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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
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Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-42266-1
Client Project/Site: PFAS & Perchlorate

For:
Pittsburgh Water and Sewer Authority
900 Freeport Road
Pittsburgh, Pennsylvania 15238

Attn: Aimee Butch

Authorized for release by:
6/21/2021 4:34:04 PM

Stephen Gordon, Senior Project Manager
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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Stephen Gordon
Senior Project Manager
6/21/2021 4:34:04 PM

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Definitions/Glossary

Client: Pittsburgh Water and Sewer Authority
Job ID: 410-42266-1
Project/Site: PFAS & Perchlorate

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.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
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

Job ID: 410-42266-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-42266-1

Receipt
The samples were received on 6/4/2021 8:18 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 1.8°C

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

Detection Summary

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Client Sample ID: Raw 300 — Lab Sample ID: 410-42266-1

No Detections.

Client Sample ID: Raw 300 — Lab Sample ID: 410-42266-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid	0.88	J	1.7	0.43	ng/L	1		EPA 537.1	Total/NA
Perfluoroheptanoic acid	0.48	J	1.7	0.43	ng/L	1		EPA 537.1	Total/NA
Perfluorohexanesulfonic acid	0.46	J	1.7	0.43	ng/L	1		EPA 537.1	Total/NA
Perfluorohexanoic acid	0.90	J	1.7	0.43	ng/L	1		EPA 537.1	Total/NA
Perfluorooctanesulfonic acid	1.6	J	1.7	0.43	ng/L	1		EPA 537.1	Total/NA
Perfluorooctanoic acid	1.0	J	1.7	0.43	ng/L	1		EPA 537.1	Total/NA

Client Sample ID: Raw 300 — Lab Sample ID: 410-42266-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	1.1	J	1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid	0.73	J	1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid	0.50	J	1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid	1.4	J	1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide	0.53	J	1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid	0.88	J	1.7	0.43	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EP 101 — Lab Sample ID: 410-42266-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid	0.47	J	1.7	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid	1.1	J	1.7	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid	0.73	J	1.7	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid	0.57	J	1.7	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid	1.9		1.7	0.42	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid	0.80	J	1.7	0.42	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EP 101 — Lab Sample ID: 410-42266-5

No Detections.

Client Sample ID: EP 101 — Lab Sample ID: 410-42266-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid	0.93	J	1.8	0.45	ng/L	1		EPA 537.1	Total/NA
Perfluoroheptanoic acid	0.57	J	1.8	0.45	ng/L	1		EPA 537.1	Total/NA
Perfluorohexanesulfonic acid	0.71	J	1.8	0.45	ng/L	1		EPA 537.1	Total/NA
Perfluorohexanoic acid	1.2	J	1.8	0.45	ng/L	1		EPA 537.1	Total/NA
Perfluorooctanesulfonic acid	2.0		1.8	0.45	ng/L	1		EPA 537.1	Total/NA
Perfluorooctanoic acid	0.99	J	1.8	0.45	ng/L	1		EPA 537.1	Total/NA

Client Sample ID: Field Blank (300) — Lab Sample ID: 410-42266-7

No Detections.

Client Sample ID: Field Blank (101) — Lab Sample ID: 410-42266-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Client Sample ID: Raw 300

Lab Sample ID: 410-42266-1
Matrix: Drinking Water

Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18

Method: SW846 6850 - Perchlorate by LC/MS or LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.23	ug/L		06/16/21 05:58	06/17/21 15:31	1

Client Sample ID: Raw 300

Lab Sample ID: 410-42266-2
Matrix: Drinking Water

Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NEtFOSAA	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
NMeFOSAA	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorobutanesulfonic acid	**0.88**	**J**	1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorodecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorododecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluoroheptanoic acid	**0.48**	**J**	1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorohexanesulfonic acid	**0.46**	**J**	1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorohexanoic acid	**0.90**	**J**	1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorononanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorooctanesulfonic acid	**1.6**	**J**	1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorooctanoic acid	**1.0**	**J**	1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorotetradecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluorotridecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1
Perfluoroundecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 04:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*87*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:54*	*1*
13C2 PFHxA	*88*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:54*	*1*
13C3 HFPO-DA	*91*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:54*	*1*
d5-NEtFOSAA	*78*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:54*	*1*

Client Sample ID: Raw 300

Lab Sample ID: 410-42266-3
Matrix: Water

Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluoroheptanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorooctanoic acid	**1.1**	**J**	1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorononanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorodecanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorotridecanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorotetradecanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorobutanesulfonic acid	**0.73**	**J**	1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorohexanesulfonic acid	**0.50**	**J**	1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorooctanesulfonic acid	**1.4**	**J**	1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
NEtFOSAA	ND		2.6	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
NMeFOSAA	ND		1.7	0.51	ng/L		06/07/21 16:15	06/10/21 05:42	1
10:2 FTS	ND		4.3	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluoropentanesulfonic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluoroheptanesulfonic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorononanesulfonic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1

