L		86	70 - 145
N-methylperfluorooctane sulfonamide (NMeFOSA)	40.0	39.8		ng/L		99	60 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	40.0	40.8		ng/L		102	65 - 145
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	32.9		ng/L		82	50 - 140
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	35.2		ng/L		88	70 - 145
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	200	183		ng/L		92	70 - 145
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	200	169		ng/L		85	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	30.0	26.6		ng/L		89	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	30.9		ng/L		82	65 - 145
Perfluoro-3-methoxypropanoic acid (PFMPA)	40.0	36.8		ng/L		92	55 - 140
Perfluoro-4-methoxybutanoic acid (PFMBA)	40.0	33.7		ng/L		84	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	40.0	36.2		ng/L		90	50 - 150

QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-777459/5-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	37.4	30.0		ng/L		80	70 - 155
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	37.8	24.6		ng/L		65	55 - 160
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	35.7	31.4		ng/L		88	70 - 140
3-Perfluoropropylpropanoic acid (3:3 FTCA)	80.0	63.8		ng/L		80	65 - 130
3-Perfluoropentylpropanoic acid (5:3 FTCA)	200	143		ng/L		71	70 - 135
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	200	143		ng/L		71	50 - 145

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4-PFBA	123		5 - 130
13C5-PFPeA	120		40 - 130
13C5-PFHxA	125		40 - 130
13C4-PFHpA	121		40 - 130
13C8-PFOA	121		40 - 130
13C9-PFNA	103		40 - 130
13C6-PFDA	118		40 - 130
13C7-PFUnA	120		30 - 130
13C2-PFTeDA	86.3		10 - 130
13C3-PFBS	127		40 - 135
13C3-PFHxS	127		40 - 130
13C8-PFOS	131	*5+	40 - 130
13C8-PFOSA	99.3		40 - 130
d3-NMeFOSAA	106		40 - 170
d5-NEtFOSAA	103		25 - 135
13C2 4:2 FTS	143		40 - 200
13C2 6:2 FTS	146		40 - 200
13C2 8:2 FTS	133		40 - 300
13C3-HFPO-DA	117		40 - 130
D7-NMeFOSE	78.3		10 - 130
D9-NEtFOSE	69.6		10 - 130
d5-NEtPFOSA	75.5		10 - 130
d3-NMePFOSA	76.6		10 - 130
13C2 PFDoA	112		10 - 130

Lab Sample ID: LCSD 410-777459/6-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)	80.0	70.1		ng/L		88	70 - 140	1	30
Perfluoropentanoic acid (PFPeA)	40.0	34.6		ng/L		87	65 - 135	2	30
Perfluorohexanoic acid (PFHxA)	40.0	35.5		ng/L		89	70 - 145	1	30
Perfluoroheptanoic acid (PFHpA)	40.0	37.1		ng/L		93	70 - 150	10	30
Perfluorooctanoic acid (PFOA)	40.0	33.7		ng/L		84	70 - 150	2	30

