

Environment Testing America

ANALYTICAL REPORT

Eurofins Eaton South Bend 110 S Hill Street South Bend, IN 46617 Tel: (574)233-4777

Laboratory Job ID: 810-11965-1

Client Project/Site: Ann Arbor L402, RD200

For:

Ann Arbor Water Treatment Plant 919 Sunset Road Ann Arbor, Michigan 48103

Attn: Jim Bahen

Jaclyn Gatchell

Authorized for release by: 2/7/2022 5:26:37 PM

Jaclyn Gatchell, Project Manager (574)233-4777

jaclyn.gatchell@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Glossary

<u> </u>	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	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)

NC Not Calculated

MPN

MQL

ND Not Detected at the reporting limit (or MDL or EDL if shown)

Negative / Absent NEG POS Positive / Present

PQL **Practical Quantitation Limit**

PRES Presumptive QC **Quality Control**

Relative Error Ratio (Radiochemistry) RER

Most Probable Number

Method Quantitation Limit

Reporting Limit or Requested Limit (Radiochemistry) RL

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

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Case Narrative

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Job ID: 810-11965-1

Laboratory: Eurofins Eaton South Bend

Narrative

Job Narrative 810-11965-1

Comments

No additional comments.

Receipt

The samples were received on 1/13/2022 10:15 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 was 0.4° C.

LCMS

Method L402: The matrix spike (LMS) recovery for preparation batch 810-11198 and analytical batch 810-11341 was outside control limits for Perfluorooctanoic acid (PFOA) (196%, 50-150% limits) and Perfluorooctanesulfonic acid (PFOS) (192%, 50-150% limits). They were detected in the parent sample below the MRL but high enough to bias the LMS. Results are not affected. The associated laboratory control sample (LLCS) recovery was within acceptance limits.

Method L402: The matrix spike (LMS) for preparation batch 810-11198 and analytical batch 810-11341 did not recover for N-ethylperfluorooctane sulfonamide (NEtFOSA) due to matrix interference. The IDA also recovered poorly, resulting in an apparent recovery for NEtFOSA of 16% (50-150% limits), but there was no NEtFOSA peak present. Results for NEtFOSA are low biased in the parent sample. The associated laboratory control sample (LLCS) recovery was within acceptance limits.

Method L402: The matrix spike (LMS) recovery for preparation batch 810-11198 and analytical batch 810-11341 was outside control limits for N-methylperfluorooctane sulfonamide (NMeFOSA) (297%, 50-150% limits) and Perfluorodecanesulfonic acid (PFDS) (180%, 50-150% limits). They were not detected in the parent sample and hits would be high biased. Results are not affected. The associated laboratory control sample (LLCS) recovery was within acceptance limits.

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

Organic Prep

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

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Detection Summary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Lab Sample ID: 810-11965-1

Client Sample ID: Al34896 Final Effluent PWSID Number: MI0000220

Analyte	Result Qualifier	RL	Unit	Dil Fac D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.3	1.8	ng/L		L402	Total/NA
Perfluoropentanoic acid (PFPeA)	9.1	1.8	ng/L	1	L402	Total/NA
Perfluorohexanoic acid (PFHxA)	12	1.8	ng/L	1	L402	Total/NA
Perfluorooctanoic acid (PFOA)	2.7	1.8	ng/L	1	L402	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.9	1.8	ng/L	1	L402	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.7	1.8	ng/L	1	L402	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.4	1.8	na/L	1	L402	Total/NA

Client Sample ID: Al34897 Raw Influent PWSID Number: MI0000220

Lab Sample ID: 810-11965-2

Analyte	Result Qualifier	RL	Unit	Dil Fac	D Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.3	1.8	ng/L		L402	Total/NA
Perfluoropentanoic acid (PFPeA)	6.3	1.8	ng/L	1	L402	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	2.1	1.8	ng/L	1	L402	Total/NA
Perfluorohexanoic acid (PFHxA)	6.3	1.8	ng/L	1	L402	Total/NA
Perfluorooctanoic acid (PFOA)	2.2	1.8	ng/L	1	L402	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3	1.8	ng/L	1	L402	Total/NA
Perfluorobutanoic acid (PFBA)	6.3	4.5	ng/L	1	L402	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.1	1.8	ng/L	1	L402	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.8	1.8	ng/L	1	L402	Total/NA

Client Sample ID: Al34898 Biosolids

Lab Sample ID: 810-11965-3

PWSID Number: MI0000220

No Detections.

This Detection Summary does not include radiochemical test results.

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Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Lab Sample ID: 810-11965-1

Matrix: Water

Job ID: 810-11965-1

PWSID Number: MI0000220

Client Sample	D: Al34896	Final Effluent
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Date Collected: 01/12/22 08:13 Date Received: 01/13/22 10:15

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4.6		4.6	ng/L		01/19/22 07:07		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<4.6		4.6	ng/L		01/19/22 07:07	01/21/22 01:28	,
Perfluorooctanesulfonic acid (PFOS)	2.3		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	,
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
N-methylperfluorooctanesulfonamidoa cetic acid	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	,
Perfluoropentanoic acid (PFPeA)	9.1		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	,
N-ethylperfluorooctanesulfonamidoac etic acid	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	,
Perfluorohexanoic acid (PFHxA)	12		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	•
Perfluorooctanoic acid (PFOA)	2.7		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorodecanoic acid (PFDA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorohexanesulfonic acid (PFHxS)	1.9		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorobutanoic acid (PFBA)	<4.6		4.6	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorobutanesulfonic acid (PFBS)	3.7		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluoroheptanoic acid (PFHpA)	3.4		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	,
Perfluorononanoic acid (PFNA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorotetradecanoic acid (PFTeDA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluoro-3-methoxypropanoic acid (PFMPA)	<4.6		4.6	ng/L		01/19/22 07:07	01/21/22 01:28	
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	•
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorotridecanoic acid (PFTrDA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluorooctanesulfonamide (PFOSA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid (9Cl-PF3O	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	<1.8		1.8	ng/L			01/21/22 01:28	,
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	
Perfluoro-4-methoxybutanoic acid (PFMBA)	<4.6		4.6	ng/L			01/21/22 01:28	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<1.8		1.8	ng/L		01/19/22 07:07	01/21/22 01:28	,
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
13C4 PFBA	69					01/19/22 07:07	01/21/22 01:28	
13C5 PFPeA	61					01/19/22 07:07	01/21/22 01:28	
13C2 PFHxA	77					01/19/22 07:07	01/21/22 01:28	
13C4 PFHpA	86					01/19/22 07:07	01/21/22 01:28	

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Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Lab Sample ID: 810-11965-1

Matrix: Water

PWSID Number: MI0000220

Job ID: 810-11965-1

Client Sample ID: Al34896 Final Effluent

Date Collected: 01/12/22 08:13 Date Received: 01/13/22 10:15

Method: L402 - Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFOA	85			01/19/22 07:07	01/21/22 01:28	1
13C9 PFNA	86			01/19/22 07:07	01/21/22 01:28	1
13C2 PFDA	13			01/19/22 07:07	01/21/22 01:28	1
13C7 PFUnA	62			01/19/22 07:07	01/21/22 01:28	1
13C2 PFDoA	45			01/19/22 07:07	01/21/22 01:28	1
13C2 PFTeDA	26			01/19/22 07:07	01/21/22 01:28	1
13C2 PFHxDA	81			01/19/22 07:07	01/21/22 01:28	1
13C3 PFBS	93			01/19/22 07:07	01/21/22 01:28	1
13C3 PFHxS	95			01/19/22 07:07	01/21/22 01:28	1
13C4 PFOS	72			01/19/22 07:07	01/21/22 01:28	1
NMeFOSAA-d3	42			01/19/22 07:07	01/21/22 01:28	1
NEtFOSAA-d5	54			01/19/22 07:07	01/21/22 01:28	1
13C8-PFOSA	34			01/19/22 07:07	01/21/22 01:28	1
NMeFOSA-d3	15			01/19/22 07:07	01/21/22 01:28	1
NEtFOSA-d5	24			01/19/22 07:07	01/21/22 01:28	1
NMeFOSE-d7	29			01/19/22 07:07	01/21/22 01:28	1
NEtFOSE-d9	27			01/19/22 07:07	01/21/22 01:28	1
13C2-4:2-FTS	120			01/19/22 07:07	01/21/22 01:28	1
13C2-6:2-FTS	148			01/19/22 07:07	01/21/22 01:28	1
13C2-8:2-FTS	25			01/19/22 07:07	01/21/22 01:28	1
13C3 HFPO-DA	75			01/19/22 07:07	01/21/22 01:28	1

