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ANALYTICAL REPORT

Eurofins Michigan
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Laboratory Job ID: 190-28159-1
Client Project/Site: City of Port Huron PFAS - Biosolids

For:
City of Port Huron
100 Merchant Street
Port Huron, Michigan 48060

Attn: Doug Westbrook

Sue Schafer

Authorized for release by:
3/16/2022 2:05:04 PM

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Sample Summary

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
190-28159-1	POTW Biosolids 11-22	Solid	03/02/22 09:40	03/03/22 12:40

Case Narrative

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

Job ID: 190-28159-1

Laboratory: Eurofins Michigan

Narrative

Job Narrative
190-28159-1

Comments
The PFC_IDA Perfluorinated Hydrocarbons analysis was performed at the Eurofins Environment Testing, Sacramento laboratory.

Receipt
The sample was received on 3/3/2022 12:40 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.7º C.

LCMS
Method 537 (modified): Results for samples POTW Biosolids 11-22 (190-28159-1), (190-28159-A-1-C MS) and (190-28159-A-1-D MSD) were reported from the analysis of a diluted extract due to matrix interference of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following samples: POTW Biosolids 11-22 (190-28159-1), (190-28159-A-1-C MS) and (190-28159-A-1-D MSD). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: (190-28159-A-1-C MS) and (190-28159-A-1-D MSD). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s).

Method 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Perfluorotridecanoic acid (PFTriA)preparation batch 320-570855 and analytical batch 320-571363 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was below the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte.
POTW Biosolids 11-22 (190-28159-1), (190-28159-A-1-C MS) and (190-28159-A-1-D MSD)

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

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

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

Client: City of Port Huron
Project/Site: City of Port Huron PFAS - Biosolids

Job ID: 190-28159-1

Client Sample ID: POTW Biosolids 11-22

Date Collected: 03/02/22 09:40
Date Received: 03/03/22 12:40

Lab Sample ID: 190-28159-1

Matrix: Solid
Percent Solids: 8.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
F-53B Major	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
F-53B Minor	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
4:2 FTS	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
6:2 FTS	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
8:2 FTS	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
HFPO-DA (GenX)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorobutanesulfonic acid (PFBS)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorodecanesulfonic acid (PFDS)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorodecanoic acid (PFDA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorododecanoic acid (PFDoA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluoroheptanoic acid (PFHpA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorohexanesulfonic acid (PFHxS)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorohexanoic acid (PFHxA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorononanesulfonic acid (PFNS)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorononanoic acid (PFNA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorooctanesulfonamide (FOSA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorooctanesulfonic acid (PFOS)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorooctanoic acid (PFOA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluoropentanesulfonic acid (PFPeS)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluoropentanoic acid (PFPeA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorotetradecanoic acid (PFTeA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluorotridecanoic acid (PFTriA)	<9.1	F1	9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1
Perfluoroundecanoic acid (PFUnA)	<9.1		9.1		ug/Kg	☼	03/07/22 11:27	03/09/22 00:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*94*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C3 HFPO-DA	*83*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C3 PFBS	*80*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C2 PFDA	*97*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C2 PFDoA	*73*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C4 PFHpA	*89*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C2 PFHxA	*86*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C5 PFNA	*100*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C4 PFOA	*94*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C4 PFOS	*91*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C5 PFPeA	*51*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C2 PFTeDA	*24*	*5-	*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
13C2 PFUnA	*96*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
d5-NEtFOSAA	*109*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
d3-NMeFOSAA	*95*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
M2-4:2 FTS	*105*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
M2-6:2 FTS	*137*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*

Client Sample ID: POTW Biosolids 11-22
Lab Sample ID: 190-28159-1

Date Collected: 03/02/22 09:40
Matrix: Solid

Date Received: 03/03/22 12:40
Percent Solids: 8.9

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*159*	*5+	*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*
18O2 PFHxS	*82*		*25 - 150*	*03/07/22 11:27*	*03/09/22 00:26*	*1*

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<91		91	ug/Kg	☼	03/07/22 11:27	03/10/22 12:30	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*16*	*5-	*25 - 150*	*03/07/22 11:27*	*03/10/22 12:30*	*10*