Client Sample ID: Raw 300

Lab Sample ID: 410-42266-3

Date Collected: 06/01/21 07:50
Matrix: Water
Date Received: 06/04/21 08:18

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.6	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorooctanesulfonamide	**0.53**	**J**	1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorohexadecanoic acid	ND		2.6	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorooctadecanoic acid	ND		2.6	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorobutanoic acid	ND		4.3	1.7	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluoropentanoic acid	**0.88**	**J**	1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
NMeFOSE	ND		2.6	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1
NMeFOSA	ND		2.6	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1
NEtFOSE	ND		2.6	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1
NEtFOSA	ND		4.3	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluorododecanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
Perfluoroundecanoic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
4:2 Fluorotelomer sulfonic acid	ND		1.7	0.43	ng/L		06/07/21 16:15	06/10/21 05:42	1
6:2 Fluorotelomer sulfonic acid	ND		4.3	1.7	ng/L		06/07/21 16:15	06/10/21 05:42	1
8:2 Fluorotelomer sulfonic acid	ND		2.6	0.85	ng/L		06/07/21 16:15	06/10/21 05:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*101*		*20 - 187*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
M2-8:2 FTS	*97*		*34 - 182*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
M2-6:2 FTS	*129*		*29 - 189*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C5 PFHxA	*89*		*31 - 142*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C4 PFHpA	*93*		*30 - 144*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C8 PFOA	*99*		*49 - 127*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C9 PFNA	*105*		*47 - 136*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C6 PFDA	*94*		*47 - 128*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C7 PFUnA	*89*		*40 - 135*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C2-PFDoDA	*79*		*28 - 136*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C2 PFTeDA	*59*		*10 - 144*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C3 PFBS	*137*		*19 - 178*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C3 PFHxS	*95*		*32 - 145*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C8 PFOS	*99*		*49 - 126*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
d3-NMeFOSAA	*100*		*32 - 151*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
d5-NEtFOSAA	*110*		*37 - 164*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C8 FOSA	*48*		*10 - 143*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C4 PFBA	*99*		*41 - 132*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
13C5 PFPeA	*108*		*33 - 155*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
d7-N-MeFOSE-M	*27*		*10 - 143*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
d3-NMePFOSA	*12*		*10 - 107*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
d9-N-EtFOSE-M	*30*		*10 - 142*	*06/07/21 16:15*	*06/10/21 05:42*	*1*
d5-NEtPFOSA	*13*		*10 - 108*	*06/07/21 16:15*	*06/10/21 05:42*	*1*

Client Sample ID: EP 101

Lab Sample ID: 410-42266-4

Date Collected: 06/01/21 08:14
Matrix: Water
Date Received: 06/04/21 08:18

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluoroheptanoic acid	**0.47**	**J**	1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1

Client Sample ID: EP 101

Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18

Lab Sample ID: 410-42266-4

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	**1.1**	**J**	1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorononanoic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorodecanoic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorotridecanoic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorotetradecanoic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorobutanesulfonic acid	**0.73**	**J**	1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorohexanesulfonic acid	**0.57**	**J**	1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorooctanesulfonic acid	**1.9**		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
NEtFOSAA	ND		2.5	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
NMeFOSAA	ND		1.7	0.51	ng/L		06/07/21 16:15	06/10/21 05:53	1
10:2 FTS	ND		4.2	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluoropentanesulfonic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluoroheptanesulfonic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorononanesulfonic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorodecanesulfonic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorododecanesulfonic acid (PFDoS)	ND		2.5	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorooctanesulfonamide	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorohexadecanoic acid	ND		2.5	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorooctadecanoic acid	ND		2.5	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorobutanoic acid	ND		4.2	1.7	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluoropentanoic acid	**0.80**	**J**	1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
NMeFOSE	ND		2.5	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1
NMeFOSA	ND		2.5	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1
NEtFOSE	ND		2.5	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1
NEtFOSA	ND		4.2	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluorododecanoic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
Perfluoroundecanoic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
4:2 Fluorotelomer sulfonic acid	ND		1.7	0.42	ng/L		06/07/21 16:15	06/10/21 05:53	1
6:2 Fluorotelomer sulfonic acid	ND		4.2	1.7	ng/L		06/07/21 16:15	06/10/21 05:53	1
8:2 Fluorotelomer sulfonic acid	ND		2.5	0.85	ng/L		06/07/21 16:15	06/10/21 05:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*99*		*20 - 187*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
M2-8:2 FTS	*122*		*34 - 182*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
M2-6:2 FTS	*132*		*29 - 189*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C5 PFHxA	*89*		*31 - 142*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C4 PFHpA	*93*		*30 - 144*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C8 PFOA	*98*		*49 - 127*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C9 PFNA	*97*		*47 - 136*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C6 PFDA	*95*		*47 - 128*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C7 PFUnA	*92*		*40 - 135*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C2-PFDoDA	*84*		*28 - 136*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C2 PFTeDA	*71*		*10 - 144*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C3 PFBS	*133*		*19 - 178*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C3 PFHxS	*99*		*32 - 145*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C8 PFOS	*95*		*49 - 126*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
d3-NMeFOSAA	*108*		*32 - 151*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
d5-NEtFOSAA	*119*		*37 - 164*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C8 FOSA	*79*		*10 - 143*	*06/07/21 16:15*	*06/10/21 05:53*	*1*

Client Sample ID: EP 101
Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18

Lab Sample ID: 410-42266-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*41 - 132*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
13C5 PFPeA	*103*		*33 - 155*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
d7-N-MeFOSE-M	*72*		*10 - 143*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
d3-NMePFOSA	*26*		*10 - 107*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
d9-N-EtFOSE-M	*71*		*10 - 142*	*06/07/21 16:15*	*06/10/21 05:53*	*1*
d5-NEtPFOSA	*25*		*10 - 108*	*06/07/21 16:15*	*06/10/21 05:53*	*1*

Client Sample ID: EP 101
Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18

Lab Sample ID: 410-42266-5
Matrix: Drinking Water

Method: SW846 6850 - Perchlorate by LC/MS or LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.23	ug/L		06/16/21 05:58	06/17/21 15:40	1