Client Sample ID: Al34897 Raw Influent

Date Collected: 01/11/22 08:14 Date Received: 01/13/22 10:15

Lab Sample ID: 810-11965-2

Matrix: Water PWSID Number: MI0000220

Method: L402 - Poly ar	d Per-Fluorinated	Chemicals in	n Water by	LC/MS/MS
Analyte	Result	Qualifier	RL	Uni

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4.5	4.5	ng/L		01/19/22 07:07	01/20/22 23:44	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<4.5	4.5	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorooctanesulfonic acid (PFOS)	2.3	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluoroundecanoic acid (PFUnA)	<1.8	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
N-methylperfluorooctanesulfonamidoa cetic acid	<1.8	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluoropentanoic acid (PFPeA)	6.3	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
1H,1H,2H,2H-perfluorooctanesulfo nic acid (6:2)	2.1	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
N-ethylperfluorooctanesulfonamidoac etic acid	<1.8	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorohexanoic acid (PFHxA)	6.3	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorododecanoic acid (PFDoA)	<1.8	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorooctanoic acid (PFOA)	2.2	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorodecanoic acid (PFDA)	<1.8	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorodecanesulfonic acid (PFDS)	<1.8	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorohexanesulfonic acid (PFHxS)	2.3	1.8	ng/L		01/19/22 07:07	01/20/22 23:44	1
Perfluorobutanoic acid (PFBA)	6.3	4.5	ng/L		01/19/22 07:07	01/20/22 23:44	1

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Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Date Collected: 01/11/22 08:14

Date Received: 01/13/22 10:15

Client Sample ID: Al34897 Raw Influent

Lab Sample ID: 810-11965-2

Matrix: Water

PWSID Number: MI0000220

Job ID: 810-11965-1

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	4.1	1.8	ng/L		1/19/22 07:07	01/20/22 23:44	1
Perfluoroheptanoic acid (PFHpA)	2.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluorononanoic acid (PFNA)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluorotetradecanoic acid (PFTeDA)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<4.5	4.5	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluorononanesulfonic acid (PFNS)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluorotridecanoic acid (PFTrDA)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluorooctanesulfonamide (PFOSA)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid (9CI-PF3O	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<4.5	4.5	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<1.8	1.8	ng/L	0	1/19/22 07:07	01/20/22 23:44	1
Isotope Dilution	%Recovery Qualifier	Limits			Prepared	Analyzed	Dil Fac

(ADONA)	<1.0		1.0	ng/L	01/19/22 07:07	01/20/22 23:44	ı
Isotope Dilution	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
13C4 PFBA	70				01/19/22 07:07	01/20/22 23:44	1
13C5 PFPeA	74				01/19/22 07:07	01/20/22 23:44	1
13C2 PFHxA	78				01/19/22 07:07	01/20/22 23:44	1
13C4 PFHpA	87				01/19/22 07:07	01/20/22 23:44	1
13C2 PFOA	84				01/19/22 07:07	01/20/22 23:44	1
13C9 PFNA	88				01/19/22 07:07	01/20/22 23:44	1
13C2 PFDA	14				01/19/22 07:07	01/20/22 23:44	1
13C7 PFUnA	38				01/19/22 07:07	01/20/22 23:44	1
13C2 PFDoA	31				01/19/22 07:07	01/20/22 23:44	1
13C2 PFTeDA	61				01/19/22 07:07	01/20/22 23:44	1
13C2 PFHxDA	247				01/19/22 07:07	01/20/22 23:44	1
13C3 PFBS	98				01/19/22 07:07	01/20/22 23:44	1
13C3 PFHxS	94				01/19/22 07:07	01/20/22 23:44	1
13C4 PFOS	72				01/19/22 07:07	01/20/22 23:44	1
NMeFOSAA-d3	28				01/19/22 07:07	01/20/22 23:44	1
NEtFOSAA-d5	28				01/19/22 07:07	01/20/22 23:44	1
13C8-PFOSA	22				01/19/22 07:07	01/20/22 23:44	1
NMeFOSA-d3	52				01/19/22 07:07	01/20/22 23:44	1
NEtFOSA-d5	138				01/19/22 07:07	01/20/22 23:44	1
NMeFOSE-d7	46				01/19/22 07:07	01/20/22 23:44	1
NEtFOSE-d9	74				01/19/22 07:07	01/20/22 23:44	1
13C2-4:2-FTS	136				01/19/22 07:07	01/20/22 23:44	1
13C2-6:2-FTS	183				01/19/22 07:07	01/20/22 23:44	1
13C2-8:2-FTS	25				01/19/22 07:07	01/20/22 23:44	1
13C3 HFPO-DA	79				01/19/22 07:07	01/20/22 23:44	1

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Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Date Collected: 01/12/22 07:20

Date Received: 01/13/22 10:15

8:2 Fluorotelomer sulfonic acid

4:2 Fluorotelomer sulfonic acid

9CI-PF3ONS

DONA

HFPODA

Client Sample ID: Al34898 Biosolids

Lab Sample ID: 810-11965-3

01/30/22 12:25 01/31/22 18:50

01/30/22 12:25 01/31/22 18:50

01/30/22 12:25 01/31/22 18:50

1

Matrix: Solid

PWSID Number: MI0000220

Job ID: 810-11965-1

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluoroheptanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorooctanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorononanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorodecanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorotridecanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorotetradecanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorobutanesulfonic acid	<0.99	0.99	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorohexanesulfonic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorooctanesulfonic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
NEtFOSAA	<0.99	0.99	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
NMeFOSAA	<0.99	0.99	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluoropentanesulfonic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluoroheptanesulfonic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorononanesulfonic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorodecanesulfonic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorooctanesulfonamide	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorobutanoic acid	<0.99	0.99	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluoropentanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluoroundecanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
6:2 Fluorotelomer sulfonic acid	<0.99	0.99	ug/Kg		01/30/22 12:25	01/31/22 18:50	1
Perfluorododecanoic acid	<0.30	0.30	ug/Kg		01/30/22 12:25	01/31/22 18:50	1

1.5

0.99

0.99

1.5

0.99

<1.5

< 0.99

< 0.99

<1.5

< 0.99

ug/Kg

ug/Kg

ug/Kg

ug/Kg

ug/Kg

11CI-PF3OUdS	<0.30		0.30	ug/Kg	01/30/22 12:25	01/31/22 18:50	1
Isotope Dilution	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
M2-4:2 FTS	127		10 - 200		01/30/22 12:25	01/31/22 18:50	1
M2-8:2 FTS	169		15 - 200		01/30/22 12:25	01/31/22 18:50	1
M2-6:2 FTS	123		10 - 200		01/30/22 12:25	01/31/22 18:50	1
13C5 PFHxA	92		10 - 174		01/30/22 12:25	01/31/22 18:50	1
13C4 PFHpA	88		10 - 178		01/30/22 12:25	01/31/22 18:50	1
13C8 PFOA	103		26 - 159		01/30/22 12:25	01/31/22 18:50	1
13C9 PFNA	92		26 - 165		01/30/22 12:25	01/31/22 18:50	1
13C6 PFDA	104		26 - 161		01/30/22 12:25	01/31/22 18:50	1
13C7 PFUnA	102		12 - 173		01/30/22 12:25	01/31/22 18:50	1
13C2-PFDoDA	96		11 - 166		01/30/22 12:25	01/31/22 18:50	1
13C2 PFTeDA	94		10 - 169		01/30/22 12:25	01/31/22 18:50	1
13C3 PFBS	104		27 - 179		01/30/22 12:25	01/31/22 18:50	1
13C3 PFHxS	100		24 - 171		01/30/22 12:25	01/31/22 18:50	1
13C8 PFOS	102		41 - 154		01/30/22 12:25	01/31/22 18:50	1
d3-NMeFOSAA	130		10 - 178		01/30/22 12:25	01/31/22 18:50	1
d5-NEtFOSAA	164		10 - 193		01/30/22 12:25	01/31/22 18:50	1
13C8 FOSA	85		14 - 163		01/30/22 12:25	01/31/22 18:50	1
13C4 PFBA	98		28 - 153		01/30/22 12:25	01/31/22 18:50	1
13C5 PFPeA	105		24 - 161		01/30/22 12:25	01/31/22 18:50	1
13C3 HFPO-DA	103		10 - 169		01/30/22 12:25	01/31/22 18:50	1

