



ANALYTICAL REPORT

PREPARED FOR

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5900 Mac Arthur Boulevard
Washington, Washington, DC 20016

Generated 11/28/2023 11:24:37 AM Revision 1

JOB DESCRIPTION

USACE-WAD

JOB NUMBER

380-68765-1

Eurofins Eaton Analytical Pomona

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.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW, Water matrices)

Authorization



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11/28/2023 11:24:37 AM
Revision 1

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Definitions/Glossary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Qualifiers

LCMS

Qualifier	Qualifier Description
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.
α	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: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Job ID: 380-68765-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative
380-68765-1

REVISION

The report being provided is a revision of the original report sent on 11/21/2023. The report (revision 1) is being revised due to Custody document not originally scanned to merge with report..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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 may be 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.

Receipt

The samples were received on 10/26/2023 10:30 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 1.4°C

PFAS

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

Revision

The report being provided is a revision of the original report sent on 11/21/2023. The report (revision 1) is being revised due to: Custody document not originally scanned to merge with report..

Detection Summary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: 18

Lab Sample ID: 380-68765-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorobutanoic acid (PFBA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.9		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	3.9		2.0	ng/L	1		533	Total/NA

Client Sample ID: JS

Lab Sample ID: 380-68765-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.7		2.0	ng/L	1		533	Total/NA
Perfluorobutanoic acid (PFBA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	3.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	4.0		2.0	ng/L	1		533	Total/NA

Client Sample ID: Field Reagent Blank - 18

Lab Sample ID: 380-68765-3

No Detections.

Client Sample ID: Field Reagent Blank - JS

Lab Sample ID: 380-68765-4

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: 18

Lab Sample ID: 380-68765-1

Date Collected: 10/25/23 07:45

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorobutanesulfonic acid (PFBS)	2.4		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorobutanoic acid (PFBA)	2.1		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorohexanoic acid (PFHxA)	2.9		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoropentanoic acid (PFPeA)	3.9		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:46	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	108		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C2-4:2-FTS	112		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C2-6:2-FTS	109		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C2-8:2-FTS	127		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C3 HFPO-DA	97		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C3 PFBS	101		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C3 PFHxS	104		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C4 PFBA	109		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C4 PFHpA	102		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C5 PFHxA	100		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C5 PFPeA	139		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C6 PFDA	105		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C7 PFUnA	100		50 - 200	11/15/23 15:09	11/17/23 19:46	1

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Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: 18

Lab Sample ID: 380-68765-1

Date Collected: 10/25/23 07:45

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	103		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C8 PFOS	108		50 - 200	11/15/23 15:09	11/17/23 19:46	1
13C9 PFNA	111		50 - 200	11/15/23 15:09	11/17/23 19:46	1

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:36	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:36	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	101		70 - 130	11/02/23 09:52	11/07/23 15:36	1
13C2 PFHxA	115		70 - 130	11/02/23 09:52	11/07/23 15:36	1
13C3-GenX	114		70 - 130	11/02/23 09:52	11/07/23 15:36	1
d5-NEtFOSAA	85		70 - 130	11/02/23 09:52	11/07/23 15:36	1

Client Sample ID: JS

Lab Sample ID: 380-68765-2

Date Collected: 10/25/23 11:00

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Nonafuoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorobutanesulfonic acid (PFBS)	2.7		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorobutanoic acid (PFBA)	2.3		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1

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Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: JS

Lab Sample ID: 380-68765-2

Date Collected: 10/25/23 11:00

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorohexanoic acid (PFHxA)	3.1		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluoropentanoic acid (PFPeA)	4.0		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 19:55	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	109		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C2-4:2-FTS	101		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C2-6:2-FTS	102		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C2-8:2-FTS	132		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C3 HFPO-DA	99		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C3 PFBS	99		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C3 PFHxS	100		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C4 PFBA	108		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C4 PFHpA	96		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C5 PFHxA	102		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C5 PFPeA	156		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C6 PFDA	105		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C7 PFUnA	105		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C8 PFOA	101		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C8 PFOS	111		50 - 200	11/15/23 15:09	11/17/23 19:55	1
13C9 PFNA	114		50 - 200	11/15/23 15:09	11/17/23 19:55	1

