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ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-163654-1
Client Project/Site: Sludge Storage Tank

For:
City of Sturgis
130 N Nottawa St
Sturgis, Michigan 49091

Attn: Thomas Sikorski

Authorized for release by:
3/18/2022 4:15:13 PM

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Table of Contents

Definitions/Glossary

Client: City of Sturgis
Job ID: 240-163654-1
Project/Site: Sludge Storage Tank

Glossary

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

Case Narrative

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

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Laboratory: Eurofins Canton

Narrative

Job Narrative
240-163654-1

Comments
No additional comments.

Receipt
The samples were received on 3/15/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.4º C.

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

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

Method Summary

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Method	Method Description	Protocol	Laboratory
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
537 (mod)	EPA 537 Isotope Dilution	EPA	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

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

Sample Summary

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-163654-1	20220314 SS-PFAS-1-2	Solid	03/14/22 12:30	03/15/22 09:50
240-163654-3	20220314 FB-PFAS-1-2	Water	03/14/22 12:15	03/15/22 09:50

Detection Summary

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Client Sample ID: 20220314 SS-PFAS-1-2 — Lab Sample ID: 240-163654-1

No Detections.

Client Sample ID: 20220314 FB-PFAS-1-2 — Lab Sample ID: 240-163654-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Client Sample ID: 20220314 SS-PFAS-1-2

Date Collected: 03/14/22 12:30
Date Received: 03/15/22 09:50

Lab Sample ID: 240-163654-1

Matrix: Solid

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11Cl-PF3OUdS	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
4:2 Fluorotelomer sulfonic acid	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
6:2 Fluorotelomer sulfonic acid	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
8:2 Fluorotelomer sulfonic acid	<2.8		2.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
9Cl-PF3ONS	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
DONA	<2.8		2.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
HFPODA	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
NEtFOSAA	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
NMeFOSAA	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorobutanesulfonic acid	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorobutanoic acid	<1.8		1.8		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorodecanesulfonic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorodecanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorododecanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluoroheptanesulfonic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluoroheptanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorohexanesulfonic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorohexanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorononanesulfonic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorononanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorooctanesulfonamide	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorooctanesulfonic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorooctanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluoropentanesulfonic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluoropentanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorotetradecanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluorotridecanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1
Perfluoroundecanoic acid	<0.55		0.55		ng/g		03/16/22 16:57	03/17/22 17:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*106*		*10 - 200*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
M2-6:2 FTS	*129*		*10 - 200*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
M2-8:2 FTS	*147*		*15 - 200*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C2 PFTeDA	*66*		*10 - 169*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C3 HFPO-DA	*102*		*10 - 169*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C3 PFBS	*102*		*27 - 179*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C4 PFBA	*92*		*28 - 153*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C4 PFHpA	*94*		*10 - 178*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C5 PFPeA	*95*		*24 - 161*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C8 PFOA	*93*		*26 - 159*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C8 PFOS	*96*		*41 - 154*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
d3-NMeFOSAA	*94*		*10 - 178*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
d5-NEtFOSAA	*119*		*10 - 193*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C3 PFHxS	*95*		*24 - 171*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C5 PFHxA	*82*		*10 - 174*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C6 PFDA	*96*		*26 - 161*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C7 PFUnA	*93*		*12 - 173*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C8 FOSA	*90*		*14 - 163*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C2-PFDoDA	*63*		*11 - 166*	*03/16/22 16:57*	*03/17/22 17:04*	*1*
13C9 PFNA	*96*		*26 - 165*	*03/16/22 16:57*	*03/17/22 17:04*	*1*

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Client Sample ID: 20220314 FB-PFAS-1-2