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Job ID: 810-11965-1

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid Prep Type: Total/NA

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		M242FTS	M282FTS	M262FTS	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA
Lab Sample ID	Client Sample ID	(10-200)	(15-200)	(10-200)	(10-174)	(10-178)	(26-159)	(26-165)	(26-161)
810-11965-3	Al34898 Biosolids	127	169	123	92	88	103	92	104
LCS 410-218029/2-B	Lab Control Sample	102	95	92	88	87	98	94	101
LCSD 410-218029/3-B	Lab Control Sample Dup	112	95	92	98	92	103	103	103
MB 410-218029/1-B	Method Blank	123	109	104	101	95	110	108	110
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		13C7PUA	PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(12-173)	(11-166)	(10-169)	(27-179)	(24-171)	(41-154)	(10-178)	(10-193)
810-11965-3	Al34898 Biosolids	102	96	94	104	100	102	130	164
LCS 410-218029/2-B	Lab Control Sample	103	103	97	101	96	96	122	128
LCSD 410-218029/3-B	Lab Control Sample Dup	103	110	101	107	103	100	130	136
MB 410-218029/1-B	Method Blank	107	107	97	105	105	106	120	132
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	.imits)	
		PFOSA	PFBA	PFPeA	HFPODA				
Lab Sample ID	Client Sample ID	(14-163)	(28-153)	(24-161)	(10-169)				
810-11965-3	Al34898 Biosolids	85	98	105	103				
LCS 410-218029/2-B	Lab Control Sample	96	95	99	105				
LCSD 410-218029/3-B	Lab Control Sample Dup	102	99	103	111				
MB 410-218029/1-B	Method Blank	102	105	105	107				
Surrogate Legend									

M242FTS = M2-4:2 FTS

M282FTS = M2-8:2 FTS

M262FTS = M2-6:2 FTS

13C5PHA = 13C5 PFHxA

C4PFHA = 13C4 PFHpA

C8PFOA = 13C8 PFOA

C9PFNA = 13C9 PFNA

C6PFDA = 13C6 PFDA

13C7PUA = 13C7 PFUnA

PFDoDA = 13C2-PFDoDA

PFTDA = 13C2 PFTeDA

C3PFBS = 13C3 PFBS

C3PFHS = 13C3 PFHxS

C8PFOS = 13C8 PFOS d3NMFOS = d3-NMeFOSAA

d5NEFOS = d5-NEtFOSAA

PFOSA = 13C8 FOSA

PFBA = 13C4 PFBA

PFPeA = 13C5 PFPeA

HFPODA = 13C3 HFPO-DA

Method: L402 - Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)											
		PFBA	PFPeA	PFHxA	C4PFHA	13PFOA	C9PFNA	PFDA	13C7PUA				
Lab Sample ID	Client Sample ID												
810-11965-1	Al34896 Final Effluent	69	61	77	86	85	86	13	62				
810-11965-2	Al34897 Raw Influent	70	74	78	87	84	88	14	38				
LLCS 810-11198/2-A	Lab Control Sample	92	84	88	86	77	61	47	32				

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Isotope Dilution Summary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method: L402 - Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS (Continued)

Matrix: Water Prep Type: Total/NA

			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFBA	PFPeA	PFHxA	C4PFHA	13PFOA	C9PFNA	PFDA	13C7PU
Lab Sample ID	Client Sample ID								
MBL 810-11198/1-A	Method Blank	87	83	86	87	72	52	39	31
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		PFDoA	PFTDA	PFHxDA	C3PFBS	C3PFHS	PFOS	NFOSAA	NEFOS
Lab Sample ID	Client Sample ID								
810-11965-1	Al34896 Final Effluent	45	26	81	93	95	72	42	54
810-11965-2	Al34897 Raw Influent	31	61	247	98	94	72	28	28
LLCS 810-11198/2-A	Lab Control Sample	25	25	39	100	94	54	27	32
MBL 810-11198/1-A	Method Blank	28	27	33	100	93	44	32	39
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		13C8PA	NMFOSA	NEFOSA	NMFOSE	NEFOSE	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID								
810-11965-1	Al34896 Final Effluent	34	15	24	29	27	120	148	25
810-11965-2	Al34897 Raw Influent	22	52	138	46	74	136	183	25
LLCS 810-11198/2-A	Lab Control Sample	32	18	25	22	23	72	80	51
MBL 810-11198/1-A	Method Blank	32	20	27	25	25	80	83	45
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)	
		HFPODA							
Lab Sample ID	Client Sample ID								
810-11965-1	Al34896 Final Effluent	75							
810-11965-2	Al34897 Raw Influent	79							
LLCS 810-11198/2-A	Lab Control Sample	90							
MBL 810-11198/1-A	Method Blank	89							

Surrogate Legend

PFBA = 13C4 PFBA

PFPeA = 13C5 PFPeA

PFHxA = 13C2 PFHxA

C4PFHA = 13C4 PFHpA

13PFOA = 13C2 PFOA

C9PFNA = 13C9 PFNA

PFDA = 13C2 PFDA

13C7PUA = 13C7 PFUnA

PFDoA = 13C2 PFDoA

PFTDA = 13C2 PFTeDA

PFHxDA = 13C2 PFHxDA

C3PFBS = 13C3 PFBS C3PFHS = 13C3 PFHxS

PFOS = 13C4 PFOS

PFUS = 13C4 PFUS

NFOSAA = NMeFOSAA-d3

NEFOS = NEtFOSAA-d5

13C8PA = 13C8-PFOSA

NMFOSA = NMeFOSA-d3

NEFOSA = NEtFOSA-d5

NMFOSE = NMeFOSE-d7 NEFOSE = NEtFOSE-d9

42FTS = 13C2-4:2-FTS

62FTS = 13C2-6:2-FTS

82FTS = 13C2-8:2-FTS

HFPODA = 13C3 HFPO-DA

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QC Sample Results

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-218029/1-B

Matrix: Solid

Analysis Batch: 219354

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 218029

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluoroheptanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorooctanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorononanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorodecanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorotridecanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorotetradecanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorobutanesulfonic acid	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorohexanesulfonic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorooctanesulfonic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
NEtFOSAA	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
NMeFOSAA	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluoropentanesulfonic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluoroheptanesulfonic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorononanesulfonic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorodecanesulfonic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorooctanesulfonamide	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorobutanoic acid	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluoropentanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluoroundecanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
6:2 Fluorotelomer sulfonic acid	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
Perfluorododecanoic acid	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
8:2 Fluorotelomer sulfonic acid	<1.5		1.5	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
4:2 Fluorotelomer sulfonic acid	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
9CI-PF3ONS	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
DONA	<1.5		1.5	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
HFPODA	<1.0		1.0	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
11CI-PF3OUdS	<0.30		0.30	ug/Kg		01/26/22 10:56	01/31/22 16:48	1
	MB	MB						
	0/5							

	MB	MB				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-4:2 FTS	123		10 - 200	01/26/22 10:56	01/31/22 16:48	1
M2-8:2 FTS	109		15 - 200	01/26/22 10:56	01/31/22 16:48	1
M2-6:2 FTS	104		10 - 200	01/26/22 10:56	01/31/22 16:48	1
13C5 PFHxA	101		10 - 174	01/26/22 10:56	01/31/22 16:48	1
13C4 PFHpA	95		10 - 178	01/26/22 10:56	01/31/22 16:48	1
13C8 PFOA	110		26 - 159	01/26/22 10:56	01/31/22 16:48	1
13C9 PFNA	108		26 - 165	01/26/22 10:56	01/31/22 16:48	1
13C6 PFDA	110		26 - 161	01/26/22 10:56	01/31/22 16:48	1
13C7 PFUnA	107		12 - 173	01/26/22 10:56	01/31/22 16:48	1
13C2-PFDoDA	107		11 - 166	01/26/22 10:56	01/31/22 16:48	1
13C2 PFTeDA	97		10 - 169	01/26/22 10:56	01/31/22 16:48	1
13C3 PFBS	105		27 - 179	01/26/22 10:56	01/31/22 16:48	1
13C3 PFHxS	105		24 - 171	01/26/22 10:56	01/31/22 16:48	1
13C8 PFOS	106		41 - 154	01/26/22 10:56	01/31/22 16:48	1
d3-NMeFOSAA	120		10 - 178	01/26/22 10:56	01/31/22 16:48	1
d5-NEtFOSAA	132		10 - 193	01/26/22 10:56	01/31/22 16:48	1
13C8 FOSA	102		14 - 163	01/26/22 10:56	01/31/22 16:48	1
13C4 PFBA	105		28 - 153	01/26/22 10:56	01/31/22 16:48	1