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMEFOSAA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:45	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:45	1
Perfluorotridecanoic acid (PFTTrDA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 15:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	94		70 - 130	11/02/23 09:52	11/07/23 15:45	1
13C2 PFHxA	104		70 - 130	11/02/23 09:52	11/07/23 15:45	1
13C3-GenX	107		70 - 130	11/02/23 09:52	11/07/23 15:45	1
d5-NETFOSAA	83		70 - 130	11/02/23 09:52	11/07/23 15:45	1

Client Sample ID: Field Reagent Blank - 18

Lab Sample ID: 380-68765-3

Date Collected: 10/25/23 07:45

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1

Eurofins Eaton Analytical Pomona

Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: Field Reagent Blank - 18

Lab Sample ID: 380-68765-3

Date Collected: 10/25/23 07:45

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorobutanoic acid (PFBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	105		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C2-4:2-FTS	119		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C2-6:2-FTS	111		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C2-8:2-FTS	117		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C3 HFPO-DA	105		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C3 PFBS	101		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C3 PFHxS	107		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C4 PFBA	110		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C4 PFHpA	113		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C5 PFHxA	108		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C5 PFPeA	116		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C6 PFDA	105		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C7 PFUnA	104		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C8 PFOA	111		50 - 200	11/15/23 15:09	11/17/23 20:05	1
13C8 PFOS	107		50 - 200	11/15/23 15:09	11/17/23 20:05	1

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Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: Field Reagent Blank - 18

Lab Sample ID: 380-68765-3

Date Collected: 10/25/23 07:45

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C9 PFNA	111		50 - 200	11/15/23 15:09	11/17/23 20:05	1

Client Sample ID: Field Reagent Blank - JS

Lab Sample ID: 380-68765-4

Date Collected: 10/25/23 11:00

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorobutanoic acid (PFBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 20:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	114		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C2-4:2-FTS	112		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C2-6:2-FTS	98		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C2-8:2-FTS	111		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C3 HFPO-DA	112		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C3 PFBS	103		50 - 200	11/15/23 15:09	11/17/23 20:14	1

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Client Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: Field Reagent Blank - JS

Lab Sample ID: 380-68765-4

Date Collected: 10/25/23 11:00

Matrix: Drinking Water

Date Received: 10/26/23 10:30

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 PFHxS	101		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C4 PFBA	110		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C4 PFHpA	108		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C5 PFHxA	114		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C5 PFPeA	115		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C6 PFDA	109		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C7 PFUnA	111		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C8 PFOA	110		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C8 PFOS	108		50 - 200	11/15/23 15:09	11/17/23 20:14	1
13C9 PFNA	118		50 - 200	11/15/23 15:09	11/17/23 20:14	1

Surrogate Summary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDA	PFHxA	GenX	d5NEFOS
		(70-130)	(70-130)	(70-130)	(70-130)
380-68651-Z-1-A MS	Matrix Spike	105	103	107	99
380-68765-1	18	101	115	114	85
380-68765-2	JS	94	104	107	83
380-68651-AB-1-A MSD	Matrix Spike Duplicate	102	106	102	94
LCS 380-62158/25-A	Lab Control Sample	105	106	106	97
LCSD 380-62158/26-A	Lab Control Sample Dup	101	109	107	96
MBL 380-62158/23-A	Method Blank	103	106	101	100
MRL 380-62158/24-A	Lab Control Sample	102	105	103	102

Surrogate Legend

PFDA = 13C2 PFDA
PFHxA = 13C2 PFHxA
GenX = 13C3-GenX
d5NEFOS = d5-NEtFOSAA



Isotope Dilution Summary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Matrix: Drinking Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFD _o A (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)	HFPODA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	PFBA (50-200)
380-68765-1	18	108	112	109	127	97	101	104	109
380-68765-2	JS	109	101	102	132	99	99	100	108
380-68765-3	Field Reagent Blank - 18	105	119	111	117	105	101	107	110
380-68765-4	Field Reagent Blank - JS	114	112	98	111	112	103	101	110
380-69292-B-1-A MS	Matrix Spike	100	117	105	128	74	105	103	78
380-69292-C-1-A MSD	Matrix Spike Duplicate	102	109	105	127	79	104	106	82
LCS 380-63889/23-A	Lab Control Sample	103	111	108	114	93	107	103	104
LCSD 380-63889/24-A	Lab Control Sample Dup	110	109	102	105	100	101	103	104
MBL 380-63889/21-A	Method Blank	96	116	102	102	92	96	96	102
MRL 380-63889/22-A	Lab Control Sample	108	117	111	113	101	105	106	113