Date Collected: 03/14/22 12:15
Date Received: 03/15/22 09:50

Lab Sample ID: 240-163654-3

Matrix: Water

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluoroheptanoic acid (PFHpA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorooctanoic acid (PFOA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorononanoic acid (PFNA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorobutanesulfonic acid (PFBS)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorohexanesulfonic acid (PFHxS)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorooctane sulfonate (PFOS)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
NEtFOSAA	<2.7		2.7		ng/L		03/16/22 15:53	03/17/22 22:08	1
NMeFOSAA	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorooctanesulfonamide (PFOSA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorobutanoic acid (PFBA)	<4.5		4.5		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluoropentanoic acid (PFPA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
HFPO-DA (GenX)	<2.7		2.7		ng/L		03/16/22 15:53	03/17/22 22:08	1
DONA	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
9Cl-PF3ONS	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
11Cl-PF3OUdS	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	<2.7		2.7		ng/L		03/16/22 15:53	03/17/22 22:08	1
4:2 Fluorotelomer sulfonic acid	<1.8		1.8		ng/L		03/16/22 15:53	03/17/22 22:08	1
6:2 Fluorotelomer sulfonic acid	<4.5		4.5		ng/L		03/16/22 15:53	03/17/22 22:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*192*		*10 - 200*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
M2-8:2 FTS	*139*		*33 - 200*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
M2-6:2 FTS	*188*		*17 - 200*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C5 PFHxA	*111*		*24 - 179*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C4 PFHpA	*117*		*31 - 182*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C8 PFOA	*132*		*48 - 162*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C9 PFNA	*146*		*51 - 167*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C6 PFDA	*108*		*49 - 163*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C7 PFUnA	*90*		*34 - 174*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C2-PFDoDA	*67*		*17 - 176*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C2 PFTeDA	*42*		*10 - 179*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C3 PFBS	*146*		*16 - 200*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C3 PFHxS	*116*		*28 - 188*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C8 PFOS	*127*		*51 - 159*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
d3-NMeFOSAA	*77*		*31 - 174*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
d5-NEtFOSAA	*91*		*29 - 195*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C8 FOSA	*42*		*10 - 168*	*03/16/22 15:53*	*03/17/22 22:08*	*1*
13C4 PFBA	*125*		*42 - 165*	*03/16/22 15:53*	*03/17/22 22:08*	*1*

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Client Sample ID: 20220314 FB-PFAS-1-2
Date Collected: 03/14/22 12:15
Date Received: 03/15/22 09:50

Lab Sample ID: 240-163654-3
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	141		38 - 187	03/16/22 15:53	03/17/22 22:08	1
13C3 HFPO-DA	93		17 - 185	03/16/22 15:53	03/17/22 22:08	1

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-234364/1-A
Matrix: Water
Analysis Batch: 234739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 234364

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
NEtFOSAA	<3.0		3.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
NMeFOSAA	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorobutanoic acid (PFBA)	<5.0		5.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorooctanesulfonamide (PFOSA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorooctane sulfonate (PFOS)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
HFPO-DA (GenX)	<3.0		3.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
DONA	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
9Cl-PF3ONS	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluoropentanoic acid (PFPA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
11Cl-PF3OUdS	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	<3.0		3.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
4:2 Fluorotelomer sulfonic acid	<2.0		2.0		ng/L		03/16/22 15:53	03/17/22 21:35	1
6:2 Fluorotelomer sulfonic acid	<5.0		5.0		ng/L		03/16/22 15:53	03/17/22 21:35	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*162*		*10 - 200*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
M2-6:2 FTS	*139*		*17 - 200*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
M2-8:2 FTS	*119*		*33 - 200*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C2 PFTeDA	*99*		*10 - 179*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C3 PFBS	*138*		*16 - 200*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C4 PFHpA	*128*		*31 - 182*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C8 PFOA	*138*		*48 - 162*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C8 PFOS	*133*		*51 - 159*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
d3-NMeFOSAA	*130*		*31 - 174*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C4 PFBA	*126*		*42 - 165*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
d5-NEtFOSAA	*122*		*29 - 195*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C3 PFHxS	*124*		*28 - 188*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C5 PFPeA	*142*		*38 - 187*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C3 HFPO-DA	*114*		*17 - 185*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C5 PFHxA	*130*		*24 - 179*	*03/16/22 15:53*	*03/17/22 21:35*	*1*
13C6 PFDA	*131*		*49 - 163*	*03/16/22 15:53*	*03/17/22 21:35*	*1*

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

Lab Sample ID: MB 410-234364/1-A
Matrix: Water
Analysis Batch: 234739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 234364

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C7 PFUnA	127		34 - 174	03/16/22 15:53	03/17/22 21:35	1
13C8 FOSA	103		10 - 168	03/16/22 15:53	03/17/22 21:35	1
13C2-PFDoDA	113		17 - 176	03/16/22 15:53	03/17/22 21:35	1
13C9 PFNA	135		51 - 167	03/16/22 15:53	03/17/22 21:35	1

Lab Sample ID: LCS 410-234364/2-A
Matrix: Water
Analysis Batch: 234739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 234364