Client Sample ID: EP 101
Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18

Lab Sample ID: 410-42266-6
Matrix: Drinking Water

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NEtFOSAA	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
NMeFOSAA	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorobutanesulfonic acid	**0.93**	**J**	1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorodecanoic acid	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorododecanoic acid	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluoroheptanoic acid	**0.57**	**J**	1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorohexanesulfonic acid	**0.71**	**J**	1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorohexanoic acid	**1.2**	**J**	1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorononanoic acid	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorooctanesulfonic acid	**2.0**		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorooctanoic acid	**0.99**	**J**	1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorotetradecanoic acid	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluorotridecanoic acid	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1
Perfluoroundecanoic acid	ND		1.8	0.45	ng/L		06/08/21 06:55	06/10/21 05:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*105*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:06*	*1*
13C2 PFHxA	*99*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:06*	*1*
13C3 HFPO-DA	*100*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:06*	*1*
d5-NEtFOSAA	*101*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:06*	*1*

Client Sample ID: Field Blank (300)
Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18

Lab Sample ID: 410-42266-7
Matrix: Drinking Water

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NEtFOSAA	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
NMeFOSAA	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorobutanesulfonic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1

Client Sample ID: Field Blank (300)

Lab Sample ID: 410-42266-7

Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18

Matrix: Drinking Water

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorododecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluoroheptanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorohexanesulfonic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorohexanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorononanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorooctanesulfonic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorooctanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorotetradecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluorotridecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1
Perfluoroundecanoic acid	ND		1.7	0.43	ng/L		06/08/21 06:55	06/10/21 05:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*88*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:17*	*1*
13C2 PFHxA	*89*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:17*	*1*
13C3 HFPO-DA	*112*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:17*	*1*
d5-NEtFOSAA	*88*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:17*	*1*

Client Sample ID: Field Blank (101)

Lab Sample ID: 410-42266-8

Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18

Matrix: Drinking Water

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NEtFOSAA	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
NMeFOSAA	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorobutanesulfonic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorodecanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorododecanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluoroheptanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorohexanesulfonic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorohexanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorononanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorooctanesulfonic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorooctanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorotetradecanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluorotridecanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1
Perfluoroundecanoic acid	ND		2.2	0.56	ng/L		06/08/21 06:55	06/10/21 05:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*104*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:29*	*1*
13C2 PFHxA	*106*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:29*	*1*
13C3 HFPO-DA	*99*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:29*	*1*
d5-NEtFOSAA	*93*		*70 - 130*	*06/08/21 06:55*	*06/10/21 05:29*	*1*

Surrogate Summary

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018

Matrix: Drinking Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		PFDA	PFHxA	HFPODA	d5NEFOS
Lab Sample ID	**Client Sample ID**	**(70-130)**	**(70-130)**	**(70-130)**	**(70-130)**
410-42266-2	Raw 300	87	88	91	78
410-42266-6	EP 101	105	99	100	101
410-42266-7	Field Blank (300)	88	89	112	88
410-42266-8	Field Blank (101)	104	106	99	93
LCS 410-135098/2-A	Lab Control Sample	95	96	91	89
LCSD 410-135098/3-A	Lab Control Sample Dup	96	104	99	88
MB 410-135098/1-A	Method Blank	87	93	86	91

Surrogate Legend

PFDA = 13C2 PFDA
PFHxA = 13C2 PFHxA
HFPODA = 13C3 HFPO-DA
d5NEFOS = d5-NEtFOSAA

Isotope Dilution Summary

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M282FTS	M262FTS	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA
Lab Sample ID	Client Sample ID	(20-187)	(34-182)	(29-189)	(31-142)	(30-144)	(49-127)	(47-136)	(47-128)
410-42266-3	Raw 300	101	97	129	89	93	99	105	94
410-42266-4	EP 101	99	122	132	89	93	98	97	95
LCS 410-134910/2-A	Lab Control Sample	99	101	117	94	98	98	97	94
LCSD 410-134910/3-A	Lab Control Sample Dup	98	116	108	93	93	97	95	97
MB 410-134910/1-A	Method Blank	100	102	107	92	94	96	98	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		13C7PUA	PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(40-135)	(28-136)	(10-144)	(19-178)	(32-145)	(49-126)	(32-151)	(37-164)
410-42266-3	Raw 300	89	79	59	137	95	99	100	110
410-42266-4	EP 101	92	84	71	133	99	95	108	119
LCS 410-134910/2-A	Lab Control Sample	96	93	91	109	95	96	111	118
LCSD 410-134910/3-A	Lab Control Sample Dup	93	91	90	108	93	95	110	122
MB 410-134910/1-A	Method Blank	94	91	93	109	92	95	111	114

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		PFOSA	PFBA	PFPeA	NMFM	d3NMFSA	NEFM	d5NPFSA
Lab Sample ID	Client Sample ID	(10-143)	(41-132)	(33-155)	(10-143)	(10-107)	(10-142)	(10-108)
410-42266-3	Raw 300	48	99	108	27	12	30	13
410-42266-4	EP 101	79	96	103	72	26	71	25
LCS 410-134910/2-A	Lab Control Sample	63	94	96	42	12	42	12
LCSD 410-134910/3-A	Lab Control Sample Dup	60	92	94	41	10	39	10
MB 410-134910/1-A	Method Blank	57	94	96	39	11	41	10