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C4PFHA (50-200)	13C5PHA (50-200)	PFP _e A (50-200)	C6PFDA (50-200)	13C7PUA (50-200)	C8PFOA (50-200)	C8PFOS (50-200)	C9PFNA (50-200)
380-68765-1	18	102	100	139	105	100	103	108	111
380-68765-2	JS	96	102	156	105	105	101	111	114
380-68765-3	Field Reagent Blank - 18	113	108	116	105	104	111	107	111
380-68765-4	Field Reagent Blank - JS	108	114	115	109	111	110	108	118
380-69292-B-1-A MS	Matrix Spike	79	81	83	90	92	84	106	88
380-69292-C-1-A MSD	Matrix Spike Duplicate	89	89	86	98	98	88	110	96
LCS 380-63889/23-A	Lab Control Sample	96	103	108	102	101	98	106	105
LCSD 380-63889/24-A	Lab Control Sample Dup	102	105	114	102	103	106	107	112
MBL 380-63889/21-A	Method Blank	97	100	105	95	96	100	98	102
MRL 380-63889/22-A	Lab Control Sample	109	112	122	104	102	109	111	118

Surrogate Legend

- PFD_oA = 13C2 PFD_oA
- 42FTS = 13C2-4:2-FTS
- 62FTS = 13C2-6:2-FTS
- 82FTS = 13C2-8:2-FTS
- HFPODA = 13C3 HFPO-DA
- C3PFBS = 13C3 PFBS
- C3PFHS = 13C3 PFH_xS
- PFBA = 13C4 PFBA
- C4PFHA = 13C4 PFH_pA
- 13C5PHA = 13C5 PFH_xA
- PFP_eA = 13C5 PFP_eA
- C6PFDA = 13C6 PFDA
- 13C7PUA = 13C7 PFUnA
- C8PFOA = 13C8 PFOA
- C8PFOS = 13C8 PFOS
- C9PFNA = 13C9 PFNA

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Lab Sample ID: MBL 380-63889/21-A
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63889

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorobutanoic acid (PFBA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorodecanoic acid (PFDA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoroheptanoic acid (PFHpA)	0.434	J	2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorononanoic acid (PFNA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluorooctanoic acid (PFOA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoropentanoic acid (PFPeA)	0.470	J	2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	ng/L		11/15/23 15:09	11/17/23 18:30	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	96		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C2-4:2-FTS	116		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C2-6:2-FTS	102		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C2-8:2-FTS	102		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C3 HFPO-DA	92		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C3 PFBS	96		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C3 PFHxS	96		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C4 PFBA	102		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C4 PFHpA	97		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C5 PFHxA	100		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C5 PFPeA	105		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C6 PFDA	95		50 - 200	11/15/23 15:09	11/17/23 18:30	1

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QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 380-63889/21-A
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 63889

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C7 PFUnA	96		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C8 PFOA	100		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C8 PFOS	98		50 - 200	11/15/23 15:09	11/17/23 18:30	1
13C9 PFNA	102		50 - 200	11/15/23 15:09	11/17/23 18:30	1

Lab Sample ID: LCS 380-63889/23-A
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63889

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	47.5		ng/L		79	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	55.9		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	56.9		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	55.1		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	58.1		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	60.1	51.7		ng/L		86	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	55.2		ng/L		92	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	49.2		ng/L		82	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.1	51.7		ng/L		86	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	53.2		ng/L		88	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	54.2		ng/L		90	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	54.4		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	55.6		ng/L		92	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	52.1		ng/L		87	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	57.3		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	55.6		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	56.0		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	54.1		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	54.0		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	60.1	56.4		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	55.2		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	57.2		ng/L		95	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.1	54.3		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	56.4		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	55.2		ng/L		92	70 - 130