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Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-218029/1-B

Matrix: Solid

Analysis Batch: 219354

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 218029

MB MB Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 13C5 PFPeA 105 24 - 161 01/26/22 10:56 01/31/22 16:48 13C3 HFPO-DA 107 10 - 169 01/26/22 10:56 01/31/22 16:48

LCS LCS

Lab Sample ID: LCS 410-218029/2-B

Matrix: Solid

Analysis Batch: 219354

Perfluorooctadecanoic acid

Perfluorobutanoic acid

Perfluoropentanoic acid

Perfluoroundecanoic acid

Perfluorododecanoic acid

9CI-PF3ONS

11CI-PF3OUdS

DONA

HFPODA

6:2 Fluorotelomer sulfonic acid

8:2 Fluorotelomer sulfonic acid

4:2 Fluorotelomer sulfonic acid

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

%Rec.

Prep Type: Total/NA Prep Batch: 218029

Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Perfluorohexanoic acid	25.0	22.5		ug/Kg		90	61 - 147	
Perfluoroheptanoic acid	25.0	23.4		ug/Kg		93	61 - 151	
Perfluorooctanoic acid	25.0	20.9		ug/Kg		84	62 - 144	
Perfluorononanoic acid	25.0	22.2		ug/Kg		89	62 - 148	
Perfluorodecanoic acid	25.0	20.9		ug/Kg		84	62 - 142	
Perfluorotridecanoic acid	25.0	21.9		ug/Kg		88	57 - 152	
Perfluorotetradecanoic acid	25.0	21.8		ug/Kg		87	60 - 147	
Perfluorobutanesulfonic acid	22.1	19.3		ug/Kg		87	62 - 137	
Perfluorohexanesulfonic acid	22.8	20.2		ug/Kg		89	57 - 135	
Perfluorooctanesulfonic acid	23.1	19.7		ug/Kg		85	48 - 134	
NEtFOSAA	25.0	20.9		ug/Kg		84	50 - 140	
NMeFOSAA	25.0	21.9		ug/Kg		87	53 - 149	
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2)	24.1	24.5		ug/Kg		102	42 - 142	
Perfluoropentanesulfonic acid	23.5	20.3		ug/Kg		87	65 - 145	
Perfluoroheptanesulfonic acid	23.8	20.7		ug/Kg		87	67 - 138	
Perfluorononanesulfonic acid	24.0	20.2		ug/Kg		84	63 - 143	
Perfluorodecanesulfonic acid	24.1	19.5		ug/Kg		81	60 - 142	
Perfluorododecanesulfonic acid (PFDoS)	24.2	20.4		ug/Kg		84	52 - 145	
Perfluorooctanesulfonamide	25.0	26.7		ug/Kg		107	52 - 132	
Perfluorohexadecanoic acid	25.0	20.6		ug/Kg		82	44 - 161	

25.0

25.0

25.0

25.0

23.7

25.0

24.0

23.4

23.3

23.6

25.0

23.3

21.5

20.6

20.3

22.7

21.7

22.1

22.4

20.4

19.7

23.6

21.4

19.7

ug/Kg

86

82

81

91

92

88

94

87

85

100

86

85

16 - 175

50 - 185

69 - 144

62 - 144

53 - 137

60 - 147

50 - 147

55 - 132

48 - 146

48 - 155

29 - 162

45 - 145

Spike

Isotope Dilution	%Recovery	Qualifier	Limits
M2-4:2 FTS	102		10 - 200
M2-8:2 FTS	95		15 - 200
M2-6:2 FTS	92		10 - 200
13C5 PFHxA	88		10 - 174
13C4 PFHpA	87		10 - 178

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QC Sample Results

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-218029/2-B

Matrix: Solid

Analysis Batch: 219354

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 218029

LCS LCS

Isotope Dilution	%Recovery	Qualifier	Limits
13C8 PFOA	98		26 - 159
13C9 PFNA	94		26 - 165
13C6 PFDA	101		26 - 161
13C7 PFUnA	103		12 - 173
13C2-PFDoDA	103		11 - 166
13C2 PFTeDA	97		10 - 169
13C3 PFBS	101		27 - 179
13C3 PFHxS	96		24 - 171
13C8 PFOS	96		41 - 154
d3-NMeFOSAA	122		10 - 178
d5-NEtFOSAA	128		10 - 193
13C8 FOSA	96		14 - 163
13C4 PFBA	95		28 - 153
13C5 PFPeA	99		24 - 161
13C3 HFPO-DA	105		10 - 169

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 219354

Perfluorododecanesulfonic acid

(PFDoS)

Lab Sample ID: LCSD 410-218029/3-B

Prep Type: Total/NA

Prep Batch: 218029

Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit Perfluorohexanoic acid 25.0 89 61 - 147 22.2 ug/Kg 30 25.0 95 Perfluoroheptanoic acid 23.9 61 - 151 2 30 ug/Kg Perfluorooctanoic acid 25.0 30 20.2 ug/Kg 81 62 - 144Perfluorononanoic acid 25.0 21.6 ug/Kg 86 62 - 148 30

Perfluorodecanoic acid 25.0 214 ug/Kg 86 62 - 142 30 Perfluorotridecanoic acid 25.0 21.6 ug/Kg 86 57 - 15230 Perfluorotetradecanoic acid 25.0 21.9 87 60 - 147 30 ug/Kg Perfluorobutanesulfonic acid 22.1 19.5 88 62 - 137 30 ug/Kg Perfluorohexanesulfonic acid 22.8 20.2 ug/Kg 89 57 - 135 0 30 Perfluorooctanesulfonic acid 23.1 20.7 ug/Kg 90 48 - 134 5 30 **NEtFOSAA** 50 - 140 78 25.0 19.6 ug/Kg 6 30 **NMeFOSAA** 25.0 21.1 ug/Kg 85 53 - 1493 30 1H,1H,2H,2H-perfluorododecane 24.1 24.8 ug/Kg 103 42 - 142 30 sulfonic acid (10:2) 23.5 20.3 87 30 65 - 145O Perfluoropentanesulfonic acid ug/Kg Perfluoroheptanesulfonic acid 23.8 20.1 ug/Kg 84 67 - 13830 Perfluorononanesulfonic acid 24 0 21.2 88 63 - 143 5 30 ug/Kg Perfluorodecanesulfonic acid 24.1 21.3 ug/Kg 88 60 - 14230

Perfluorooctanesulfonamide 25.0 25.7 103 52 - 132 30 ug/Kg 25.0 82 44 - 161 30 Perfluorohexadecanoic acid 20.5 ug/Kg Perfluorooctadecanoic acid 25.0 22.2 89 16 - 175 30 ug/Kg Perfluorobutanoic acid 25.0 20.9 84 50 - 185 30 ug/Kg Perfluoropentanoic acid 25.0 20.1 80 69 - 144 30 ug/Kg Perfluoroundecanoic acid 25.0 23.4 94 62 - 144 3 30 ug/Kg 6:2 Fluorotelomer sulfonic acid 23.7 23.3 ug/Kg 98 53 - 1377 30 60 - 147 Perfluorododecanoic acid 25.0 21.7 ug/Kg 30

20.4

ug/Kg

24.2

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52 - 145

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0

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-218029/3-B

Matrix: Solid

Analysis Batch: 219354

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 218029

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
8:2 Fluorotelomer sulfonic acid	24.0	23.2		ug/Kg		97	50 - 147	3	30
4:2 Fluorotelomer sulfonic acid	23.4	19.8		ug/Kg		85	55 - 132	3	30
9CI-PF3ONS	23.3	20.8		ug/Kg		90	48 - 146	6	30
DONA	23.6	23.2		ug/Kg		98	48 - 155	2	30
HFPODA	25.0	22.2		ug/Kg		89	29 - 162	3	30
11CI-PF3OUdS	23.3	20.6		ug/Kg		88	45 - 145	4	30