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
NMFM = d7-N-MeFOSE-M
d3NMFSA = d3-NMePFOSA
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 410-134910/1-A
Matrix: Water
Analysis Batch: 135725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 134910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluoroheptanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorooctanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorononanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorodecanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorotridecanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorotetradecanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorobutanesulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorohexanesulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorooctanesulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
NEtFOSAA	ND		3.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
NMeFOSAA	ND		2.0	0.60	ng/L		06/07/21 16:15	06/10/21 04:24	1
10:2 FTS	ND		5.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluoropentanesulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluoroheptanesulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorononanesulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorodecanesulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorododecanesulfonic acid (PFDoS)	ND		3.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorooctanesulfonamide	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorohexadecanoic acid	ND		3.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorooctadecanoic acid	ND		3.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorobutanoic acid	ND		5.0	2.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluoropentanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
NMeFOSE	ND		3.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
NMeFOSA	ND		3.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
NEtFOSE	ND		3.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
NEtFOSA	ND		5.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluorododecanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
Perfluoroundecanoic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
4:2 Fluorotelomer sulfonic acid	ND		2.0	0.50	ng/L		06/07/21 16:15	06/10/21 04:24	1
6:2 Fluorotelomer sulfonic acid	ND		5.0	2.0	ng/L		06/07/21 16:15	06/10/21 04:24	1
8:2 Fluorotelomer sulfonic acid	ND		3.0	1.0	ng/L		06/07/21 16:15	06/10/21 04:24	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*100*		*20 - 187*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
M2-8:2 FTS	*102*		*34 - 182*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
M2-6:2 FTS	*107*		*29 - 189*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C5 PFHxA	*92*		*31 - 142*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C4 PFHpA	*94*		*30 - 144*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C8 PFOA	*96*		*49 - 127*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C9 PFNA	*98*		*47 - 136*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C6 PFDA	*93*		*47 - 128*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C7 PFUnA	*94*		*40 - 135*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C2-PFDoDA	*91*		*28 - 136*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C2 PFTeDA	*93*		*10 - 144*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C3 PFBS	*109*		*19 - 178*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C3 PFHxS	*92*		*32 - 145*	*06/07/21 16:15*	*06/10/21 04:24*	*1*
13C8 PFOS	*95*		*49 - 126*	*06/07/21 16:15*	*06/10/21 04:24*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 410-134910/1-A
Matrix: Water
Analysis Batch: 135725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 134910

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	111		32 - 151	06/07/21 16:15	06/10/21 04:24	1
d5-NEtFOSAA	114		37 - 164	06/07/21 16:15	06/10/21 04:24	1
13C8 FOSA	57		10 - 143	06/07/21 16:15	06/10/21 04:24	1
13C4 PFBA	94		41 - 132	06/07/21 16:15	06/10/21 04:24	1
13C5 PFPeA	96		33 - 155	06/07/21 16:15	06/10/21 04:24	1
d7-N-MeFOSE-M	39		10 - 143	06/07/21 16:15	06/10/21 04:24	1
d3-NMePFOSA	11		10 - 107	06/07/21 16:15	06/10/21 04:24	1
d9-N-EtFOSE-M	41		10 - 142	06/07/21 16:15	06/10/21 04:24	1
d5-NEtPFOSA	10		10 - 108	06/07/21 16:15	06/10/21 04:24	1

Lab Sample ID: LCS 410-134910/2-A
Matrix: Water
Analysis Batch: 135725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 134910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid	25.6	27.2		ng/L		106	66 - 137
Perfluoroheptanoic acid	25.6	26.8		ng/L		105	66 - 141
Perfluorooctanoic acid	25.6	27.2		ng/L		106	65 - 136
Perfluorononanoic acid	25.6	27.2		ng/L		106	65 - 140
Perfluorodecanoic acid	25.6	27.5		ng/L		107	63 - 137
Perfluorotridecanoic acid	25.6	28.4		ng/L		111	58 - 146
Perfluorotetradecanoic acid	25.6	27.9		ng/L		109	64 - 141
Perfluorobutanesulfonic acid	22.7	21.4		ng/L		94	65 - 132
Perfluorohexanesulfonic acid	23.3	23.4		ng/L		100	60 - 128
Perfluorooctanesulfonic acid	23.7	23.8		ng/L		100	51 - 126
NEtFOSAA	25.6	25.3		ng/L		99	54 - 134
NMeFOSAA	25.6	25.2		ng/L		98	58 - 143
10:2 FTS	24.7	25.4		ng/L		103	44 - 141
Perfluoropentanesulfonic acid	24.0	22.8		ng/L		95	71 - 136
Perfluoroheptanesulfonic acid	24.4	25.1		ng/L		103	67 - 135
Perfluorononanesulfonic acid	24.6	26.3		ng/L		107	67 - 137
Perfluorodecanesulfonic acid	24.7	24.9		ng/L		101	61 - 134
Perfluorododecanesulfonic acid (PFDoS)	24.8	26.6		ng/L		108	54 - 136
Perfluorooctanesulfonamide	25.6	29.3		ng/L		114	55 - 130
Perfluorohexadecanoic acid	25.6	28.7		ng/L		112	52 - 149
Perfluorooctadecanoic acid	25.6	27.2		ng/L		106	32 - 167
Perfluorobutanoic acid	25.6	26.1		ng/L		102	62 - 156
Perfluoropentanoic acid	25.6	26.9		ng/L		105	72 - 139
NMeFOSE	25.6	23.0		ng/L		90	52 - 131
NMeFOSA	25.6	23.6		ng/L		92	49 - 141
NEtFOSE	25.6	24.4		ng/L		95	49 - 128
NEtFOSA	25.6	23.1		ng/L		90	50 - 136
Perfluorododecanoic acid	25.6	26.9		ng/L		105	63 - 140
Perfluoroundecanoic acid	25.6	26.1		ng/L		102	62 - 138
4:2 Fluorotelomer sulfonic acid	23.9	27.4		ng/L		114	59 - 130
6:2 Fluorotelomer sulfonic acid	24.3	26.2		ng/L		108	57 - 137
8:2 Fluorotelomer sulfonic acid	24.5	25.6		ng/L		104	56 - 140