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QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C2 PFDoA	103		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	108		50 - 200
13C2-8:2-FTS	114		50 - 200
13C3 HFPO-DA	93		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	103		50 - 200
13C4 PFBA	104		50 - 200
13C4 PFHpA	96		50 - 200
13C5 PFHxA	103		50 - 200
13C5 PFPeA	108		50 - 200
13C6 PFDA	102		50 - 200
13C7 PFUnA	101		50 - 200
13C8 PFOA	98		50 - 200
13C8 PFOS	106		50 - 200
13C9 PFNA	105		50 - 200

Lab Sample ID: LCSD 380-63889/24-A
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63889

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	48.7		ng/L		81	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	62.0		ng/L		103	70 - 130	10	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	59.7		ng/L		99	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	59.5		ng/L		99	70 - 130	8	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	60.8		ng/L		101	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	60.1	54.0		ng/L		90	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	57.4		ng/L		95	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	53.1		ng/L		88	70 - 130	8	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.1	55.8		ng/L		93	70 - 130	8	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	56.6		ng/L		94	70 - 130	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	56.2		ng/L		93	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	60.1	57.8		ng/L		96	70 - 130	6	30
Perfluorobutanoic acid (PFBA)	60.1	59.0		ng/L		98	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	60.1	56.2		ng/L		93	70 - 130	8	30
Perfluorododecanoic acid (PFDoA)	60.1	58.8		ng/L		98	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	60.1	56.2		ng/L		93	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	60.1	57.8		ng/L		96	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	60.1	54.8		ng/L		91	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LCSD 380-63889/24-A
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 63889

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	60.1	59.3		ng/L		99	70 - 130	9	30
Perfluorononanoic acid (PFNA)	60.1	57.4		ng/L		96	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	60.1	56.1		ng/L		93	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	60.1	57.6		ng/L		96	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	60.1	59.3		ng/L		99	70 - 130	9	30
Perfluoropentanoic acid (PFPeA)	60.1	56.8		ng/L		95	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	60.1	60.6		ng/L		101	70 - 130	9	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C2 PFDoA	110		50 - 200
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	105		50 - 200
13C3 HFPO-DA	100		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	103		50 - 200
13C4 PFBA	104		50 - 200
13C4 PFHpA	102		50 - 200
13C5 PFHxA	105		50 - 200
13C5 PFPeA	114		50 - 200
13C6 PFDA	102		50 - 200
13C7 PFUnA	103		50 - 200
13C8 PFOA	106		50 - 200
13C8 PFOS	107		50 - 200
13C9 PFNA	112		50 - 200

Lab Sample ID: MRL 380-63889/22-A
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63889

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.56	J	ng/L		78	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.00		ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	1.93	J	ng/L		96	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	1.96	J	ng/L		98	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.96	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	2.00	1.77	J	ng/L		88	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.87	J	ng/L		93	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.82	J	ng/L		91	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MRL 380-63889/22-A
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 63889

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.75	J	ng/L		87	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.85	J	ng/L		93	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.80	J	ng/L		90	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.80	J	ng/L		90	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.80	J	ng/L		90	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.90	J	ng/L		95	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.84	J	ng/L		92	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.96	J	ng/L		98	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C2 PFDoA	108		50 - 200
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	111		50 - 200
13C2-8:2-FTS	113		50 - 200
13C3 HFPO-DA	101		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	106		50 - 200
13C4 PFBA	113		50 - 200
13C4 PFHpA	109		50 - 200
13C5 PFHxA	112		50 - 200
13C5 PFPeA	122		50 - 200
13C6 PFDA	104		50 - 200
13C7 PFUnA	102		50 - 200
13C8 PFOA	109		50 - 200
13C8 PFOS	111		50 - 200
13C9 PFNA	118		50 - 200

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-69292-B-1-A MS
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63889

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		60.0	48.0		ng/L		80	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		60.0	53.9		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		60.0	54.5		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	4.3		60.0	61.2		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	*5-	60.0	52.5		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		60.0	53.7		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND	*5-	60.0	54.7		ng/L		91	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	*5-	60.0	43.7		ng/L		73	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		60.0	56.5		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND	*5-	60.0	50.4		ng/L		84	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND	*5-	60.0	55.4		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	ND		60.0	55.5		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	ND	*5-	60.0	57.8		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	ND		60.0	57.0		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	ND		60.0	55.5		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	ND		60.0	56.7		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	ND	*5-	60.0	57.4		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	ND		60.0	54.1		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	ND	*5-	60.0	54.9		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	ND		60.0	56.0		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	ND		60.0	57.7		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	ND		60.0	56.0		ng/L		92	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	ND		60.0	55.8		ng/L		93	70 - 130
Perfluoropentanoic acid (PFPeA)	ND	*5-	60.0	58.0		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		60.0	57.4		ng/L		96	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C2 PFDoA	100		50 - 200
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	128		50 - 200
13C3 HFPO-DA	74		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	103		50 - 200