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**91.1**		0.1	%			03/09/22 13:32	1
Percent Solids	**8.9**		0.1	%			03/09/22 13:32	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-570855/1-A
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 570855

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
F-53B Major	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
F-53B Minor	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
4:2 FTS	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
6:2 FTS	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
8:2 FTS	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
HFPO-DA (GenX)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorobutanoic acid (PFBA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorodecanoic acid (PFDA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorohexanoic acid (PFHxA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorononanoic acid (PFNA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorooctanesulfonic acid (PFOS)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20		ug/Kg		03/07/22 11:27	03/08/22 22:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*95*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C3 HFPO-DA	*91*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C4 PFBA	*70*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C3 PFBS	*101*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C2 PFDA	*91*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C2 PFDoA	*88*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C4 PFHpA	*96*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C2 PFHxA	*93*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C5 PFNA	*95*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C4 PFOA	*97*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C4 PFOS	*100*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C5 PFPeA	*91*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C2 PFTeDA	*87*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
13C2 PFUnA	*89*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*
d5-NEtFOSAA	*96*		*25 - 150*	*03/07/22 11:27*	*03/08/22 22:34*	*1*

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

Lab Sample ID: MB 320-570855/1-A
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 570855

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	93		25 - 150	03/07/22 11:27	03/08/22 22:34	1
M2-4:2 FTS	84		25 - 150	03/07/22 11:27	03/08/22 22:34	1
M2-6:2 FTS	83		25 - 150	03/07/22 11:27	03/08/22 22:34	1
M2-8:2 FTS	81		25 - 150	03/07/22 11:27	03/08/22 22:34	1
18O2 PFHxS	90		25 - 150	03/07/22 11:27	03/08/22 22:34	1

Lab Sample ID: LCS 320-570855/2-A
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 570855

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.74		ug/Kg		92	79 - 139
F-53B Major	1.86	1.65		ug/Kg		88	74 - 134
F-53B Minor	1.88	1.63		ug/Kg		86	66 - 136
4:2 FTS	1.87	1.96		ug/Kg		105	68 - 143
6:2 FTS	1.90	1.83		ug/Kg		97	73 - 139
8:2 FTS	1.92	1.84		ug/Kg		96	75 - 135
HFPO-DA (GenX)	2.00	1.92		ug/Kg		96	53 - 158
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.86		ug/Kg		93	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.92		ug/Kg		96	72 - 132
Perfluorobutanesulfonic acid (PFBS)	1.77	1.55		ug/Kg		88	69 - 129
Perfluorobutanoic acid (PFBA)	2.00	1.83		ug/Kg		91	76 - 136
Perfluorodecanesulfonic acid (PFDS)	1.93	1.82		ug/Kg		95	71 - 131
Perfluorodecanoic acid (PFDA)	2.00	1.88		ug/Kg		94	72 - 132
Perfluorododecanoic acid (PFDoA)	2.00	1.93		ug/Kg		96	71 - 131
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.65		ug/Kg		87	76 - 136
Perfluoroheptanoic acid (PFHpA)	2.00	1.97		ug/Kg		98	71 - 131
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.77		ug/Kg		97	62 - 122
Perfluorohexanoic acid (PFHxA)	2.00	1.82		ug/Kg		91	71 - 131
Perfluorononanesulfonic acid (PFNS)	1.92	1.69		ug/Kg		88	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.00		ug/Kg		100	73 - 133
Perfluorooctanesulfonamide (FOSA)	2.00	2.10		ug/Kg		105	77 - 137
Perfluorooctanesulfonic acid (PFOS)	1.86	1.77		ug/Kg		96	68 - 141
Perfluorooctanoic acid (PFOA)	2.00	1.99		ug/Kg		99	72 - 132
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.60		ug/Kg		86	66 - 126
Perfluoropentanoic acid (PFPeA)	2.00	1.96		ug/Kg		98	69 - 129
Perfluorotetradecanoic acid (PFTeA)	2.00	2.00		ug/Kg		100	67 - 127
Perfluorotridecanoic acid (PFTriA)	2.00	2.05		ug/Kg		103	71 - 131