	LCSD	LCSD	
Isotope Dilution	%Recovery	Qualifier	Limits
M2-4:2 FTS	112		10 - 200
M2-8:2 FTS	95		15 - 200
M2-6:2 FTS	92		10 - 200
13C5 PFHxA	98		10 - 174
13C4 PFHpA	92		10 - 178
13C8 PFOA	103		26 - 159
13C9 PFNA	103		26 - 165
13C6 PFDA	103		26 - 161
13C7 PFUnA	103		12 - 173
13C2-PFDoDA	110		11 - 166
13C2 PFTeDA	101		10 - 169
13C3 PFBS	107		27 - 179
13C3 PFHxS	103		24 - 171
13C8 PFOS	100		41 - 154
d3-NMeFOSAA	130		10 - 178
d5-NEtFOSAA	136		10 - 193
13C8 FOSA	102		14 - 163
13C4 PFBA	99		28 - 153
13C5 PFPeA	103		24 - 161

Method: L402 - Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS

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Lab Sample ID: MBL 810-11198/1-A

Matrix: Water

13C3 HFPO-DA

Analysis Batch: 11341

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 11198

	MBL	MBL						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<5.0		5.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<5.0		5.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
N-methylperfluorooctanesulfonamidoa cetic acid	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
N-ethylperfluorooctanesulfonamidoac etic acid	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1

Eurofins Eaton South Bend

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method: L402 - Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS (Continued)

Lab Sample ID: MBL 810-11198/1-A

Matrix: Water

Analysis Batch: 11341

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 11198

	MBL	MBL						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorobutanoic acid (PFBA)	<5.0		5.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorotetradecanoic acid (PFTeDA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<5.0		5.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluorooctanesulfonamide (PFOSA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid (9CI-PF3O	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<5.0		5.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/19/22 07:07	01/20/22 22:25	1
	MBL	MBL						

(ADONA)						
	MBL	MBL				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	87			01/19/22 07:07	01/20/22 22:25	1
13C5 PFPeA	83			01/19/22 07:07	01/20/22 22:25	1
13C2 PFHxA	86			01/19/22 07:07	01/20/22 22:25	1
13C4 PFHpA	87			01/19/22 07:07	01/20/22 22:25	1
13C2 PFOA	72			01/19/22 07:07	01/20/22 22:25	1
13C9 PFNA	52			01/19/22 07:07	01/20/22 22:25	1
13C2 PFDA	39			01/19/22 07:07	01/20/22 22:25	1
13C7 PFUnA	31			01/19/22 07:07	01/20/22 22:25	1
13C2 PFDoA	28			01/19/22 07:07	01/20/22 22:25	1
13C2 PFTeDA	27			01/19/22 07:07	01/20/22 22:25	1
13C2 PFHxDA	33			01/19/22 07:07	01/20/22 22:25	1
13C3 PFBS	100			01/19/22 07:07	01/20/22 22:25	1
13C3 PFHxS	93			01/19/22 07:07	01/20/22 22:25	1
13C4 PFOS	44			01/19/22 07:07	01/20/22 22:25	1
NMeFOSAA-d3	32			01/19/22 07:07	01/20/22 22:25	1
NEtFOSAA-d5	39			01/19/22 07:07	01/20/22 22:25	1
13C8-PFOSA	32			01/19/22 07:07	01/20/22 22:25	1
NMeFOSA-d3	20			01/19/22 07:07	01/20/22 22:25	1
NEtFOSA-d5	27			01/19/22 07:07	01/20/22 22:25	1

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QC Sample Results

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method: L402 - Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS (Continued)

Lab Sample ID: MBL 810-11198/1-A

Lab Sample ID: LLCS 810-11198/2-A

Matrix: Water

Matrix: Water

Analysis Batch: 11341

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

Prep Batch: 11198

MBL	MBL				
%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
25			01/19/22 07:07	01/20/22 22:25	1
25			01/19/22 07:07	01/20/22 22:25	1
80			01/19/22 07:07	01/20/22 22:25	1
83			01/19/22 07:07	01/20/22 22:25	1
45			01/19/22 07:07	01/20/22 22:25	1
89			01/19/22 07:07	01/20/22 22:25	1
	%Recovery 25 25 80 83 45	25 25 80 83 45	%Recovery Qualifier Limits 25 25 80 83 45 45	%Recovery Qualifier Limits Prepared 25 01/19/22 07:07 25 01/19/22 07:07 80 01/19/22 07:07 83 01/19/22 07:07 45 01/19/22 07:07	%Recovery Qualifier Limits Prepared Analyzed 25 01/19/22 07:07 01/20/22 22:25 25 01/19/22 07:07 01/20/22 22:25 80 01/19/22 07:07 01/20/22 22:25 83 01/19/22 07:07 01/20/22 22:25 45 01/19/22 07:07 01/20/22 22:25

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 11198

Analysis Batch: 11341 LLCS LLCS %Rec. Spike Analyte Added Result Qualifier Unit D %Rec Limits Hexafluoropropylene Oxide 4.95 <4.9 ng/L 97 50 - 150 Dimer Acid (HFPO-DA) Perfluorooctanesulfonic acid 1.98 <2.0 ng/L 99 50 - 150(PFOS) Perfluoroundecanoic acid 1.98 <2.0 ng/L 100 50 - 150 (PFUnA) N-methylperfluorooctanesulfona 1.98 <2.0 97 ng/L 50 - 150 midoacetic acid Perfluoropentanoic acid (PFPeA) 1.98 2.00 ng/L 101 50 - 150 1.98 <2.0 88 50 - 150 Perfluoropentanesulfonic acid ng/L (PFPeS) 1H,1H,2H,2H-perfluorooctanesulf 1.98 2.21 ng/L 112 50 - 150onic acid (6:2) N-ethylperfluorooctanesulfonami 1.98 <2.0 100 50 - 150 ng/L doacetic acid Perfluorohexanoic acid (PFHxA) 1.98 <2.0 100 50 - 150 ng/L 1.98 2.00 101 50 - 150 Perfluorododecanoic acid ng/L (PFDoA) Perfluorooctanoic acid (PFOA) 1.98 2.00 ng/L 101 50 - 150 Perfluorodecanoic acid (PFDA) 1.98 <2.0 ng/L 98 50 - 150 ng/L Perfluorodecanesulfonic acid 1.97 2.16 109 50 - 150 (PFDS) Perfluorohexanesulfonic acid 1.98 <2.0 ng/L 95 50 - 150 (PFHxS) Perfluorobutanoic acid (PFBA) 4.95 <4.9 ng/L 94 50 - 150 Perfluorobutanesulfonic acid 1.98 <2.0 ng/L 98 50 - 150 (PFBS) Perfluoroheptanoic acid (PFHpA) 1.98 <2.0 98 ng/L 50 - 150 Perfluoroheptanesulfonic Acid 1.98 73 50 - 150 <2.0 ng/L (PFHpS) Perfluorononanoic acid (PFNA) 1.98 <2.0 99 50 - 150 ng/L Perfluorotetradecanoic acid 1.98 2.10 ng/L 106 50 - 150 (PFTeDA) 120 1H,1H,2H,2H-perfluorodecanesul 1.98 2.37 ng/L 50 - 150 fonic acid (8:2) Perfluorononanesulfonic acid 1.98 <2.0 70 50 - 150 ng/L (PFNS) Perfluorotridecanoic acid 1.98 <2.0 ng/L 89 40 - 160 (PFTrDA) Perfluorooctanesulfonamide 1.98 <2.0 ng/L 92 50 - 150(PFOSA)

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QC Sample Results

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Lab Sample ID: LLCS 810-11198/2-A

Job ID: 810-11965-1

Client Sample ID: Lab Control Sample

Method: L402 - Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS (Continued)