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-69292-B-1-A MS
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 63889

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C4 PFBA	78		50 - 200
13C4 PFHpA	79		50 - 200
13C5 PFHxA	81		50 - 200
13C5 PFPeA	83		50 - 200
13C6 PFDA	90		50 - 200
13C7 PFUnA	92		50 - 200
13C8 PFOA	84		50 - 200
13C8 PFOS	106		50 - 200
13C9 PFNA	88		50 - 200

Lab Sample ID: 380-69292-C-1-A MSD
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63889

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		60.0	47.1		ng/L		79	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		60.0	56.8		ng/L		95	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		60.0	56.2		ng/L		94	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	4.3		60.0	61.7		ng/L		96	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	*5-	60.0	49.1		ng/L		82	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND		60.0	51.2		ng/L		85	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND	*5-	60.0	53.0		ng/L		88	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	*5-	60.0	45.5		ng/L		76	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	ND		60.0	54.3		ng/L		90	70 - 130	4	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND	*5-	60.0	50.0		ng/L		83	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND	*5-	60.0	53.7		ng/L		90	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	ND		60.0	54.9		ng/L		92	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	ND	*5-	60.0	56.9		ng/L		95	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	ND		60.0	53.1		ng/L		89	70 - 130	7	30
Perfluorododecanoic acid (PFDoA)	ND		60.0	56.0		ng/L		93	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	ND		60.0	54.1		ng/L		90	70 - 130	5	30
Perfluoroheptanoic acid (PFHpA)	ND	*5-	60.0	57.3		ng/L		94	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	ND		60.0	54.6		ng/L		91	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	ND	*5-	60.0	55.4		ng/L		92	70 - 130	1	30
Perfluorononanoic acid (PFNA)	ND		60.0	57.2		ng/L		95	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	ND		60.0	55.2		ng/L		91	70 - 130	5	30

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QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-69292-C-1-A MSD
Matrix: Drinking Water
Analysis Batch: 64280

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 63889

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorooctanoic acid (PFOA)	ND		60.0	57.7		ng/L		94	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	ND		60.0	55.1		ng/L		92	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	ND	*5-	60.0	54.5		ng/L		89	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	ND		60.0	55.7		ng/L		93	70 - 130	3	30
Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits								
13C2 PFDoA	102		50 - 200								
13C2-4:2-FTS	109		50 - 200								
13C2-6:2-FTS	105		50 - 200								
13C2-8:2-FTS	127		50 - 200								
13C3 HFPO-DA	79		50 - 200								
13C3 PFBS	104		50 - 200								
13C3 PFHxS	106		50 - 200								
13C4 PFBA	82		50 - 200								
13C4 PFHpA	89		50 - 200								
13C5 PFHxA	89		50 - 200								
13C5 PFPeA	86		50 - 200								
13C6 PFDA	98		50 - 200								
13C7 PFUnA	98		50 - 200								
13C8 PFOA	88		50 - 200								
13C8 PFOS	110		50 - 200								
13C9 PFNA	96		50 - 200								

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MBL 380-62158/23-A
Matrix: Drinking Water
Analysis Batch: 62810

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62158

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 13:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 13:41	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 13:41	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0	ng/L		11/02/23 09:52	11/07/23 13:41	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C2 PFDA	103		70 - 130			11/02/23 09:52	11/07/23 13:41	1
13C2 PFHxA	106		70 - 130			11/02/23 09:52	11/07/23 13:41	1
13C3-GenX	101		70 - 130			11/02/23 09:52	11/07/23 13:41	1
d5-NEtFOSAA	100		70 - 130			11/02/23 09:52	11/07/23 13:41	1

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: LCS 380-62158/25-A
Matrix: Drinking Water
Analysis Batch: 62810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62158