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

Lab Sample ID: LCS 320-570855/2-A
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 570855

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluoroundecanoic acid (PFUnA)			2.00	1.89		ug/Kg		95	66 - 126		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C8 FOSA	*97*		*25 - 150*
13C3 HFPO-DA	*94*		*25 - 150*
13C4 PFBA	*68*		*25 - 150*
13C3 PFBS	*105*		*25 - 150*
13C2 PFDA	*92*		*25 - 150*
13C2 PFDoA	*88*		*25 - 150*
13C4 PFHpA	*95*		*25 - 150*
13C2 PFHxA	*98*		*25 - 150*
13C5 PFNA	*93*		*25 - 150*
13C4 PFOA	*93*		*25 - 150*
13C4 PFOS	*103*		*25 - 150*
13C5 PFPeA	*93*		*25 - 150*
13C2 PFTeDA	*90*		*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
d5-NEtFOSAA	*99*		*25 - 150*
d3-NMeFOSAA	*87*		*25 - 150*
M2-4:2 FTS	*82*		*25 - 150*
M2-6:2 FTS	*86*		*25 - 150*
M2-8:2 FTS	*86*		*25 - 150*
18O2 PFHxS	*92*		*25 - 150*

Lab Sample ID: 190-28159-1 MS
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: POTW Biosolids 11-22
Prep Type: Total/NA
Prep Batch: 570855

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<9.1		94.1	87.5		ug/Kg	☼	93	79 - 139		
F-53B Major	<9.1		93.1	83.7		ug/Kg	☼	90	74 - 134		
F-53B Minor	<9.1		94.1	81.3		ug/Kg	☼	86	66 - 136		
4:2 FTS	<9.1		93.3	89.5		ug/Kg	☼	96	68 - 143		
6:2 FTS	<9.1		94.7	104		ug/Kg	☼	110	73 - 139		
8:2 FTS	<9.1		95.7	93.7		ug/Kg	☼	98	75 - 135		
HFPO-DA (GenX)	<9.1		99.9	100		ug/Kg	☼	100	53 - 158		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<9.1		99.9	96.6		ug/Kg	☼	92	72 - 132		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<9.1		99.9	99.0		ug/Kg	☼	97	72 - 132		
Perfluorobutanesulfonic acid (PFBS)	<9.1		88.3	82.3		ug/Kg	☼	93	69 - 129		
Perfluorodecanesulfonic acid (PFDS)	<9.1		96.3	93.3		ug/Kg	☼	97	71 - 131		
Perfluorodecanoic acid (PFDA)	<9.1		99.9	87.8		ug/Kg	☼	88	72 - 132		
Perfluorododecanoic acid (PFDoA)	<9.1		99.9	100		ug/Kg	☼	100	71 - 131		
Perfluoroheptanesulfonic Acid (PFHpS)	<9.1		95.1	88.4		ug/Kg	☼	93	76 - 136		

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

Lab Sample ID: 190-28159-1 MS
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: POTW Biosolids 11-22
Prep Type: Total/NA
Prep Batch: 570855

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanoic acid (PFHpA)	<9.1		99.9	86.8		ug/Kg	☼	87	71 - 131
Perfluorohexanesulfonic acid (PFHxS)	<9.1		90.9	91.5	I	ug/Kg	☼	101	62 - 122
Perfluorohexanoic acid (PFHxA)	<9.1		99.9	98.5		ug/Kg	☼	97	71 - 131
Perfluorononanesulfonic acid (PFNS)	<9.1		95.9	85.7		ug/Kg	☼	89	72 - 132
Perfluorononanoic acid (PFNA)	<9.1		99.9	96.5		ug/Kg	☼	97	73 - 133
Perfluorooctanesulfonamide (FOSA)	<9.1		99.9	99.9		ug/Kg	☼	100	77 - 137
Perfluorooctanesulfonic acid (PFOS)	<9.1		92.7	100	I	ug/Kg	☼	108	68 - 141
Perfluorooctanoic acid (PFOA)	<9.1		99.9	95.7		ug/Kg	☼	93	72 - 132
Perfluoropentanesulfonic acid (PFPeS)	<9.1		93.7	93.2		ug/Kg	☼	99	66 - 126
Perfluoropentanoic acid (PFPeA)	<9.1		99.9	89.7		ug/Kg	☼	90	69 - 129
Perfluorotetradecanoic acid (PFTeA)	<9.1		99.9	95.9		ug/Kg	☼	96	67 - 127
Perfluorotridecanoic acid (PFTriA)	<9.1	F1	99.9	56.6	F1	ug/Kg	☼	57	71 - 131
Perfluoroundecanoic acid (PFUnA)	<9.1		99.9	96.1		ug/Kg	☼	96	66 - 126