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid (PFBS)	22.7	20.3		ng/L		90	53 - 138
NEtFOSAA	25.6	22.0		ng/L		86	55 - 134
NMeFOSAA	25.6	21.8		ng/L		85	59 - 140
Perfluorodecanoic acid (PFDA)	25.6	22.0		ng/L		86	56 - 138
Perfluoroheptanoic acid (PFHpA)	25.6	24.7		ng/L		96	59 - 145
Perfluoroheptanesulfonic Acid (PFHpS)	24.4	20.1		ng/L		83	56 - 140
Perfluorohexanesulfonic acid (PFHxS)	23.3	20.1		ng/L		86	58 - 134
Perfluorohexanoic acid (PFHxA)	25.6	24.0		ng/L		94	58 - 139
Perfluorodecanesulfonic acid (PFDS)	24.7	17.4		ng/L		71	55 - 137
Perfluorononanesulfonic acid (PFNS)	24.6	21.1		ng/L		86	59 - 136
Perfluorononanoic acid (PFNA)	25.6	23.8		ng/L		93	61 - 139
Perfluorobutanoic acid (PFBA)	25.6	22.2		ng/L		87	59 - 136
Perfluorooctanesulfonamide (PFOSA)	25.6	22.2		ng/L		87	43 - 167
Perfluorooctane sulfonate (PFOS)	23.7	21.9		ng/L		92	45 - 150
HFPO-DA (GenX)	25.6	21.6		ng/L		84	50 - 135
Perfluorooctanoic acid (PFOA)	25.6	22.6		ng/L		88	51 - 145
DONA	24.2	23.0		ng/L		95	55 - 143
Perfluoropentanesulfonic acid (PFPeS)	24.0	19.8		ng/L		82	55 - 140
9Cl-PF3ONS	23.8	22.1		ng/L		93	59 - 135
Perfluoropentanoic acid (PFPA)	25.6	18.3		ng/L		72	57 - 141
11Cl-PF3OUdS	23.8	20.9		ng/L		88	53 - 139
Perfluorotetradecanoic acid (PFTeA)	25.6	24.1		ng/L		94	62 - 139
Perfluorotridecanoic acid (PFTriA)	25.6	23.0		ng/L		90	58 - 146
Perfluoroundecanoic acid (PFUnA)	25.6	24.0		ng/L		94	60 - 141
Perfluorododecanoic acid (PFDoA)	25.6	21.7		ng/L		85	59 - 143
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	24.5	21.5		ng/L		88	55 - 138
4:2 Fluorotelomer sulfonic acid	23.9	21.0		ng/L		88	55 - 139
6:2 Fluorotelomer sulfonic acid	24.3	21.1		ng/L		87	28 - 173

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

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-4:2 FTS	161		10 - 200
M2-6:2 FTS	132		17 - 200
M2-8:2 FTS	116		33 - 200
13C2 PFTeDA	99		10 - 179
13C3 PFBS	129		16 - 200
13C4 PFHpA	136		31 - 182
13C8 PFOA	141		48 - 162
13C8 PFOS	126		51 - 159
d3-NMeFOSAA	114		31 - 174
13C4 PFBA	121		42 - 165
d5-NEtFOSAA	119		29 - 195
13C3 PFHxS	133		28 - 188
13C5 PFPeA	137		38 - 187
13C3 HFPO-DA	124		17 - 185
13C5 PFHxA	131		24 - 179
13C6 PFDA	125		49 - 163
13C7 PFUnA	122		34 - 174
13C8 FOSA	104		10 - 168
13C2-PFDoDA	113		17 - 176
13C9 PFNA	129		51 - 167

Lab Sample ID: LCSD 410-234364/3-A
Matrix: Water
Analysis Batch: 234739

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 234364

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)			22.7	21.0		ng/L		93	53 - 138	3	30
NEtFOSAA			25.6	21.7		ng/L		85	55 - 134	1	30
NMeFOSAA			25.6	20.3		ng/L		79	59 - 140	7	30
Perfluorodecanoic acid (PFDA)			25.6	22.6		ng/L		88	56 - 138	3	30
Perfluoroheptanoic acid (PFHpA)			25.6	24.5		ng/L		96	59 - 145	1	30
Perfluoroheptanesulfonic Acid (PFHpS)			24.4	19.9		ng/L		82	56 - 140	1	30
Perfluorohexanesulfonic acid (PFHxS)			23.3	21.0		ng/L		90	58 - 134	4	30
Perfluorohexanoic acid (PFHxA)			25.6	23.2		ng/L		91	58 - 139	3	30
Perfluorodecanesulfonic acid (PFDS)			24.7	18.1		ng/L		73	55 - 137	4	30
Perfluorononanesulfonic acid (PFNS)			24.6	21.5		ng/L		87	59 - 136	2	30
Perfluorononanoic acid (PFNA)			25.6	24.7		ng/L		97	61 - 139	4	30
Perfluorobutanoic acid (PFBA)			25.6	22.0		ng/L		86	59 - 136	1	30
Perfluorooctanesulfonamide (PFOSA)			25.6	22.3		ng/L		87	43 - 167	0	30
Perfluorooctane sulfonate (PFOS)			23.7	22.9		ng/L		97	45 - 150	4	30
HFPO-DA (GenX)			25.6	24.6		ng/L		96	50 - 135	13	30
Perfluorooctanoic acid (PFOA)			25.6	23.2		ng/L		90	51 - 145	2	30
DONA			24.2	22.6		ng/L		93	55 - 143	2	30
Perfluoropentanesulfonic acid (PFPeS)			24.0	20.6		ng/L		86	55 - 140	4	30
9Cl-PF3ONS			23.8	22.8		ng/L		96	59 - 135	3	30
Perfluoropentanoic acid (PFPA)			25.6	18.4		ng/L		72	57 - 141	0	30