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	27.0		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	27.1		ng/L		108	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	29.3		ng/L		117	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	29.4		ng/L		117	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
13C2 PFDA	105		70 - 130
13C2 PFHxA	106		70 - 130
13C3-GenX	106		70 - 130
d5-NEtFOSAA	97		70 - 130

Lab Sample ID: LCSD 380-62158/26-A
Matrix: Drinking Water
Analysis Batch: 62810

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 62158

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	26.9		ng/L		108	70 - 130	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	27.9		ng/L		112	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	25.0	28.8		ng/L		115	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	25.0	27.8		ng/L		111	70 - 130	6	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
13C2 PFDA	101		70 - 130
13C2 PFHxA	109		70 - 130
13C3-GenX	107		70 - 130
d5-NEtFOSAA	96		70 - 130

Lab Sample ID: MRL 380-62158/24-A
Matrix: Drinking Water
Analysis Batch: 62810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62158

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.84		ng/L		142	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.61		ng/L		130	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.30		ng/L		115	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.21		ng/L		110	50 - 150

QC Sample Results

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: MRL 380-62158/24-A
Matrix: Drinking Water
Analysis Batch: 62810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62158

<i>Surrogate</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C2 PFDA	102		70 - 130
13C2 PFHxA	105		70 - 130
13C3-GenX	103		70 - 130
d5-NEtFOSAA	102		70 - 130

Lab Sample ID: 380-68651-Z-1-A MS
Matrix: Drinking Water
Analysis Batch: 62810

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 62158

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		25.1	27.7		ng/L		110	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		25.1	29.1		ng/L		116	70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		25.1	28.8		ng/L		115	70 - 130
Perfluorotridecanoic acid (PFTrDA)	ND		25.1	30.2		ng/L		120	70 - 130

<i>Surrogate</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
13C2 PFDA	105		70 - 130
13C2 PFHxA	103		70 - 130
13C3-GenX	107		70 - 130
d5-NEtFOSAA	99		70 - 130

Lab Sample ID: 380-68651-AB-1-A MSD
Matrix: Drinking Water
Analysis Batch: 62810

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 62158

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		25.1	26.4		ng/L		105	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		25.1	27.8		ng/L		111	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	ND		25.1	27.6		ng/L		110	70 - 130	4	30
Perfluorotridecanoic acid (PFTrDA)	ND		25.1	27.6		ng/L		110	70 - 130	9	30

<i>Surrogate</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
13C2 PFDA	102		70 - 130
13C2 PFHxA	106		70 - 130
13C3-GenX	102		70 - 130
d5-NEtFOSAA	94		70 - 130

QC Association Summary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

LCMS

Prep Batch: 62158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68765-1	18	Total/NA	Drinking Water	537.1 DW	
380-68765-2	JS	Total/NA	Drinking Water	537.1 DW	
MBL 380-62158/23-A	Method Blank	Total/NA	Drinking Water	537.1 DW	
LCS 380-62158/25-A	Lab Control Sample	Total/NA	Drinking Water	537.1 DW	
LCSD 380-62158/26-A	Lab Control Sample Dup	Total/NA	Drinking Water	537.1 DW	
MRL 380-62158/24-A	Lab Control Sample	Total/NA	Drinking Water	537.1 DW	
380-68651-Z-1-A MS	Matrix Spike	Total/NA	Drinking Water	537.1 DW	
380-68651-AB-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 62810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68765-1	18	Total/NA	Drinking Water	537.1	62158
380-68765-2	JS	Total/NA	Drinking Water	537.1	62158
MBL 380-62158/23-A	Method Blank	Total/NA	Drinking Water	537.1	62158
LCS 380-62158/25-A	Lab Control Sample	Total/NA	Drinking Water	537.1	62158
LCSD 380-62158/26-A	Lab Control Sample Dup	Total/NA	Drinking Water	537.1	62158
MRL 380-62158/24-A	Lab Control Sample	Total/NA	Drinking Water	537.1	62158
380-68651-Z-1-A MS	Matrix Spike	Total/NA	Drinking Water	537.1	62158
380-68651-AB-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	537.1	62158