Matrix: Water Analysis Batch: 11341							Prep Type: Total Prep Batch: 11	
	Spike	LLCS	LLCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid (9CI-PF3O	1.98	<2.0		ng/L		76	50 - 150	
1H,1H,2H,2H-perfluorohexanesul fonic acid (4:2)	1.98	2.28		ng/L		115	50 - 150	
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid (11Cl-PF	1.98	<2.0		ng/L		99	50 - 150	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.98	<2.0		ng/L		101	50 - 150	

acid (ADONA)			
		LLCS	
Isotope Dilution	%Recovery		Limits
13C4 PFBA	92		
13C5 PFPeA	84		
13C2 PFHxA	88		
13C4 PFHpA	86		
13C2 PFOA	77		
13C9 PFNA	61		
13C2 PFDA	47		
13C7 PFUnA	32		
13C2 PFDoA	25		
13C2 PFTeDA	25		
13C2 PFHxDA	39		
13C3 PFBS	100		
13C3 PFHxS	94		
13C4 PFOS	54		
NMeFOSAA-d3	27		
NEtFOSAA-d5	32		
13C8-PFOSA	32		
NMeFOSA-d3	18		
NEtFOSA-d5	25		
NMeFOSE-d7	22		
NEtFOSE-d9	23		
13C2-4:2-FTS	72		
13C2-6:2-FTS	80		
13C2-8:2-FTS	51		
13C3 HFPO-DA	90		

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QC Association Summary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

LCMS

Prep Batch: 11198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-11965-1	Al34896 Final Effluent	Total/NA	Water	L402 Prep	
810-11965-2	Al34897 Raw Influent	Total/NA	Water	L402 Prep	
MBL 810-11198/1-A	Method Blank	Total/NA	Water	L402 Prep	
LLCS 810-11198/2-A	Lab Control Sample	Total/NA	Water	L402 Prep	

Analysis Batch: 11341

Lab Sample ID 810-11965-1	Client Sample ID Al34896 Final Effluent	Prep Type Total/NA	Matrix Water	Method L402	Prep Batch 11198
810-11965-2	Al34897 Raw Influent	Total/NA	Water	L402	11198
MBL 810-11198/1-A	Method Blank	Total/NA	Water	L402	11198
LLCS 810-11198/2-A	Lab Control Sample	Total/NA	Water	L402	11198

Prep Batch: 218029

Lab Sample ID 810-11965-3	Client Sample ID Al34898 Biosolids	Prep Type Total/NA	Matrix Solid	Method T-WI-12031r10	Prep Batch
MB 410-218029/1-B	Method Blank	Total/NA	Solid	T-WI-12031r10	
LCS 410-218029/2-B	Lab Control Sample	Total/NA	Solid	T-WI-12031r10	
LCSD 410-218029/3-B	Lab Control Sample Dup	Total/NA	Solid	T-WI-12031r10	

Cleanup Batch: 219138

Lab Sample ID 810-11965-3	Client Sample ID Al34898 Biosolids	Prep Type Total/NA	Matrix Solid	Method Extract Aliquot	Prep Batch 218029
MB 410-218029/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	218029
LCS 410-218029/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	218029
LCSD 410-218029/3-B	Lab Control Sample Dup	Total/NA	Solid	Extract Aliquot	218029

Analysis Batch: 219354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-11965-3	Al34898 Biosolids	Total/NA	Solid	537 IDA	219138
MB 410-218029/1-B	Method Blank	Total/NA	Solid	537 IDA	219138
LCS 410-218029/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	219138
LCSD 410-218029/3-B	Lab Control Sample Dup	Total/NA	Solid	537 IDA	219138

Lab Chronicle

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Client Sample ID: Al34896 Final Effluent

Lab Sample ID: 810-11965-1 Date Collected: 01/12/22 08:13

Matrix: Water

Job ID: 810-11965-1

Batch Dilution Batch **Batch Prepared** Method or Analyzed **Prep Type** Type Run **Factor** Number Analyst Lab Total/NA L402 Prep 01/19/22 07:07 **EA SB** Prep EA SB Total/NA L402 11341 01/21/22 01:28 CM Analysis 1

Client Sample ID: Al34897 Raw Influent Lab Sample ID: 810-11965-2

Matrix: Water

Date Collected: 01/11/22 08:14 Date Received: 01/13/22 10:15

Date Received: 01/13/22 10:15

Batch Dilution Batch **Prepared** Method **Prep Type** Number or Analyzed Type Run **Factor** Analyst Lab EA SB Total/NA Prep L402 Prep 11198 01/19/22 07:07 MP Total/NA L402 EA SB Analysis 11341 01/20/22 23:44 CM 1

Lab Sample ID: 810-11965-3 Client Sample ID: Al34898 Biosolids

Date Collected: 01/12/22 07:20 **Matrix: Solid**

Date Received: 01/13/22 10:15

Batch Batch Dilution Batch **Prepared** Number Method or Analyzed **Prep Type** Type Run **Factor** Analyst Lab Total/NA Prep T-WI-12031r10 218029 01/30/22 12:25 S7AC ELLE Total/NA **Extract Aliquot** 219138 01/30/22 12:27 S7AC **ELLE** Cleanup Total/NA Analysis 537 IDA 1 219354 01/31/22 18:50 OLN7 **ELLE**

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

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

Accreditation/Certification Summary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Laboratory: Eurofins Eaton South Bend

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

Authority	Pı	rogram	Identification Number	Expiration Date				
Michigan	St	ate	9926	03-22-22				
The following analyte the agency does not	•	ort, but the laboratory is ı	not certified by the governing authority.	This list may include analytes for which				
Analysis Method	Prep Method	Matrix	Analyte					
L402	L402 Prep	Water	11-Chloroeicosafluoro-3-oxa ulfonic acid (11CI-PF	undecane-1-s				
L402	L402 Prep	Water	1H,1H,2H,2H-perfluorodecal (8:2)	nesulfonic acid				
L402	L402 Prep	Water	1H,1H,2H,2H-perfluorohexar (4:2)	nesulfonic acid				
L402	L402 Prep	Water	1H,1H,2H,2H-perfluorooctan (6:2)	nesulfonic acid				
L402	L402 Prep	Water	4,8-Dioxa-3H-perfluorononal (ADONA)	noic acid				
L402	L402 Prep	Water	9-Chlorohexadecafluoro-3-o: ulfonic acid (9CI-PF3O	xanonane-1-s				
L402	L402 Prep	Water	Hexafluoropropylene Oxide I (HFPO-DA)	Dimer Acid				
L402	L402 Prep	Water	N-ethylperfluorooctanesulfor acid	namidoacetic				
L402	L402 Prep	Water	acio N-methylperfluorooctanesulfonamidoacetic acid					
L402	L402 Prep	Water	Nonafluoro-3,6-dioxaheptano (NFDHA)	pic acid				
L402	L402 Prep	Water	Perfluoro-3-methoxypropano (PFMPA)	oic acid				
L402	L402 Prep	Water	Perfluoro-4-methoxybutanoid (PFMBA)	c acid				
L402	L402 Prep	Water	Perfluorobutanesulfonic acid	(PFBS)				
L402	L402 Prep	Water	Perfluorobutanoic acid (PFB	` '				
L402	L402 Prep	Water	Perfluorodecanesulfonic acid					
L402	L402 Prep	Water	Perfluorodecanoic acid (PFD	,				
L402	L402 Prep	Water	Perfluorododecanoic acid (P	•				
L402	L402 Prep	Water	Perfluoroheptanesulfonic Aci	<i>'</i>				
L402	L402 Prep	Water	Perfluoroheptanoic acid (PFI					
L402	L402 Prep	Water	Perfluorohexanesulfonic acid					
L402	L402 Prep	Water	Perfluorohexanoic acid (PFF	,				
L402	L402 Prep	Water	Perfluorononanesulfonic acid	,				
L402	L402 Prep	Water	Perfluorononanoic acid (PFN					
L402	L402 Prep	Water	Perfluorooctanesulfonamide	,				
L402	L402 Prep	Water	Perfluorooctanesulfonic acid					
L402 L402	L402 Prep	Water	Perfluorooctanoic acid (PFO	,				
L402	L402 Prep	Water	Perfluoropentanesulfonic aci	,				
L402	L402 Prep	Water	Perfluoropentanoic acid (PFI	'				
L402	L402 Prep	Water	Perfluorotetradecanoic acid	,				
L402	L402 Prep	Water	Perfluorotridecanoic acid (Pf	· · ·				
	·		Perfluoroundecanoic acid (P	,				
L402	L402 Prep	Water	remuoroundecanoic acid (P	runa)				

Laboratory: Eurofins Lancaster Laboratories Env, 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	1.01	11-30-22