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

Lab Sample ID: LCSD 410-234364/3-A
Matrix: Water
Analysis Batch: 234739

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 234364

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
11Cl-PF3OUdS			23.8	21.7		ng/L		91	53 - 139	3	30
Perfluorotetradecanoic acid (PFTeA)			25.6	23.6		ng/L		92	62 - 139	2	30
Perfluorotridecanoic acid (PFTriA)			25.6	23.6		ng/L		92	58 - 146	3	30
Perfluoroundecanoic acid (PFUnA)			25.6	24.7		ng/L		96	60 - 141	3	30
Perfluorododecanoic acid (PFDoA)			25.6	23.4		ng/L		91	59 - 143	7	30
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)			24.5	25.0		ng/L		102	55 - 138	15	30
4:2 Fluorotelomer sulfonic acid			23.9	19.4		ng/L		81	55 - 139	8	30
6:2 Fluorotelomer sulfonic acid			24.3	19.1		ng/L		79	28 - 173	10	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-4:2 FTS	*150*		*10 - 200*
M2-6:2 FTS	*122*		*17 - 200*
M2-8:2 FTS	*103*		*33 - 200*
13C2 PFTeDA	*94*		*10 - 179*
13C3 PFBS	*112*		*16 - 200*
13C4 PFHpA	*112*		*31 - 182*
13C8 PFOA	*120*		*48 - 162*
13C8 PFOS	*112*		*51 - 159*
d3-NMeFOSAA	*113*		*31 - 174*
13C4 PFBA	*112*		*42 - 165*
d5-NEtFOSAA	*110*		*29 - 195*
13C3 PFHxS	*112*		*28 - 188*
13C5 PFPeA	*120*		*38 - 187*
13C3 HFPO-DA	*98*		*17 - 185*
13C5 PFHxA	*112*		*24 - 179*
13C6 PFDA	*114*		*49 - 163*
13C7 PFUnA	*114*		*34 - 174*
13C8 FOSA	*89*		*10 - 168*
13C2-PFDoDA	*103*		*17 - 176*
13C9 PFNA	*119*		*51 - 167*

Lab Sample ID: MB 410-234392/1-B
Matrix: Solid
Analysis Batch: 234716

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 234392

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
NEtFOSAA	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
NMeFOSAA	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorodecanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluoroheptanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluoroheptanesulfonic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorohexanesulfonic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorohexanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorodecanesulfonic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1

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

Lab Sample ID: MB 410-234392/1-B
Matrix: Solid
Analysis Batch: 234716

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 234392

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanesulfonic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorononanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorobutanoic acid	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorooctanesulfonamide	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorooctanesulfonic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
HFPODA	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorooctanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
DONA	<3.0		3.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluoropentanesulfonic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
9Cl-PF3ONS	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluoropentanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
11Cl-PF3OUdS	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorotetradecanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorotridecanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluoroundecanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
Perfluorododecanoic acid	<0.60		0.60		ng/g		03/16/22 16:57	03/17/22 16:42	1
8:2 Fluorotelomer sulfonic acid	<3.0		3.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
4:2 Fluorotelomer sulfonic acid	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1
6:2 Fluorotelomer sulfonic acid	<2.0		2.0		ng/g		03/16/22 16:57	03/17/22 16:42	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*104*		*10 - 200*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
M2-6:2 FTS	*116*		*10 - 200*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
M2-8:2 FTS	*122*		*15 - 200*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C2 PFTeDA	*88*		*10 - 169*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C3 PFBS	*114*		*27 - 179*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C4 PFHpA	*98*		*10 - 178*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C8 PFOA	*106*		*26 - 159*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C8 PFOS	*102*		*41 - 154*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
d3-NMeFOSAA	*103*		*10 - 178*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C4 PFBA	*103*		*28 - 153*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
d5-NEtFOSAA	*109*		*10 - 193*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C3 PFHxS	*103*		*24 - 171*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C5 PFPeA	*107*		*24 - 161*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C3 HFPO-DA	*118*		*10 - 169*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C5 PFHxA	*90*		*10 - 174*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C6 PFDA	*107*		*26 - 161*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C7 PFUnA	*103*		*12 - 173*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C8 FOSA	*123*		*14 - 163*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C2-PFDoDA	*102*		*11 - 166*	*03/16/22 16:57*	*03/17/22 16:42*	*1*
13C9 PFNA	*102*		*26 - 165*	*03/16/22 16:57*	*03/17/22 16:42*	*1*