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-4:2 FTS	99		20 - 187
M2-8:2 FTS	101		34 - 182
M2-6:2 FTS	117		29 - 189
13C5 PFHxA	94		31 - 142
13C4 PFHpA	98		30 - 144
13C8 PFOA	98		49 - 127
13C9 PFNA	97		47 - 136
13C6 PFDA	94		47 - 128
13C7 PFUnA	96		40 - 135
13C2-PFDoDA	93		28 - 136
13C2 PFTeDA	91		10 - 144
13C3 PFBS	109		19 - 178
13C3 PFHxS	95		32 - 145
13C8 PFOS	96		49 - 126
d3-NMeFOSAA	111		32 - 151
d5-NEtFOSAA	118		37 - 164
13C8 FOSA	63		10 - 143
13C4 PFBA	94		41 - 132
13C5 PFPeA	96		33 - 155
d7-N-MeFOSE-M	42		10 - 143
d3-NMePFOSA	12		10 - 107
d9-N-EtFOSE-M	42		10 - 142
d5-NEtPFOSA	12		10 - 108

Lab Sample ID: LCSD 410-134910/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 135725 — **Prep Batch: 134910**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid	25.6	27.0		ng/L		106	66 - 137	1	30
Perfluoroheptanoic acid	25.6	27.6		ng/L		108	66 - 141	3	30
Perfluorooctanoic acid	25.6	26.0		ng/L		102	65 - 136	4	30
Perfluorononanoic acid	25.6	27.0		ng/L		106	65 - 140	1	30
Perfluorodecanoic acid	25.6	26.7		ng/L		104	63 - 137	3	30
Perfluorotridecanoic acid	25.6	28.7		ng/L		112	58 - 146	1	30
Perfluorotetradecanoic acid	25.6	27.2		ng/L		106	64 - 141	3	30
Perfluorobutanesulfonic acid	22.7	21.5		ng/L		95	65 - 132	1	30
Perfluorohexanesulfonic acid	23.3	23.9		ng/L		102	60 - 128	2	30
Perfluorooctanesulfonic acid	23.7	24.5		ng/L		103	51 - 126	3	30
NEtFOSAA	25.6	23.2		ng/L		91	54 - 134	9	30
NMeFOSAA	25.6	25.3		ng/L		99	58 - 143	0	30
10:2 FTS	24.7	22.0		ng/L		89	44 - 141	14	30
Perfluoropentanesulfonic acid	24.0	23.3		ng/L		97	71 - 136	2	30
Perfluoroheptanesulfonic acid	24.4	24.9		ng/L		102	67 - 135	1	30
Perfluorononanesulfonic acid	24.6	26.3		ng/L		107	67 - 137	0	30
Perfluorodecanesulfonic acid	24.7	24.7		ng/L		100	61 - 134	1	30
Perfluorododecanesulfonic acid (PFDoS)	24.8	26.7		ng/L		108	54 - 136	0	30
Perfluorooctanesulfonamide	25.6	29.1		ng/L		114	55 - 130	1	30
Perfluorohexadecanoic acid	25.6	29.1		ng/L		114	52 - 149	1	30
Perfluorooctadecanoic acid	25.6	27.3		ng/L		106	32 - 167	0	30
Perfluorobutanoic acid	25.6	26.1		ng/L		102	62 - 156	0	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 410-134910/3-A
Matrix: Water
Analysis Batch: 135725

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 134910

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoropentanoic acid			25.6	26.6		ng/L		104	72 - 139	1	30
NMeFOSE			25.6	24.8		ng/L		97	52 - 131	8	30
NMeFOSA			25.6	25.7		ng/L		100	49 - 141	8	30
NEtFOSE			25.6	26.1		ng/L		102	49 - 128	7	30
NEtFOSA			25.6	22.1		ng/L		86	50 - 136	4	30
Perfluorododecanoic acid			25.6	28.0		ng/L		109	63 - 140	4	30
Perfluoroundecanoic acid			25.6	26.6		ng/L		104	62 - 138	2	30
4:2 Fluorotelomer sulfonic acid			23.9	27.0		ng/L		113	59 - 130	1	30
6:2 Fluorotelomer sulfonic acid			24.3	27.5		ng/L		113	57 - 137	5	30
8:2 Fluorotelomer sulfonic acid			24.5	22.8		ng/L		93	56 - 140	11	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-4:2 FTS	*98*		*20 - 187*
M2-8:2 FTS	*116*		*34 - 182*
M2-6:2 FTS	*108*		*29 - 189*
13C5 PFHxA	*93*		*31 - 142*
13C4 PFHpA	*93*		*30 - 144*
13C8 PFOA	*97*		*49 - 127*
13C9 PFNA	*95*		*47 - 136*
13C6 PFDA	*97*		*47 - 128*
13C7 PFUnA	*93*		*40 - 135*
13C2-PFDoDA	*91*		*28 - 136*
13C2 PFTeDA	*90*		*10 - 144*
13C3 PFBS	*108*		*19 - 178*
13C3 PFHxS	*93*		*32 - 145*
13C8 PFOS	*95*		*49 - 126*
d3-NMeFOSAA	*110*		*32 - 151*
d5-NEtFOSAA	*122*		*37 - 164*
13C8 FOSA	*60*		*10 - 143*
13C4 PFBA	*92*		*41 - 132*
13C5 PFPeA	*94*		*33 - 155*
d7-N-MeFOSE-M	*41*		*10 - 143*
d3-NMePFOSA	*10*		*10 - 107*
d9-N-EtFOSE-M	*39*		*10 - 142*
d5-NEtPFOSA	*10*		*10 - 108*