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C8 FOSA	*93*		*25 - 150*
13C3 HFPO-DA	*79*		*25 - 150*
13C3 PFBS	*78*		*25 - 150*
13C2 PFDA	*96*		*25 - 150*
13C2 PFDoA	*67*		*25 - 150*
13C4 PFHpA	*95*		*25 - 150*
13C2 PFHxA	*82*		*25 - 150*
13C5 PFNA	*95*		*25 - 150*
13C4 PFOA	*90*		*25 - 150*
13C4 PFOS	*91*		*25 - 150*
13C5 PFPeA	*49*		*25 - 150*
13C2 PFTeDA	*24*	*5-	*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
d5-NEtFOSAA	*106*		*25 - 150*
d3-NMeFOSAA	*95*		*25 - 150*
M2-4:2 FTS	*108*		*25 - 150*
M2-6:2 FTS	*126*		*25 - 150*
M2-8:2 FTS	*159*	*5+	*25 - 150*
18O2 PFHxS	*82*		*25 - 150*

Lab Sample ID: 190-28159-1 MSD
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: POTW Biosolids 11-22
Prep Type: Total/NA
Prep Batch: 570855

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<9.1		104	95.0		ug/Kg	☼	91	79 - 139	8	30
F-53B Major	<9.1		103	88.4		ug/Kg	☼	86	74 - 134	5	30

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

Lab Sample ID: 190-28159-1 MSD
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: POTW Biosolids 11-22
Prep Type: Total/NA
Prep Batch: 570855

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
F-53B Minor	<9.1		104	86.9		ug/Kg	☼	83	66 - 136	7	30
4:2 FTS	<9.1		104	94.5		ug/Kg	☼	91	68 - 143	5	30
6:2 FTS	<9.1		105	106		ug/Kg	☼	101	73 - 139	2	30
8:2 FTS	<9.1		106	91.5		ug/Kg	☼	86	75 - 135	2	30
HFPO-DA (GenX)	<9.1		111	103		ug/Kg	☼	93	53 - 158	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<9.1		111	107		ug/Kg	☼	93	72 - 132	10	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<9.1		111	104		ug/Kg	☼	92	72 - 132	5	30
Perfluorobutanesulfonic acid (PFBS)	<9.1		98.0	89.8		ug/Kg	☼	92	69 - 129	9	30
Perfluorodecanesulfonic acid (PFDS)	<9.1		107	98.6		ug/Kg	☼	92	71 - 131	6	30
Perfluorodecanoic acid (PFDA)	<9.1		111	109		ug/Kg	☼	98	72 - 132	21	30
Perfluorododecanoic acid (PFDoA)	<9.1		111	98.1		ug/Kg	☼	88	71 - 131	2	30
Perfluoroheptanesulfonic Acid (PFHpS)	<9.1		105	92.3		ug/Kg	☼	87	76 - 136	4	30
Perfluoroheptanoic acid (PFHpA)	<9.1		111	103		ug/Kg	☼	93	71 - 131	17	30
Perfluorohexanesulfonic acid (PFHxS)	<9.1		101	95.1	I	ug/Kg	☼	94	62 - 122	4	30
Perfluorohexanoic acid (PFHxA)	<9.1		111	100		ug/Kg	☼	89	71 - 131	2	30
Perfluorononanesulfonic acid (PFNS)	<9.1		106	93.1		ug/Kg	☼	88	72 - 132	8	30
Perfluorononanoic acid (PFNA)	<9.1		111	103		ug/Kg	☼	93	73 - 133	6	30
Perfluorooctanesulfonamide (FOSA)	<9.1		111	107		ug/Kg	☼	97	77 - 137	7	30
Perfluorooctanesulfonic acid (PFOS)	<9.1		103	109	I	ug/Kg	☼	106	68 - 141	8	30
Perfluorooctanoic acid (PFOA)	<9.1		111	106		ug/Kg	☼	93	72 - 132	10	30
Perfluoropentanesulfonic acid (PFPeS)	<9.1		104	99.9		ug/Kg	☼	96	66 - 126	7	30
Perfluoropentanoic acid (PFPeA)	<9.1		111	107		ug/Kg	☼	97	69 - 129	18	30
Perfluorotetradecanoic acid (PFTeA)	<9.1		111	109		ug/Kg	☼	98	67 - 127	13	30
Perfluorotridecanoic acid (PFTriA)	<9.1	F1	111	62.0	F1	ug/Kg	☼	56	71 - 131	9	30
Perfluoroundecanoic acid (PFUnA)	<9.1		111	106		ug/Kg	☼	96	66 - 126	10	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C8 FOSA	*96*		*25 - 150*
13C3 HFPO-DA	*84*		*25 - 150*
13C3 PFBS	*82*		*25 - 150*
13C2 PFDA	*95*		*25 - 150*
13C2 PFDoA	*76*		*25 - 150*
13C4 PFHpA	*92*		*25 - 150*
13C2 PFHxA	*86*		*25 - 150*
13C5 PFNA	*99*		*25 - 150*
13C4 PFOA	*93*		*25 - 150*
13C4 PFOS	*96*		*25 - 150*
13C5 PFPeA	*50*		*25 - 150*