Prep Batch: 63889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68765-1	18	Total/NA	Drinking Water	533	
380-68765-2	JS	Total/NA	Drinking Water	533	
380-68765-3	Field Reagent Blank - 18	Total/NA	Drinking Water	533	
380-68765-4	Field Reagent Blank - JS	Total/NA	Drinking Water	533	
MBL 380-63889/21-A	Method Blank	Total/NA	Drinking Water	533	
LCS 380-63889/23-A	Lab Control Sample	Total/NA	Drinking Water	533	
LCSD 380-63889/24-A	Lab Control Sample Dup	Total/NA	Drinking Water	533	
MRL 380-63889/22-A	Lab Control Sample	Total/NA	Drinking Water	533	
380-69292-B-1-A MS	Matrix Spike	Total/NA	Drinking Water	533	
380-69292-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	533	

Analysis Batch: 64280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-68765-1	18	Total/NA	Drinking Water	533	63889
380-68765-2	JS	Total/NA	Drinking Water	533	63889
380-68765-3	Field Reagent Blank - 18	Total/NA	Drinking Water	533	63889
380-68765-4	Field Reagent Blank - JS	Total/NA	Drinking Water	533	63889
MBL 380-63889/21-A	Method Blank	Total/NA	Drinking Water	533	63889
LCS 380-63889/23-A	Lab Control Sample	Total/NA	Drinking Water	533	63889
LCSD 380-63889/24-A	Lab Control Sample Dup	Total/NA	Drinking Water	533	63889
MRL 380-63889/22-A	Lab Control Sample	Total/NA	Drinking Water	533	63889
380-69292-B-1-A MS	Matrix Spike	Total/NA	Drinking Water	533	63889
380-69292-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Drinking Water	533	63889

Lab Chronicle

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Client Sample ID: 18

Date Collected: 10/25/23 07:45

Date Received: 10/26/23 10:30

Lab Sample ID: 380-68765-1

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63889	T2EP	EA POM	11/15/23 15:09
Total/NA	Analysis	533		1	64280	UKDT	EA POM	11/17/23 19:46
Total/NA	Prep	537.1 DW			62158	U7RS	EA POM	11/02/23 09:52
Total/NA	Analysis	537.1		1	62810	UKDT	EA POM	11/07/23 15:36

Client Sample ID: JS

Date Collected: 10/25/23 11:00

Date Received: 10/26/23 10:30

Lab Sample ID: 380-68765-2

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63889	T2EP	EA POM	11/15/23 15:09
Total/NA	Analysis	533		1	64280	UKDT	EA POM	11/17/23 19:55
Total/NA	Prep	537.1 DW			62158	U7RS	EA POM	11/02/23 09:52
Total/NA	Analysis	537.1		1	62810	UKDT	EA POM	11/07/23 15:45

Client Sample ID: Field Reagent Blank - 18

Date Collected: 10/25/23 07:45

Date Received: 10/26/23 10:30

Lab Sample ID: 380-68765-3

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63889	T2EP	EA POM	11/15/23 15:09
Total/NA	Analysis	533		1	64280	UKDT	EA POM	11/17/23 20:05

Client Sample ID: Field Reagent Blank - JS

Date Collected: 10/25/23 11:00

Date Received: 10/26/23 10:30

Lab Sample ID: 380-68765-4

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			63889	T2EP	EA POM	11/15/23 15:09
Total/NA	Analysis	533		1	64280	UKDT	EA POM	11/17/23 20:14

Laboratory References:

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Laboratory: Eurofins Eaton Analytical Pomona

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	224	03-31-24
<p>The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.</p>			
Analysis Method	Prep Method	Matrix	Analyte
533	533	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
533	533	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Drinking Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluorodecanoic acid (PFDA)
533	533	Drinking Water	Perfluorododecanoic acid (PFDoA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoroheptanoic acid (PFHpA)
533	533	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
533	533	Drinking Water	Perfluorohexanoic acid (PFHxA)
533	533	Drinking Water	Perfluorononanoic acid (PFNA)
533	533	Drinking Water	Perfluorooctanesulfonic acid (PFOS)
533	533	Drinking Water	Perfluorooctanoic acid (PFOA)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Drinking Water	Perfluoroundecanoic acid (PFUnA)
537.1	537.1 DW	Drinking Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537.1	537.1 DW	Drinking Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1	537.1 DW	Drinking Water	Perfluorotetradecanoic acid (PFTA)
537.1	537.1 DW	Drinking Water	Perfluorotridecanoic acid (PFTTrDA)
Utah	NELAP	CA00006	02-29-24