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 410-777459/6-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	40.0	33.6		ng/L		84	70 - 150	6	30
Perfluorodecanoic acid (PFDA)	40.0	35.0		ng/L		88	70 - 140	2	30
Perfluoroundecanoic acid (PFUnA)	40.0	33.2		ng/L		83	70 - 145	19	30
Perfluorododecanoic acid (PFDoA)	40.0	36.5		ng/L		91	70 - 140	2	30
Perfluorotridecanoic acid (PFTrDA)	40.0	44.2		ng/L		111	65 - 140	3	30
Perfluorotetradecanoic acid (PFTeDA)	40.0	34.6		ng/L		86	60 - 140	4	30
Perfluorobutanesulfonic acid (PFBS)	35.5	30.1		ng/L		85	60 - 145	1	30
Perfluoropentanesulfonic acid (PFPeS)	37.6	33.8		ng/L		90	65 - 140	2	30
Perfluorohexanesulfonic acid (PFHxS)	36.5	31.3		ng/L		86	65 - 145	0	30
Perfluoroheptanesulfonic acid (PFHpS)	38.2	32.2		ng/L		84	70 - 150	11	30
Perfluorooctanesulfonic acid (PFOS)	37.2	29.3		ng/L		79	55 - 150	1	30
Perfluorononanesulfonic acid (PFNS)	38.5	31.2		ng/L		81	65 - 145	5	30
Perfluorodecanesulfonic acid (PFDS)	38.6	29.0		ng/L		75	60 - 145	5	30
Perfluorododecanesulfonic acid (PFDoS)	38.8	26.8		ng/L		69	50 - 145	26	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	75.0	63.6		ng/L		85	70 - 145	6	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	76.2	62.5		ng/L		82	65 - 155	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	76.8	69.9		ng/L		91	60 - 150	5	30
Perfluorooctanesulfonamide (PFOSA)	40.0	35.1		ng/L		88	70 - 145	2	30
N-methylperfluorooctane sulfonamide (NMeFOSA)	40.0	40.2		ng/L		101	60 - 150	1	30
N-ethylperfluorooctane sulfonamide (NEtFOSA)	40.0	39.7		ng/L		99	65 - 145	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	32.7		ng/L		82	50 - 140	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	34.8		ng/L		87	70 - 145	1	30
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	200	177		ng/L		88	70 - 145	4	30
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	200	188		ng/L		94	70 - 135	10	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	30.0	27.3		ng/L		91	70 - 140	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	35.8		ng/L		95	65 - 145	15	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	40.0	36.3		ng/L		91	55 - 140	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	40.0	33.9		ng/L		85	60 - 150	1	30

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 410-777459/6-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	40.0	32.8		ng/L		82	50 - 150	10	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	37.4	28.5		ng/L		76	70 - 155	5	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	37.8	28.4		ng/L		75	55 - 160	14	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	35.7	31.2		ng/L		88	70 - 140	0	30
3-Perfluoropropylpropanoic acid (3:3 FTCA)	80.0	66.8		ng/L		84	65 - 130	5	30
3-Perfluoropentylpropanoic acid (5:3 FTCA)	200	153		ng/L		76	70 - 135	7	30
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	200	141		ng/L		70	50 - 145	1	30
Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits						
13C4-PFBA	107		5 - 130						
13C5-PFPeA	103		40 - 130						
13C5-PFHxA	96.1		40 - 130						
13C4-PFHpA	89.1		40 - 130						
13C8-PFOA	93.0		40 - 130						
13C9-PFNA	91.1		40 - 130						
13C6-PFDA	94.7		40 - 130						
13C7-PFUnA	102		30 - 130						
13C2-PFTeDA	78.6		10 - 130						
13C3-PFBS	96.6		40 - 135						
13C3-PFHxS	96.1		40 - 130						
13C8-PFOS	104		40 - 130						
13C8-PFOSA	88.9		40 - 130						
d3-NMeFOSAA	88.9		40 - 170						
d5-NEtFOSAA	87.7		25 - 135						
13C2 4:2 FTS	113		40 - 200						
13C2 6:2 FTS	110		40 - 200						
13C2 8:2 FTS	99.3		40 - 300						
13C3-HFPO-DA	92.0		40 - 130						
D7-NMeFOSE	60.2		10 - 130						
D9-NEtFOSE	60.3		10 - 130						
d5-NEtPFOSA	67.5		10 - 130						
d3-NMePFOSA	67.7		10 - 130						
13C2 PFDoA	88.2		10 - 130						

Lab Sample ID: LLCS 410-777459/7-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	8.00	6.91		ng/L		86	70 - 140
Perfluoropentanoic acid (PFPeA)	4.00	3.62		ng/L		90	65 - 135
Perfluorohexanoic acid (PFHxA)	4.00	3.21		ng/L		80	70 - 145