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018

Lab Sample ID: MB 410-135098/1-A
Matrix: Drinking Water
Analysis Batch: 136089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135098

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NEtFOSAA	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
NMeFOSAA	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorobutanesulfonic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorodecanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorododecanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluoroheptanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018 (Continued)

Lab Sample ID: MB 410-135098/1-A
Matrix: Drinking Water
Analysis Batch: 136089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 135098

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorohexanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorononanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorooctanesulfonic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorooctanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorotetradecanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluorotridecanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1
Perfluoroundecanoic acid	ND		2.0	0.50	ng/L		06/08/21 06:55	06/10/21 04:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*87*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:08*	*1*
13C2 PFHxA	*93*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:08*	*1*
13C3 HFPO-DA	*86*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:08*	*1*
d5-NEtFOSAA	*91*		*70 - 130*	*06/08/21 06:55*	*06/10/21 04:08*	*1*

Lab Sample ID: LCS 410-135098/2-A
Matrix: Drinking Water
Analysis Batch: 136089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 135098

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
NEtFOSAA	25.6	18.7		ng/L		73	70 - 130
NMeFOSAA	25.6	20.4		ng/L		80	70 - 130
Perfluorobutanesulfonic acid	22.7	21.3		ng/L		94	70 - 130
Perfluorodecanoic acid	25.6	22.0		ng/L		86	70 - 130
Perfluorododecanoic acid	25.6	20.5		ng/L		80	70 - 130
Perfluoroheptanoic acid	25.6	21.8		ng/L		85	70 - 130
Perfluorohexanesulfonic acid	23.3	21.2		ng/L		91	70 - 130
Perfluorohexanoic acid	25.6	22.8		ng/L		89	70 - 130
Perfluorononanoic acid	25.6	22.3		ng/L		87	70 - 130
Perfluorooctanesulfonic acid	23.7	21.2		ng/L		89	70 - 130
Perfluorooctanoic acid	25.6	22.8		ng/L		89	70 - 130
Perfluorotetradecanoic acid	25.6	21.0		ng/L		82	70 - 130
Perfluorotridecanoic acid	25.6	21.5		ng/L		84	70 - 130
Perfluoroundecanoic acid	25.6	21.0		ng/L		82	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C2 PFDA	*95*		*70 - 130*
13C2 PFHxA	*96*		*70 - 130*
13C3 HFPO-DA	*91*		*70 - 130*
d5-NEtFOSAA	*89*		*70 - 130*

Lab Sample ID: LCSD 410-135098/3-A
Matrix: Drinking Water
Analysis Batch: 136089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 135098

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
NEtFOSAA	25.6	19.6		ng/L		77	70 - 130	5	30
NMeFOSAA	25.6	21.0		ng/L		82	70 - 130	3	30

Method: EPA 537.1 - EPA 537.1, Ver 1.0 Nov 2018 (Continued)

Lab Sample ID: LCSD 410-135098/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Drinking Water — **Prep Type: Total/NA**
Analysis Batch: 136089 — **Prep Batch: 135098**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid			22.7	21.7		ng/L		96	70 - 130	2	30
Perfluorodecanoic acid			25.6	23.1		ng/L		90	70 - 130	5	30
Perfluorododecanoic acid			25.6	23.1		ng/L		90	70 - 130	12	30
Perfluoroheptanoic acid			25.6	24.6		ng/L		96	70 - 130	12	30
Perfluorohexanesulfonic acid			23.3	21.4		ng/L		92	70 - 130	1	30
Perfluorohexanoic acid			25.6	24.5		ng/L		96	70 - 130	8	30
Perfluorononanoic acid			25.6	23.5		ng/L		92	70 - 130	5	30
Perfluorooctanesulfonic acid			23.7	21.6		ng/L		91	70 - 130	2	30
Perfluorooctanoic acid			25.6	24.6		ng/L		96	70 - 130	8	30
Perfluorotetradecanoic acid			25.6	23.1		ng/L		90	70 - 130	9	30
Perfluorotridecanoic acid			25.6	23.1		ng/L		90	70 - 130	7	30
Perfluoroundecanoic acid			25.6	23.2		ng/L		91	70 - 130	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C2 PFDA	*96*		*70 - 130*
13C2 PFHxA	*104*		*70 - 130*
13C3 HFPO-DA	*99*		*70 - 130*
d5-NEtFOSAA	*88*		*70 - 130*

Method: SW846 6850 - Perchlorate by LC/MS or LC/MS/MS

Lab Sample ID: MB 410-138310/1-A — **Client Sample ID: Method Blank**
Matrix: Drinking Water — **Prep Type: Total/NA**
Analysis Batch: 138987 — **Prep Batch: 138310**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.23	ug/L		06/16/21 05:58	06/17/21 14:54	1

Lab Sample ID: LCS 410-138310/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Drinking Water — **Prep Type: Total/NA**
Analysis Batch: 138987 — **Prep Batch: 138310**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			1.00	0.952	J	ug/L		95	80 - 120		

Lab Sample ID: LCSD 410-138310/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Drinking Water — **Prep Type: Total/NA**
Analysis Batch: 138987 — **Prep Batch: 138310**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate			1.00	0.961	J	ug/L		96	80 - 120	1	15