Eurofins Eaton South Bend

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Accreditation/Certification Summary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Laboratory: Eurofins Lancaster Laboratories Env, 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		
A2LA	ISO/IEC 17025	0001.01	11-30-22		
Alaska	State	PA00009	06-30-22		
Alaska (UST)	State	17-027	02-28-22		
Arizona	State	AZ0780	03-11-22		
Arkansas DEQ	State	88-0660	08-10-22		
California	State	2792	02-02-22		
Colorado	State	PA00009	06-30-22		
Connecticut	State	PH-0746	06-30-23		
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-22		
Delaware (DW)	State	N/A	01-31-23		
Florida	NELAP	E87997	06-30-22		
Georgia (DW)	State	C048	01-31-22		
ławaii	State	N/A	01-31-22		
linois	NELAP	200027	01-31-23		
owa	State	361	03-02-22		
owa Kansas	NELAP	E-10151	10-31-22		
Kentucky (DW)	State	KY90088	12-31-22		
			12-31-22		
(entucky (UST)	State	1.01 KY90088			
Kentucky (WW)	State		01-01-23		
ouisiana	NELAP	02055	06-30-22		
Maine	State	2019012	03-12-22		
Maryland	State	100	06-30-22		
/lassachusetts	State	M-PA009	06-30-22		
<i>l</i> ichigan	State	9930	01-31-22		
Minnesota	NELAP	042-999-487	12-31-22		
<i>f</i> lissouri	State	450	01-31-25		
nontana (DW)	State	0098	01-01-23		
Montana (UST)	State	<cert no.=""></cert>	02-01-23		
lebraska	State	NE-OS-32-17	01-31-22		
New Hampshire	NELAP	2730	01-10-23		
lew Jersey	NELAP	PA011	06-30-22		
lew York	NELAP	10670	04-01-22		
North Carolina (DW)	State	42705	07-31-22		
North Carolina (WW/SW)	State	521	12-31-22		
North Dakota	State	R-205	01-31-22		
Oklahoma	NELAP	R-205	08-31-22		
Dregon	NELAP	PA200001	09-11-22		
PALA	Canada	1978	09-16-24		
Pennsylvania	NELAP	36-00037	01-31-23		
Rhode Island	State	LAO00338	12-30-22		
South Carolina	State	89002	01-31-22		
ennessee	State	02838	01-31-22		
exas	NELAP	T104704194-21-40	08-31-22		
/ermont	State	VT - 36037	10-28-22		
/irginia	NELAP	460182	06-14-22		
Vashington	State	C457	04-12-22		
Vest Virginia (DW)	State	9906 C	12-31-22		
West Virginia (DVV)	State	055	02-28-22		
	State	8TMS-L			
Vyoming			01-31-23		
Wyoming (UST)	A2LA	1.01	11-30-22		

Eurofins Eaton South Bend

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Method Summary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Method	Method Description	Protocol	Laboratory
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
L402	Poly and Per-Fluorinated Chemicals in Water by LC/MS/MS	Lab SOP	EA SB
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE
L402 Prep	Solid-Phase Extraction (SPE)	Lab SOP	EA SB
T-WI-12031r10	SOP(00037) T-PFAS-WI12031 Rev. 10	ELLE - Lancaster	ELLE

Protocol References:

ELLE - Lancaster = Eurofins Lancaster, Facility Standard Operating Procedure. EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

None = None

Laboratory References:

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

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

Eurofins Eaton South Bend

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Sample Summary

Client: Ann Arbor Water Treatment Plant Project/Site: Ann Arbor L402, RD200

Job ID: 810-11965-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
810-11965-1	Al34896 Final Effluent	Water	01/12/22 08:13	01/13/22 10:15	MI0000220
810-11965-2	Al34897 Raw Influent	Water	01/11/22 08:14	01/13/22 10:15	MI0000220
810-11965-3	Al34898 Biosolids	Solid	01/12/22 07:20	01/13/22 10:15	MI0000220

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Chain of Custody Record

4.4	611	rof	Ing
0.0	Cu	101	

Environment Testing

810-11965 Chain of Custody	Sampler:				ab PM:							Carrier 1	racking	No(s):			COC No:
en tCommunity	Phone:				atche -Mail:	ell, Ja	aciyn					State of	Origin:			-	810-681-187.1 Page:
ounts Payable	734-794-6426		I	ja	aclyn.g	gatch	nell@	eurofin	set.com	1				MI			Page 1 of 1
pany: n Arbor Water Treatment Plant			PWSID: MI00	00220					An	alysi	is Rec	ueste	d				Job #
ress: Sunset Road	Due Date Request	ed:							TT								Preservation Codes:
Suriset Road	TAT Requested (d	ays):					П										A - HCL M - Hexane B - NaOH N - None
Arbor							Ш								ш		C - Zn Acetate O - AsNaO2
e, Zip: 48103	Compliance Project	ct: A Yes	Δ (Νο)	_	- 1	п	Ш			1							E - NaHSO4 Q - Na2SO3
ne:	PO#: 2022-00000114				1		П										F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4
-794-6426(Tel)	WO#:				- 2 2		ш								11		H - Ascorbic Acid T - TSP Dodecahydral I - Ice U - Acetone
ountspayable@a2gov.org					S O C											80	J - DI Water V - MCAA
ect Name: n Arbor PFAS	Project #: 81000530															E	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
TAIDOLLIAG	SSOW#:	-			Ť											F	Other:
AS Raw Final Biosolids Jan 2022					S		ant			- 1						ō	
			Sample	Matrix	18		PFC-Quant									Numbe	
		Sample	Type (C=comp,	(W=wate S=solid,	<u></u>											Z	
mple Identification	Sample Date	Time	G=grab)	O=waste/o BT=Tissue, A		# rfc	L402									Total	Special Instructions/Note:
		$>\!<$	Preserva	tion Cod	e: X	X	D									X	
4896 Final Effluent	1/12/22	8:13	G	Wate	N	N	Х										* Include 11CI-PF3Ouds, 9CI-PF3ONS, ADONA
4897 Raw Influent	1/11/22	8:14	G	Wate	r N	N	x									2	Include 11CI-PF3Ouds, 9CI-PF3ONS, ADONA
4898 Biosolids	1/12/22	7:20	G	Solid	N	N	х									2	Include 11CI-PF3Ouds, 9CI-PF3ONS,
					-	-		_	+	+	+	-	+	-	1	- /	ADONA. Please use MDL as RL
					+	-	\vdash	_	+		_		-	\perp	\perp	-	
									11				1				
						╁	\vdash	-	+++	-	-	-	+	-	-	-	
					\perp	\perp			\perp								
						ш											
					+				++	_						-	
acible Hazard Identification					1	00	mele	Diene	2// 4	Foo ====	W 60 -	55055	d if	malaa		N/C	d longer than 1 month)
ossible Hazard Identification X Non-Hazard Flammable Skin Irritant	Poison B Unkno	own 🗀	Radiological			[oturn To				ssesse isposal					re For Months
liverable Requested: I, II, III, IV, Other (specify)	, JISON D OTIKN	-	rel II			Spe					uiremer		Dy La	,	All	CIIIV	e i oi ivionitis
		Date:	Gr II		Īτ								thad of	Shipment:			
pty Kit Relinquished by:	Date/Time:	Date:	···	Company	_ ["	me:	Post	ved by:				Me	u lod of		2:1	_	10
elinquished by: J. Bahen	01/12/	22		AAWTP			Tece!	A A A	Poli	line	11/1	ight		0 / // 3	120	1	015 Company
inquished by:	Date/Time:			Company			Rece	ved by/		1		1		Date/Time			Company
inquished by:	Date/Time:			Company			Recei	ved by:		U				Date/Time	9:	_	Company
				. ,				-,-									ided Sample Container
Custody Seals Intact: Custody Seal No.:																	