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-777459/7-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanoic acid (PFHpA)	4.00	3.01		ng/L		75	70 - 150
Perfluorooctanoic acid (PFOA)	4.00	2.93		ng/L		73	70 - 150
Perfluorononanoic acid (PFNA)	4.00	3.26		ng/L		82	70 - 150
Perfluorodecanoic acid (PFDA)	4.00	3.65		ng/L		91	70 - 140
Perfluoroundecanoic acid (PFUnA)	4.00	3.67		ng/L		92	70 - 145
Perfluorododecanoic acid (PFDoA)	4.00	3.43		ng/L		86	70 - 140
Perfluorotridecanoic acid (PFTrDA)	4.00	3.80		ng/L		95	65 - 140
Perfluorotetradecanoic acid (PFTeDA)	4.00	3.11		ng/L		78	60 - 140
Perfluorobutanesulfonic acid (PFBS)	3.55	3.02		ng/L		85	60 - 145
Perfluoropentanesulfonic acid (PFPeS)	3.76	3.27		ng/L		87	65 - 140
Perfluorohexanesulfonic acid (PFHxS)	3.65	3.38		ng/L		93	65 - 145
Perfluoroheptanesulfonic acid (PFHpS)	3.82	3.00		ng/L		79	70 - 150
Perfluorooctanesulfonic acid (PFOS)	3.72	2.97		ng/L		80	55 - 150
Perfluorononanesulfonic acid (PFNS)	3.85	2.99		ng/L		78	65 - 145
Perfluorodecanesulfonic acid (PFDS)	3.86	2.76		ng/L		72	60 - 145
Perfluorododecanesulfonic acid (PFDoS)	3.88	2.53		ng/L		65	50 - 145
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	7.50	6.44		ng/L		86	70 - 145
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	7.62	6.06		ng/L		80	65 - 155
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	7.68	6.95		ng/L		91	60 - 150
Perfluorooctanesulfonamide (PFOSA)	4.00	4.06		ng/L		102	70 - 145
N-methylperfluorooctane sulfonamide (NMeFOSA)	4.00	3.86		ng/L		96	60 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	4.00	3.42		ng/L		85	65 - 145
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.00	3.13		ng/L		78	50 - 140
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.00	3.85		ng/L		96	70 - 145
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	20.0	18.6		ng/L		93	70 - 145
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	20.0	18.3		ng/L		91	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	3.00	2.67		ng/L		89	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	3.78	3.40		ng/L		90	65 - 145
Perfluoro-3-methoxypropanoic acid (PFMPA)	4.00	3.79		ng/L		95	55 - 140

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-777459/7-A

Matrix: Water

Analysis Batch: 778670

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 777459

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-4-methoxybutanoic acid (PFMBA)	4.00	3.52		ng/L		88	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	4.00	3.81		ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	3.74	2.96		ng/L		79	70 - 155
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	3.78	2.72		ng/L		72	55 - 160
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	3.57	3.09		ng/L		87	70 - 140
3-Perfluoropropylpropanoic acid (3:3 FTCA)	8.00	6.75		ng/L		84	65 - 130
3-Perfluoropentylpropanoic acid (5:3 FTCA)	20.0	16.7		ng/L		83	70 - 135
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	20.0	14.9		ng/L		75	50 - 145

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
13C4-PFBA	117		5 - 130
13C5-PFPeA	107		40 - 130
13C5-PFHxA	112		40 - 130
13C4-PFHpA	112		40 - 130
13C8-PFOA	117		40 - 130
13C9-PFNA	103		40 - 130
13C6-PFDA	104		40 - 130
13C7-PFUnA	100		30 - 130
13C2-PFTeDA	84.4		10 - 130
13C3-PFBS	116		40 - 135
13C3-PFHxS	108		40 - 130
13C8-PFOS	113		40 - 130
13C8-PFOSA	91.5		40 - 130
d3-NMeFOSAA	103		40 - 170
d5-NEtFOSAA	96.9		25 - 135
13C2 4:2 FTS	129		40 - 200
13C2 6:2 FTS	137		40 - 200
13C2 8:2 FTS	133		40 - 300
13C3-HFPO-DA	106		40 - 130
D7-NMeFOSE	69.8		10 - 130
D9-NEtFOSE	58.7		10 - 130
d5-NEtPFOSA	72.5		10 - 130
d3-NMePFOSA	72.4		10 - 130
13C2 PFDoA	101		10 - 130