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

Lab Sample ID: 190-28159-1 MSD
Matrix: Solid
Analysis Batch: 571363

Client Sample ID: POTW Biosolids 11-22
Prep Type: Total/NA
Prep Batch: 570855

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFTeDA	27		25 - 150
13C2 PFUnA	96		25 - 150
d5-NEtFOSAA	108		25 - 150
d3-NMeFOSAA	101		25 - 150
M2-4:2 FTS	112		25 - 150
M2-6:2 FTS	125		25 - 150
M2-8:2 FTS	164	*5+	25 - 150
18O2 PFHxS	89		25 - 150

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

Lab Sample ID: 190-28159-1 MS
Matrix: Solid
Analysis Batch: 571869

Client Sample ID: POTW Biosolids 11-22
Prep Type: Total/NA
Prep Batch: 570855

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA) - DL	<91		99.9	113		ug/Kg	☼	113	76 - 136

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA - DL	15	*5-	25 - 150

Lab Sample ID: 190-28159-1 MSD
Matrix: Solid
Analysis Batch: 571869

Client Sample ID: POTW Biosolids 11-22
Prep Type: Total/NA
Prep Batch: 570855

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA) - DL	<91		111	<110		ug/Kg	☼	94	76 - 136	8	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA - DL	13	*5-	25 - 150