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Chain of Custody Record

11945

eurofins

Environment Testing

Phone 810-11965 Chain of Custody	Sampler:			TL	ab PM:						Ca	rrier Trac	king No(s	s):		COC No:	
Clien				(Satchel	II, Ja	aclyn				04	-tt O-i	-			810-681-187.1	
Client Connect. Accounts Payable	Phone: 734-794-6426			j	-Mail: aclyn.g	atch	nell@	eurofinse	et.com		Sta	ate of Orig	gin: MI			Page: Page 1 of 1	
Company: Ann Arbor Water Treatment Plant			PWSID: MI00	00220					Ana	lysis l	Reau	ested				Job #:	
Address:	Due Date Request	ed:								İ						Preservation Codes	3:
919 Sunset Road City:	TAT Requested (da	ays):			-										40		vII - Hexane N - None
Ann Arbor					- 10											C - Zn Acetate (O - AsNaO2 P - Na2O4S
State, Zip: VII, 48103	Compliance Project	ct: A Yes	Δ (Νο													E - NaHSO4 (Q - Na2SO3 R - Na2S2O3
Phone: 734-794-6426(Tel)	PO#: 2022-00000114				(0											G - Amchlor	S - H2SO4 F - TSP Dodecahydrate
Email accountspayable@a2gov.org	WO #:				Sample (Yes or No)	(0)									80	J - DI Water	J - Acetone V - MCAA
Project Name:	Project #:				(Yes	Sort									ainer		W - pH 4-5 Z - other (specify)
Ann Arbor PFAS Site:	81000530 SSOW#:		-		edu	(Le									containe	Other:	
PFAS Raw Final Biosolids Jan 2022					T	INISD	nant			1 1					er of		
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matri (W=wate S=solid O=waste/o BT=Tissue, A	r. SEE	E	L402 - PFC-Quant								Total Number	Special Inst	ructions/Note:
	\rightarrow	$>\!\!<$	Preserva	tion Cod	e: X	X	D	3						1 2	X	J 1	
Al34896 Final Effluent	1/12/22	8:13	G	Wate	r N	N	X								2	* Include 11CI-PF3O ADONA	
Al34897 Raw Influent	1/11/22	8:14	G	Wate	r N	N	×								2	* Include 11CI-PF3O ADONA	ouds, 9CI-PF3ONS,
Al34898 Biosolids	1/12/22	7:20	G	Solic	N	N	х								2	* Include 11CI-PF3O ADONA. Please use	
															1		
						Г									-		
						Г									-1,7		
					1	T						11			9		
						Н	\vdash	+									
					-	H	+						-	++			
					+	H	+		\vdash		\vdash						
Possible Hazard Identification		<u> </u>			_	Sa	mple	e Disposa	al (A fe	e may	be ass	essed	if samp	les are r	etain	ed longer than 1 r	month)
X Non-Hazard Flammable Skin Irritant Po	ison B Unkn	own D	Radiological					Return To				oosal B			Arch	ive For	_ Months
Deliverable Requested: I, II, III, IV, Other (specify)			vel II			Sp	ecial	Instruction	ons/QC	Require	ements	3 :					
Empty Kit Relinquished by:		Date:			Ti	me:						Metho	od of Ship				
Relinquished by: J. Bahen	Date/Time:	22		Company			Rec	eved by:	Det	hiel	11:	11	Dat	e/jime:j 3 2-2	,	1015	Company
Relinquished by.	Date/Time:			Company			Rec	eived by/		J	y	N. C.		e/Time:			Company
Relinquished by:	Date/Time:			Company			Rec	eived by:					Dat	e/Time:			Company
Custody Seals Intact Custody Seal No.:							Con	er Tempera	ature(s) °	C and Ot	her Rem	arks		Client	Pre	Wided Sample	Container
Δ Yes 4 No										1.4	We	t		OHOTIL	110	ovided Sample	Ou lander

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South Bend, IN

110 S Hill Street

Chain of Custody Record



South Bend, IN 110 S Hill Street South Bend, IN 46617	C	hain c	of Cust	ody R	Rec	or	d											eurofins	Environment Testin	ng
Phone: 574-233-4777 Fax: 574-233-8207																				
Client Information (Sub Contract Lab)	Sampler			Lab P		, Jacl	yn					Carrie	r Trackir	ng No(s)			_	OC No: 310-1711,1		
Client Contact:	Phone:			E-Ma	uil:			_					of Origin	ı:			- 1	'age:		
Shipping/Receiving				jacly			@eur					Mich	igan				_	Page 1 of 1		
Company: Eurofins Lancaster Laboratories Env, LLC							ons Req lichiga		See not	e):							- 1	ob #: 310-11965-1		
Address:	Due Date Request	ed:			1	10	gu				-						_	reservation Code	es:	_
2425 New Holland Pike, ,	1/26/2022								An	alysi	s Re	ques	ted					A - HCL	M - Hexane	
City:	TAT Requested (da	iya):				B-15-						П				93	8	B - NaOH	N - None	
Lancaster State, Zip:	-					100										1		C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S	
PA, 17601	1					T T						1 1				5.7		E - NaHSO4	Q - Na2SO3	
Phone:	PO #:				181	1.0						1 1				8		F - MeOH G - Amchlor	R - Na2S2O3 S - H2SO4	
717-656-2300(Tel)					ြ	SKM		1									H	H - Ascorbic Acid	T - TSP Dodecahydrate	.0
Email:	WO #:				Ž	2 0										18		- Ice J - DI Water	U - Acetone V - MCAA	
Project Name:	Designed #					2 8						1				2		K - EDTA	W - pH 4-5	
Ann Arbor L402, RD200	Project #: 81000530				اع	0 0						1 1				i e	9	L - EDA	Z - other (specify)	
Site:	SSOW#				†취	Perform MS/MSD (Yes or No) 537 (DA/PFC BioSol Prep (MOD) OSM5,1 Table	1									noo	Į o	Other:		
						8 S										ا ا				
			Cample	Matrix	ᄝ	SAN	'					1 1				jed red	šΓ			
			Sample Type	(W=water,	臺	E I										1 5				
		Sample	(C=comp,	S=solid, O=waste/oil,	P	ē o	FA							1		2	1			
Sample Identification - Client ID (Lab ID)	Sample Date	Time	G=grab)	BT=Tissue, A=Air	세희	537 P	24 P									Total Number	3	Special In	structions/Note:	
		\sim		tion Code:	M	∇			20	111	13 13		127		100	1	1	1		
Al34898 Biosolids (810-11965-3)	1/12/22	07:20		Solid	Ħ		x										, P	lease use MDL a	s RL. Do not use clien	nts
Aloroso biosolica (e le Troco-o)	1/12/22	Eastern		30110	+	-					_	\perp	_	_	\vdash	- 4	s	amples for QC. Pl	lease reserve duplicat	les
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Note: Since laboratory accreditations are subject to change, Eurofins Eaton Ana maintain accreditation in the State of Origin listed above for analysis/tests/matri. Analytical attention immediately. If all requested accreditations are current to di	t being analyzed, the s	amples must be	shipped back	to the Eurofins	s Eato	n Anal	lytical la	borator	y or oth	ratories er instr	. This suctions	ample s will be p	hipment rovided.	Any ch	arded und langes to	ler cha accre	ain-c ditat	of-custody. If the lab tion status should be	poratory does not current brought to Eurofins Eat	tly ton
Possible Hazard Identification						Sami	nle Dis	nosa	Ι/Δ1	ee ma	av he	29228	sed if	samol	es are	retai	nec	d longer than 1	month)	_
							7	п То				Dispos				7		e For	Months	
Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliver	able Rank. 2	?			Spec	ial Inst						ar by	Lab		AIL	LIIIV	9 FOI	MOTITIS	_
Empty Kit Relinquished by:		Date:			Tim	16'					_		Method	of Shipn	nent:					
Relinquished	Date/Time:		10	Ompany.			eceived	ber											I Company	_
Tresinguisited by	1-18-22	1600)	EEA		l'e	ocerved	Бу					-	Date	/Time:				Company	
Relinquished by:	Date/Time:			Sompany		R	eceived	by:						Date	/Time:				Company	_
							/													
Relinquished by:	Date/Time		0	Company		R	eceived	by:		1				Date	Tinte:	6	_	1010	Company £21£	
Custody Seals Intact: Custody Seal No.:						C	poler Te	mperat	ure(s) '	Cand	Other R	emarks		10	419	10	1	1015	Itale	
I van A Na I						- 1		-		-				1 4						

Login Sample Receipt Checklist

Client: Ann Arbor Water Treatment Plant Job Number: 810-11965-1

Login Number: 11965 List Source: Eurofins Eaton South Bend

List Number: 1

Creator: Pehling-Wright, Penny

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	False	Client provided containers

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Login Sample Receipt Checklist

Client: Ann Arbor Water Treatment Plant Job Number: 810-11965-1

Login Number: 11965
List Source: Eurofins Lancaster Laboratories Env, LLC
List Number: 2
List Creation: 01/19/22 02:09 PM

Creator: Foreman, Leah M

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (=6C, not frozen).</td <td>True</td> <td></td>	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (=6C, not frozen).</td <td>N/A</td> <td></td>	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?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	

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