QC Association Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

LCMS

Prep Batch: 777459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-267923-1	Field Blank	Total/NA	Water	1633	
410-267923-2	Equipment Blank	Total/NA	Water	1633	
410-267923-3	SP-1	Total/NA	Water	1633	
MB 410-777459/4-A	Method Blank	Total/NA	Water	1633	
LCS 410-777459/5-A	Lab Control Sample	Total/NA	Water	1633	
LCSD 410-777459/6-A	Lab Control Sample Dup	Total/NA	Water	1633	
LLCS 410-777459/7-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 778670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-267923-2	Equipment Blank	Total/NA	Water	1633	777459
410-267923-3	SP-1	Total/NA	Water	1633	777459
MB 410-777459/4-A	Method Blank	Total/NA	Water	1633	777459
LCS 410-777459/5-A	Lab Control Sample	Total/NA	Water	1633	777459
LCSD 410-777459/6-A	Lab Control Sample Dup	Total/NA	Water	1633	777459
LLCS 410-777459/7-A	Lab Control Sample	Total/NA	Water	1633	777459

Analysis Batch: 780322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-267923-1	Field Blank	Total/NA	Water	1633	777459

Lab Chronicle

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Client Sample ID: Field Blank

Lab Sample ID: 410-267923-1

Date Collected: 03/02/26 09:15

Matrix: Water

Date Received: 03/03/26 07:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1633			777459	GY3C	ELLE	03/04/26 11:51
Total/NA	Analysis	1633		1	780322	LDU5	ELLE	03/10/26 12:31

Client Sample ID: Equipment Blank

Lab Sample ID: 410-267923-2

Date Collected: 03/02/26 09:18

Matrix: Water

Date Received: 03/03/26 07:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1633			777459	GY3C	ELLE	03/04/26 11:51
Total/NA	Analysis	1633		1	778670	LDU5	ELLE	03/06/26 18:29

Client Sample ID: SP-1

Lab Sample ID: 410-267923-3

Date Collected: 03/02/26 09:21

Matrix: Water

Date Received: 03/03/26 07:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1633			777459	GY3C	ELLE	03/04/26 11:51
Total/NA	Analysis	1633		1	778670	LDU5	ELLE	03/06/26 18:43

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-26
A2LA	Dept. of Energy	0001.01	11-30-26
A2LA	ISO/IEC 17025	0001.01	11-30-26
Alabama	State	43200	01-31-27
Alaska	State	PA00009	06-30-26
Alaska (UST)	State	17-027	12-30-26
Arizona	State	AZ0780	03-11-26
Arkansas DEQ	State	88-00660	08-09-26
Colorado	State	PA00009	06-30-26
Connecticut	State	PH-0746	06-30-27
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-27
Delaware (DW)	State	N/A	01-31-27
Florida	NELAP	E87997	06-30-26
Georgia (DW)	State	C048	01-31-27
Illinois	NELAP	200027	01-31-27
Kansas	NELAP	E-10151	10-31-26
Kentucky (DW)	State	KY90088	12-31-26
Kentucky (UST)	State	0001.01	11-30-26
Kentucky (WW)	State	KY90088	12-31-26
Louisiana (All)	NELAP	02055	06-30-26
Maine	State	2019012	03-12-27
Maryland	State	100	06-30-26
Massachusetts	State	M-PA009	06-30-26
Michigan	State	9930	01-31-27
Minnesota	NELAP	042-999-487	12-31-26
Mississippi	State	023	01-31-27
Missouri	State	450	01-31-28
Montana (DW)	State	0098	01-01-27
Nebraska	State	NE-OS-32-17	01-31-27
New Hampshire	NELAP	2730	01-10-27
New Jersey	NELAP	PA011	06-30-26
New York	NELAP	10670	04-01-26
North Carolina (DW)	State	42705	07-31-26
North Carolina (WW/SW)	State	521	01-01-27
North Dakota	State	R-205	01-31-24 *
Ohio	State	87787	01-31-27
Oklahoma	NELAP	9804	12-13-26
Oregon	NELAP	PA200001	09-11-26
Pennsylvania	NELAP	36-00037	01-31-27
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-29
Rhode Island	State	LAO00338	12-31-26
South Carolina	State	89002	01-31-27
Tennessee	State	02838	01-31-27
Texas	NELAP	T104704194-23-46	08-31-26
USDA	US Federal Programs	525-22-298-19481	03-13-26
Vermont	State	VT - 36037	10-28-26
Virginia	NELAP	460182	06-14-26
Washington	State	C457	04-11-26
West Virginia (DW)	State	9906 C	01-31-27