Isotope Dilution Summary

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

Method: 537 (modified) - Fluorinated Alkyl Substances

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFOSA	HFPODA	PFBA	C3PFBS	PFDA	PFDoA	C4PFHA	PFHxA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
190-28159-1	POTW Biosolids 11-22	94	83		80	97	73	89	86
190-28159-1 - DL	POTW Biosolids 11-22			16 *5-					
190-28159-1 MS	POTW Biosolids 11-22	93	79		78	96	67	95	82
190-28159-1 MS - DL	POTW Biosolids 11-22			15 *5-					
190-28159-1 MSD	POTW Biosolids 11-22	96	84		82	95	76	92	86
190-28159-1 MSD - DL	POTW Biosolids 11-22			13 *5-					
LCS 320-570855/2-A	Lab Control Sample	97	94	68	105	92	88	95	98
MB 320-570855/1-A	Method Blank	95	91	70	101	91	88	96	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFNA	PFOA	PFOS	PFPeA	PFTDA	PFUnA	d5NEFOS	d3NMFOS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
190-28159-1	POTW Biosolids 11-22	100	94	91	51	24 *5-	96	109	95
190-28159-1 - DL	POTW Biosolids 11-22								
190-28159-1 MS	POTW Biosolids 11-22	95	90	91	49	24 *5-	94	106	95
190-28159-1 MS - DL	POTW Biosolids 11-22								
190-28159-1 MSD	POTW Biosolids 11-22	99	93	96	50	27	96	108	101
190-28159-1 MSD - DL	POTW Biosolids 11-22								
LCS 320-570855/2-A	Lab Control Sample	93	93	103	93	90	94	99	87
MB 320-570855/1-A	Method Blank	95	97	100	91	87	89	96	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	PFHxS				
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)				
190-28159-1	POTW Biosolids 11-22	105	137	159 *5+	82				
190-28159-1 - DL	POTW Biosolids 11-22								
190-28159-1 MS	POTW Biosolids 11-22	108	126	159 *5+	82				
190-28159-1 MS - DL	POTW Biosolids 11-22								
190-28159-1 MSD	POTW Biosolids 11-22	112	125	164 *5+	89				
190-28159-1 MSD - DL	POTW Biosolids 11-22								
LCS 320-570855/2-A	Lab Control Sample	82	86	86	92				
MB 320-570855/1-A	Method Blank	84	83	81	90				

Surrogate Legend

PFOSA = 13C8 FOSA
HFPODA = 13C3 HFPO-DA
PFBA = 13C4 PFBA
C3PFBS = 13C3 PFBS
PFDA = 13C2 PFDA
PFDoA = 13C2 PFDoA
C4PFHA = 13C4 PFHpA
PFHxA = 13C2 PFHxA
PFNA = 13C5 PFNA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFPeA = 13C5 PFPeA
PFTDA = 13C2 PFTeDA
PFUnA = 13C2 PFUnA
d5NEFOS = d5-NEtFOSAA
d3NMFOS = d3-NMeFOSAA
M242FTS = M2-4:2 FTS

Isotope Dilution Summary

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
PFHxS = 18O2 PFHxS

Definitions/Glossary

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
I	Value is EMPC (estimated maximum possible concentration).

Glossary

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

QC Association Summary

Client: City of Port Huron
Project/Site: City of Port Huron PFAS - Biosolids

Job ID: 190-28159-1

LCMS

Prep Batch: 570855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28159-1 - DL	POTW Biosolids 11-22	Total/NA	Solid	SHAKE	
190-28159-1	POTW Biosolids 11-22	Total/NA	Solid	SHAKE	
MB 320-570855/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-570855/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
190-28159-1 MS	POTW Biosolids 11-22	Total/NA	Solid	SHAKE	
190-28159-1 MS - DL	POTW Biosolids 11-22	Total/NA	Solid	SHAKE	
190-28159-1 MSD	POTW Biosolids 11-22	Total/NA	Solid	SHAKE	
190-28159-1 MSD - DL	POTW Biosolids 11-22	Total/NA	Solid	SHAKE	

Analysis Batch: 571363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28159-1	POTW Biosolids 11-22	Total/NA	Solid	537 (modified)	570855
MB 320-570855/1-A	Method Blank	Total/NA	Solid	537 (modified)	570855
LCS 320-570855/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	570855
190-28159-1 MS	POTW Biosolids 11-22	Total/NA	Solid	537 (modified)	570855
190-28159-1 MSD	POTW Biosolids 11-22	Total/NA	Solid	537 (modified)	570855

Analysis Batch: 571869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28159-1 - DL	POTW Biosolids 11-22	Total/NA	Solid	537 (modified)	570855
190-28159-1 MS - DL	POTW Biosolids 11-22	Total/NA	Solid	537 (modified)	570855
190-28159-1 MSD - DL	POTW Biosolids 11-22	Total/NA	Solid	537 (modified)	570855

General Chemistry

Analysis Batch: 571578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28159-1	POTW Biosolids 11-22	Total/NA	Solid	D 2216	