QC Association Summary

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

LCMS

Prep Batch: 134910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-42266-3	Raw 300	Total/NA	Water	3535	
410-42266-4	EP 101	Total/NA	Water	3535	
MB 410-134910/1-A	Method Blank	Total/NA	Water	3535	
LCS 410-134910/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 410-134910/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Prep Batch: 135098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-42266-2	Raw 300	Total/NA	Drinking Water	537.1 DW Prep	
410-42266-6	EP 101	Total/NA	Drinking Water	537.1 DW Prep	
410-42266-7	Field Blank (300)	Total/NA	Drinking Water	537.1 DW Prep	
410-42266-8	Field Blank (101)	Total/NA	Drinking Water	537.1 DW Prep	
MB 410-135098/1-A	Method Blank	Total/NA	Drinking Water	537.1 DW Prep	
LCS 410-135098/2-A	Lab Control Sample	Total/NA	Drinking Water	537.1 DW Prep	
LCSD 410-135098/3-A	Lab Control Sample Dup	Total/NA	Drinking Water	537.1 DW Prep	

Analysis Batch: 135725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-42266-3	Raw 300	Total/NA	Water	537 (modified)	134910
410-42266-4	EP 101	Total/NA	Water	537 (modified)	134910
MB 410-134910/1-A	Method Blank	Total/NA	Water	537 (modified)	134910
LCS 410-134910/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	134910
LCSD 410-134910/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	134910

Analysis Batch: 136089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-42266-2	Raw 300	Total/NA	Drinking Water	EPA 537.1	135098
410-42266-6	EP 101	Total/NA	Drinking Water	EPA 537.1	135098
410-42266-7	Field Blank (300)	Total/NA	Drinking Water	EPA 537.1	135098
410-42266-8	Field Blank (101)	Total/NA	Drinking Water	EPA 537.1	135098
MB 410-135098/1-A	Method Blank	Total/NA	Drinking Water	EPA 537.1	135098
LCS 410-135098/2-A	Lab Control Sample	Total/NA	Drinking Water	EPA 537.1	135098
LCSD 410-135098/3-A	Lab Control Sample Dup	Total/NA	Drinking Water	EPA 537.1	135098

Prep Batch: 138310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-42266-1	Raw 300	Total/NA	Drinking Water	6850 Prep	
410-42266-5	EP 101	Total/NA	Drinking Water	6850 Prep	
MB 410-138310/1-A	Method Blank	Total/NA	Drinking Water	6850 Prep	
LCS 410-138310/2-A	Lab Control Sample	Total/NA	Drinking Water	6850 Prep	
LCSD 410-138310/3-A	Lab Control Sample Dup	Total/NA	Drinking Water	6850 Prep	

Analysis Batch: 138987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-42266-1	Raw 300	Total/NA	Drinking Water	SW846 6850	138310
410-42266-5	EP 101	Total/NA	Drinking Water	SW846 6850	138310
MB 410-138310/1-A	Method Blank	Total/NA	Drinking Water	SW846 6850	138310
LCS 410-138310/2-A	Lab Control Sample	Total/NA	Drinking Water	SW846 6850	138310
LCSD 410-138310/3-A	Lab Control Sample Dup	Total/NA	Drinking Water	SW846 6850	138310

Lab Chronicle

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Client Sample ID: Raw 300 — Lab Sample ID: 410-42266-1

Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	6850 Prep			138310	06/16/21 05:58	VK3G	ELLE
Total/NA	Analysis	SW846 6850		1	138987	06/17/21 15:31	UAD3	ELLE

Client Sample ID: Raw 300 — Lab Sample ID: 410-42266-2

Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW Prep			135098	06/08/21 06:55	RDL8	ELLE
Total/NA	Analysis	EPA 537.1		1	136089	06/10/21 04:54	DCS9	ELLE

Client Sample ID: Raw 300 — Lab Sample ID: 410-42266-3

Date Collected: 06/01/21 07:50
Date Received: 06/04/21 08:18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			134910	06/07/21 16:15	D5VP	ELLE
Total/NA	Analysis	537 (modified)		1	135725	06/10/21 05:42	JVK6	ELLE

Client Sample ID: EP 101 — Lab Sample ID: 410-42266-4

Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			134910	06/07/21 16:15	D5VP	ELLE
Total/NA	Analysis	537 (modified)		1	135725	06/10/21 05:53	JVK6	ELLE

Client Sample ID: EP 101 — Lab Sample ID: 410-42266-5

Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	6850 Prep			138310	06/16/21 05:58	VK3G	ELLE
Total/NA	Analysis	SW846 6850		1	138987	06/17/21 15:40	UAD3	ELLE

Client Sample ID: EP 101 — Lab Sample ID: 410-42266-6

Date Collected: 06/01/21 08:14
Date Received: 06/04/21 08:18
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW Prep			135098	06/08/21 06:55	RDL8	ELLE
Total/NA	Analysis	EPA 537.1		1	136089	06/10/21 05:06	DCS9	ELLE

Lab Chronicle

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Client Sample ID: Field Blank (300)

Lab Sample ID: 410-42266-7
Date Collected: 06/01/21 07:50
Matrix: Drinking Water
Date Received: 06/04/21 08:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW Prep			135098	06/08/21 06:55	RDL8	ELLE
Total/NA	Analysis	EPA 537.1		1	136089	06/10/21 05:17	DCS9	ELLE

Client Sample ID: Field Blank (101)

Lab Sample ID: 410-42266-8
Date Collected: 06/01/21 08:14
Matrix: Drinking Water
Date Received: 06/04/21 08:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537.1 DW Prep			135098	06/08/21 06:55	RDL8	ELLE
Total/NA	Analysis	EPA 537.1		1	136089	06/10/21 05:29	DCS9	ELLE

Laboratory References:

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

Accreditation/Certification Summary

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

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

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

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.