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Lancaster Laboratories Environment Testing, LLC

Accreditation/Certification Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	055	07-31-26
Wyoming	State	8TMS-L	01-31-27
Wyoming (UST)	A2LA	0001.01	11-30-26

Method Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Method	Method Description	Protocol	Laboratory
1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS	EPA	ELLE
1633	Solid-Phase Extraction (SPE)	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Froehling & Robertson
Project/Site: VA Water 1633

Job ID: 410-267923-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
410-267923-1	Field Blank	Water	03/02/26 09:15	03/03/26 07:55	Virginia
410-267923-2	Equipment Blank	Water	03/02/26 09:18	03/03/26 07:55	Virginia
410-267923-3	SP-1	Water	03/02/26 09:21	03/03/26 07:55	Virginia



410-267923 Chain of Custody

nvironme

Chain of Custody Record

#202
Virginia Beach Service Center

eurofins

Environment Testing

Virginia Beach Service Center

Client Contact:
Lucas PowellCompany:
Froehling & RobertsonAddress:
3015 Dumbarton RoadCity:
RichmondState, Zip:
VA, 23228Phone:
804-264-2701Email: Email Results only to hfeichtkoenig@micron.com
lpowell@fandor.com and rreddy@micron.comProject Name:
VA Water 1633Site:
MicronSampler:
George Spain/Reeper

Phone:

Lab PM:
Eppley, KendallE-Mail:
kendall.eppley@et.eurofins.com

Carrier Tracking No(s):

State of Origin: VA

COC No:
410-187355-33337.1Page:
Page 1 of 1

Job #:

PWSID:

Analysis Requested

Due Date Requested: 3-26-2026

TAT Requested (days):

Standard

Compliance Project: ☒ Yes ☐ NoPO #:
59D0066-00001WO #:
Project #59D-0066Project #:
41012717

SSOW#:

Field Filtered Sample (Yes or No)

Perform MS/MSD (Yes or No)

1633_Final - 1633 40 compounds

Total Number of containers

Preservation Codes:
N - None

Other:

Special Instructions/Note:

Sample Identification

Sample Date

Sample Time

Sample Type
(C=comp, G=grab)Matrix
(W=water, S=solid, O=waste/oil, BT=Tissue, A=Air, DW=Drinking Water)

Preservation Code:

X

N

Field Blank

3-2-26

0915

G

Water

X

Equipment Blank

3-2-26

0918

G

Water

X

SP-1

3-2-26

0921

G

Water

X

~~Water~~
GTS2 Email Results only
2 to:
2 hfeichtkoenig@micron.com
rreddy@micron.com

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:

Date:

Time:

Method of Shipment:

Relinquished by: George Spain

Date/Time: 3-2-2026 1240

Company: F&R

Received by:

Relinquished by:

Date/Time:

Company:

Received by:

Relinquished by:

Date/Time:

Company:

Received by:

Date/Time:

Company:

3/3/26 0755

Custody Seals Intact:
☒ Yes ☐ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

R: 1.3 C: 1.3

Login Sample Receipt Checklist

Client: Froehling & Robertson

Job Number: 410-267923-1

Login Number: 267923

List Number: 1

Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	