Lab Chronicle

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

Client Sample ID: POTW Biosolids 11-22
Lab Sample ID: 190-28159-1
Date Collected: 03/02/22 09:40
Matrix: Solid
Date Received: 03/03/22 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	571578	03/09/22 13:32	DJW	TAL SAC

Client Sample ID: POTW Biosolids 11-22
Lab Sample ID: 190-28159-1
Date Collected: 03/02/22 09:40
Matrix: Solid
Date Received: 03/03/22 12:40
Percent Solids: 8.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			570855	03/07/22 11:27	OP	TAL SAC
Total/NA	Analysis	537 (modified)		1	571363	03/09/22 00:26	K1S	TAL SAC
Total/NA	Prep	SHAKE	DL		570855	03/07/22 11:27	OP	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	571869	03/10/22 12:30	S1M	TAL SAC

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Analyst References:

Lab: TAL SAC

Batch Type: Prep

OP = Oscar Pascual-Diaz

Batch Type: Analysis

DJW = Darian Wong

K1S = Kotechakon Sorndee

S1M = Sudarat Mongkol

Accreditation/Certification Summary

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-22
Arkansas DEQ	State	88-0691	06-17-22
California	State	2897	01-31-23
Colorado	State	CA0004	08-31-22
Florida	NELAP	E87570	06-30-22
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-18-22
Louisiana	NELAP	01944	06-30-22
Maine	State	CA00004	04-14-22
Michigan	State	9947	01-29-22 *
Nevada	State	CA00044	08-31-22
New Hampshire	NELAP	2997	04-18-22
New Jersey	NELAP	CA005	06-30-22
New York	NELAP	11666	04-01-22
Ohio	State	41252	01-29-23
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-22
US Fish & Wildlife	US Federal Programs	58448	07-31-22
USDA	US Federal Programs	P330-18-00239	01-23-23
Virginia	NELAP	460278	03-14-22
Washington	State	C581	05-05-22
West Virginia (DW)	State	9930C	12-31-22
Wisconsin	State	998204680	08-31-22
Wyoming	State Program	8TMS-L	01-28-19 *

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

Method Summary

Client: City of Port Huron
Job ID: 190-28159-1
Project/Site: City of Port Huron PFAS - Biosolids

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Login Sample Receipt Checklist

Client: City of Port Huron

Job Number: 190-28159-1

Login Number: 28159
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/04/22 12:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1825275
Sample custody seals, if present, are 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.	True	
Cooler Temperature is recorded.	True	0.8c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
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	
Sample Preservation Verified.	N/A	
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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins TestAmerica, Michigan Service Center
10448 Citation Drive
Suite 200
Brighton, MI 48116-6561
phone 810.229.2763 fax

Chain of Custody Record

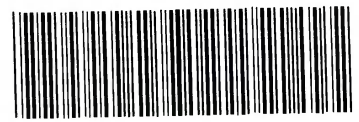
eurofins Environment Testing TestAmerica

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☑Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Doug Westbrook	**Project Manager:**		COC No:
City of Port Huron	Email:	**Site Contact:**	**Date: 3/2/2022**	___1___ of ___1___ COCs
100 Merchant Street	**Tel/Fax:**	**Lab Contact:**	**Carrier:**	TALS Project #:
Port Huron, MI 48060	**Analysis Turnaround Time**			Sampler: Dwestbrook Sburns
810-984-9775	☐ CALENDAR DAYS ☑ WORKING DAYS			**For Lab Use Only:**
(xxx) xxx-xxxx FAX	TAT if different from Below _____			Walk-in Client:
Project Name:	☑ 2 weeks			Lab Sampling:
Site:	☐ 1 week			Job / SDG No.:
P O # 4344	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	PFC_IDA - (MOD) PFAS, Standard List (28 Analytes)	Sample Specific Notes:
POTW Biosolids 11-22	3/2/2022	9:40	G	Sludge	2			x	



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:
Sample(s) shipped in a cooler with ice.

For Biosolids: Please run as a solid, with dry weight correcting.