Analysis Method	Prep Method	Matrix	Analyte
SW846 6850	6850 Prep	Drinking Water	Perchlorate

Method Summary

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	ELLE
EPA 537.1	EPA 537.1, Ver 1.0 Nov 2018	EPA	ELLE
SW846 6850	Perchlorate by LC/MS or LC/MS/MS	SW846	ELLE
3535	Solid-Phase Extraction (SPE)	SW846	ELLE
537.1 DW Prep	Extraction of Perfluorinated Alkyl Acids	EPA	ELLE
6850 Prep	Perchlorate Water Prep	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: Pittsburgh Water and Sewer Authority
Project/Site: PFAS & Perchlorate

Job ID: 410-42266-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-42266-1	Raw 300	Drinking Water	06/01/21 07:50	06/04/21 08:18	
410-42266-2	Raw 300	Drinking Water	06/01/21 07:50	06/04/21 08:18	
410-42266-3	Raw 300	Water	06/01/21 07:50	06/04/21 08:18	
410-42266-4	EP 101	Water	06/01/21 08:14	06/04/21 08:18	
410-42266-5	EP 101	Drinking Water	06/01/21 08:14	06/04/21 08:18	
410-42266-6	EP 101	Drinking Water	06/01/21 08:14	06/04/21 08:18	
410-42266-7	Field Blank (300)	Drinking Water	06/01/21 07:50	06/04/21 08:18	
410-42266-8	Field Blank (101)	Drinking Water	06/01/21 08:14	06/04/21 08:18	

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record

eurofins Environment Testing America

410-42266 Chain of Custody

Client Information	Sampler: Robert Gomez	Lab PM: Gordon, Stephen J	COC No: 410-25346-7775.1
Client Contact: Linda Leopold	Phone:	E-Mail: Stephen.Gordon@eurofinset.com	State of Origin:
Company: Pittsburgh Water and Sewer Authority	PWSID:		Page: Page 1 of 1
Address: 900 Freeport Road	Due Date Requested:		Job #
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238	Compliance Project: Δ Yes Δ No		
Phone:	PO #: Purchase Order not required		
Email:	WO #:		
Project Name: PFAS & Perchlorate	Project #: 41004440		
Site:	SSOW#:		

Analysis Requested

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
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, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Perfluorinated compounds, Total (No)	537.1_DW - PFAS DW 14 compounds	6850 - Perchlorate by LC/MS or LC/MS/MS	PFC_IDA - PFAS 32 Compounds	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N	N	X	
Raw 300	6/1/21	0750	G	Drinking Water			3			
Raw 300	6/1/21	0750	G	Drinking Water		2				
Raw 300	6/1/21	0750	G	Water				2		
EP 101	6/1/21	0814	G	Water				2		
EP 101	6/1/21	0814	G	Drinking Water			3			
EP 101	6/1/21	0814	G	Drinking Water		2				
Field Blank (300)	6/1/21	0750	G	DW		2				
Field Blank (101)	6/1/21	0814	G	DW		2				

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Edwin Hernandez	5/21/21 1525				
Robert Gomez	6/1/21 0850	PWSA			
			[signature]	6/4/21 0818	EME

Custody Seals Intact	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks
Δ Yes Δ No		1.8

Ver: 11.01.2020

6/21/2021

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # ____________ Group # ____________

410-42364 Chain of Custody

Client: Prolacta Bioscience	
Project Name/#:	Site ID #:
Project Manager: Dana Kauffman	P.O. #:
Sampler:	PWSID #:
Phone #: 626-626-9565	Quote #:
State where samples were collected: ____	For Compliance: Yes ☒ No ☐

Matrix: Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ NPDES ☐ Ground ☐ Surface ☐ | Other:

Preservation and Filtration Codes

For Lab Use Only

SF #: ____________

SCR #: ____________

Preservation Codes

H = HCl T = Thiosulfate

N = HNO_3 B = NaOH

S = H_2SO_4 P = H_3PO_4

F = Field Filtered O = Other

Sample Identification	Collection Date	Collection Time	Grab	Composite	Soil	Water	Other:	Total # of Containers	Remarks
1. Surgifort, Lot: CCLF-170002									dioxin test
2. Prolact RTF 24, Lot: CF24-180001									dioxin test
3. Prolact RTF 26, Lot: CR261801USA									dioxin test
4. Prolact RTF 28, Lot: CR281801USA									dioxin test

Turnaround Time Requested (TAT) (please check): Standard ☒ Rush ☐

(Rush TAT is subject to laboratory approval and surcharges.)

Date results are needed:

Rush results requested by (please check): E-Mail ☐ Phone ☐

E-mail Address:

Phone:

Data Package Options (please check if required)

Type I (Validation/non-CLP)	☐	MA MCP	☐
Type III (Reduced non-CLP)	☐	CT RCP	☐
Type VI (Raw Data Only)	☐	TX TRRP-13	☐
NJ DKQP	☐	NYSDEC Category	☐ A or ☐ B

EDD Required? Yes ☐ No ☐ If yes, format: ____________

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time 1224
Relinquished by:	Date	Time	Received by:	Date 6/4/21	Time ~~1224~~

Relinquished by Commercial Carrier:

UPS ______ FedEx ______ Other ______

Temperature upon receipt -34.2 °C [illegible] °C CW14

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7045 0717

DAB

Login Sample Receipt Checklist

Client: Pittsburgh Water and Sewer Authority

Job Number: 410-42266-1

Login Number: 42266
List Number: 1
Creator: Catchings, Donovan

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	