Method Summary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100



Sample Summary

Client: USACE WAD
Project/Site: USACE-WAD

Job ID: 380-68765-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-68765-1	18	Drinking Water	10/25/23 07:45	10/26/23 10:30
380-68765-2	JS	Drinking Water	10/25/23 11:00	10/26/23 10:30
380-68765-3	Field Reagent Blank - 18	Drinking Water	10/25/23 07:45	10/26/23 10:30
380-68765-4	Field Reagent Blank - JS	Drinking Water	10/25/23 11:00	10/26/23 10:30

- 1
- 2
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- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Monrovia, CA (Suite 100)
 750 Royal Oaks Drive Suite 100
 Monrovia, CA 91016
 Phone (626) 386-1100

Chain of Custody Record



Client Information		Lab PM French, Thomas D	Carrier Tracking No(s) 380-21598-6090 1
Client Contact: Robert Hoffa		E-Mail Tom.French@eurofins.com	Page Page 1 of 1
Company USACE WAD		Phone 202-345-5928	Job #
Address: 5900 Mac Arthur Boulevard		Analysis Requested	
City Washington		Total Number of Containers	
State, Zip DC, 20016		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Phone 202-567-9139(Tel)		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Email robert.p.hoffa@usace.army.mil		Special Instructions/Note:	
Project Name USACE-WAD		380-68765 COC	
Site Washington, DC		QR Code	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, IRT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	537.1 DW PREC - EPA 537.1 Short List	53 - All Analytes	Y	N	Y
18	10/25/23	0745	G	Drinking Water	X	X	X			
JS	10/25/23	1100	G	Drinking Water	X	X	X			
Field Reagent Blank - 18	10/25/23	0745	G	Drinking Water	X	X	X			
Field Reagent Blank - JS	10/25/23	1100	G	Drinking Water	X	X	X			

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Radiological
<input type="checkbox"/> Deliverable Requested I, II, III, IV, Other (specify)	<input type="checkbox"/> Poison B	<input type="checkbox"/> Unknown	<input type="checkbox"/> Archive For
Empty Kit Relinquished by		Method of Shipment: Fed X-700014974274	
Relinquished by: R. Hoffa		Date/Time: 10/26/23 10:30	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks (752A) 16 02-14 ice-frozen	



Bottle Order Information

Bottle Order: USACE-WAD PFAS Quarterly
 Bottle Order #: 6090
 Request From Client: 10/2/2023
 Date Order Posted: 12/19/2022 9:48:43AM
 Order Status: Ready To Process
 Prepared By: Thomas French
Deliver By Date: 10/9/2023 11:59:00PM
 Lab Project Number: 38002019
 PWSID:

Order Completion Information

Creator: Thomas French
 Filled by:
 Sent Date:
 Sent Via:
 Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
2	3	6	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - EPA 537.1 Short List	Drinking W	Normal		
2	3	6	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Drinking W	Normal		
2	1	2	Plastic 250ml - Reagent Water	None	537.1_DW_PREC - EPA 537.1 Short List	Drinking W	Field Reagent E		
2	1	2	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - EPA 537.1 Short List	Drinking W	Field Reagent E		
2	1	2	Plastic 250ml - Reagent Water	None	533 - All Analytes	Drinking W	Field Reagent E		
2	1	2	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Drinking W	Field Reagent E		

Total Bottle Summary

Bottle Type Description	Preservative	Bottle Count
Plastic 250ml - Reagent Water	None	4
Plastic 250ml - Trizma	Trizma	8
Plastic 250ml - Ammonium Acetate	Ammonium Acetate	8
Total Bottles:		20

Notes to Field Staff:



Scan QR code for field sampler instructions

Health and Safety Notes:

Preservative Comment

Ammonium Acetate

Trizma

Caution! May cause eye, skin, and respiratory tract irritation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.

CAUTION! May cause eye, skin, and respiratory tract irritation

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.



Login Sample Receipt Checklist

Client: USACE WAD

Job Number: 380-68765-1

Login Number: 68765

List Number: 1

Creator: Edrosa, Rey

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
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	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	