Custody Seals Intact: ☑ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____		Therm ID No.:_____
Relinquished by: Matthew Dwestbrook	Company: City of Port Huron	Date/Time: 1:30pm 3-2-22	Received by: Teri Hall	Company: EETA	Date/Time: 3/3/22 1240
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.31, dated 3/5/2020

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☐ SDS or Known Hazard Information Supplied by Client
☐ Discrepancies
☐ Short Hold
Client ID: City of Port Huron
Work Oder #: 190-28159
☐ Rush ☐ 24 Hr ☐ 2-Day ☐ 3-Day ☐ 5-Day ☐ Other: _____
Receipt Evaluation Performed by: Initials: MH Date: 3/3/22 Time: 1240

Cooler / Sample Receipt

After hours receipt: complete gray areas. Place cooler in walk-in, place form in Receiving box. Date: _____ Time: _____

Method of Shipment:
Walk-In Client Eurofins TA Field/Courier
Other Client / 3rd Party Courier: _____
Fed Ex Tracking #: _____
UPS Tracking #: Ground
Other: _____

Shipping Container Type:
☑ Cooler ☐ Box
☐ None ☐ Other: _____

Packing Materials:
☑ Plastic Bags ☐ Foam
☐ Bubble Wrap ☐ Paper
☐ Packing Peanuts ☐ None
☐ Other: _____

Custody Seals Intact:
☑ Yes ☐ No
☐ NA (not used or required)

Cooling Materials:
☐ Ice (Solid) ☑ Ice (Melted)
☐ Blue Ice ☐ None
☐ Other: _____

Bacteriological Samples	Temp Corrected (°C)	Frozen? Yes	Frozen? No	Rec'd Within 2 Hrs? Yes	Rec'd Within 2 Hrs? No	Sample Flagged? Yes	Sample Flagged? No

Received on same day sampled? Yes (No) Additional Sheets Required? Yes (No)

Receipt Temperatures

Thermometer ID	Observed (°C)	Corrected (°C)	Temp Blank	Sample Temp	Acceptable	Cooler ID	Affected Samples
CP313269	3.7	3.7		X	X Y _ N		
					_ Y _ N		
					_ Y _ N		

Receipt Questions**	Y	N	NA	"No" answers require additional comment
CoC present and ETA receipt signature, date, and time properly documented?	X			
Containers and Labels in good condition? *(unbroken, not leaking, appropriately filled, labels legible & attached)*	X			
Appropriate containers used and adequate volume provided?	X			Preserved bottles checked for pH?* Yes No
Number of sample containers match CoC?	X			pH strip lot # _____
Samples received within hold?	X			
Samples submitted for GRO and Volatiles analysis (8260, 624, 524) received without headspace?			X	
Was a Trip Blank received with VOA samples?			X	
Were the samples free of any questionable physical conformities? (i.e.; field duplicates or multiple bottles of the same sample do not significantly vary in appearance – color, solid proportions, etc.)	X			
Were the CoC bottle labels and all other items free of all other discrepancies or issues that would need to be addressed with the Project Manager and/or Client?	X			
**May not be applicable if samples are not for compliance testing				*Excludes FOG, VOAs, TOC Vials, HEM

Client Contact Record
Contact Via: ☐ Phone ☐ Email ☐ Other: _____ Person Contacted: _____ Date/Time: _____
☐ Discrepancy allowance agreement is on record in the client project file

Discussion / Resolution

Any additional documentation and clarification from the client must be noted in the narrative and/or scanned into the CoC directory.
Reviewed by _____ Date: 3/3/22

WI-MI-010_020720

Eurofins Michigan
10448 Citation Drive Suite 200
Brighton, MI 48116
Phone: 810-229-2763 Fax: 810-229-0000

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schafer, Sue	Carrier Tracking No(s):	COC No: 190-31770.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sue.Schafer@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note):		Job #: 190-28159-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/16/2022			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: City of Port Huron	Project #: 19000895			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Moisture	PFC_IDA/Shake_Bath_14D PFAS 28	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
POTW Biosolids 11-22 (190-28159-1)	3/2/22	09:40 Eastern		Solid			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	3/3/22 1700		[signature]	3/4/22 9:40	EEN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 185575	Cooler Temperature(s) °C and Other Remarks: 0.8C

Ver: 06/08/2021