Lab Sample ID: LCS 410-234392/2-B
Matrix: Solid
Analysis Batch: 234716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 234392

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid	22.1	18.4		ng/g		83	54 - 130
NEtFOSAA	25.0	19.9		ng/g		80	57 - 127

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

Lab Sample ID: LCS 410-234392/2-B
Matrix: Solid
Analysis Batch: 234716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 234392

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
NMeFOSAA	25.0	20.8		ng/g		83	60 - 134
Perfluorodecanoic acid	25.0	21.7		ng/g		87	56 - 133
Perfluoroheptanoic acid	25.0	21.5		ng/g		86	59 - 137
Perfluoroheptanesulfonic acid	23.8	19.1		ng/g		80	59 - 132
Perfluorohexanesulfonic acid	22.8	19.7		ng/g		87	59 - 129
Perfluorohexanoic acid	25.0	23.7		ng/g		95	59 - 132
Perfluorodecanesulfonic acid	24.1	18.3		ng/g		76	57 - 132
Perfluorononanesulfonic acid	24.0	20.0		ng/g		83	60 - 132
Perfluorononanoic acid	25.0	23.9		ng/g		96	61 - 134
Perfluorobutanoic acid	25.0	23.1		ng/g		92	60 - 128
Perfluorooctanesulfonamide	25.0	19.0		ng/g		76	47 - 149
Perfluorooctanesulfonic acid	23.1	19.5		ng/g		84	61 - 126
HFPODA	25.0	19.5		ng/g		78	49 - 135
Perfluorooctanoic acid	25.0	22.8		ng/g		91	59 - 131
DONA	23.6	20.9		ng/g		88	57 - 137
Perfluoropentanesulfonic acid	23.5	18.2		ng/g		78	57 - 133
9Cl-PF3ONS	23.3	19.7		ng/g		85	62 - 130
Perfluoropentanoic acid	25.0	17.1		ng/g		68	58 - 134
11Cl-PF3OUdS	23.3	17.8		ng/g		77	55 - 135
Perfluorotetradecanoic acid	25.0	22.8		ng/g		91	62 - 134
Perfluorotridecanoic acid	25.0	21.4		ng/g		86	53 - 143
Perfluoroundecanoic acid	25.0	22.7		ng/g		91	60 - 134
Perfluorododecanoic acid	25.0	21.8		ng/g		87	60 - 135
8:2 Fluorotelomer sulfonic acid	24.0	18.8		ng/g		78	55 - 133
4:2 Fluorotelomer sulfonic acid	23.4	18.3		ng/g		79	58 - 131
6:2 Fluorotelomer sulfonic acid	23.7	17.6		ng/g		74	59 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*108*		*10 - 200*
M2-6:2 FTS	*127*		*10 - 200*
M2-8:2 FTS	*137*		*15 - 200*
13C2 PFTeDA	*104*		*10 - 169*
13C3 PFBS	*140*		*27 - 179*
13C4 PFHpA	*118*		*10 - 178*
13C8 PFOA	*121*		*26 - 159*
13C8 PFOS	*120*		*41 - 154*
d3-NMeFOSAA	*126*		*10 - 178*
13C4 PFBA	*117*		*28 - 153*
d5-NEtFOSAA	*135*		*10 - 193*
13C3 PFHxS	*124*		*24 - 171*
13C5 PFPeA	*131*		*24 - 161*
13C3 HFPO-DA	*135*		*10 - 169*
13C5 PFHxA	*104*		*10 - 174*
13C6 PFDA	*129*		*26 - 161*
13C7 PFUnA	*123*		*12 - 173*
13C8 FOSA	*142*		*14 - 163*
13C2-PFDoDA	*124*		*11 - 166*
13C9 PFNA	*108*		*26 - 165*

QC Association Summary

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

LCMS

Prep Batch: 234364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163654-3	20220314 FB-PFAS-1-2	Total/NA	Water	537 IDA	
MB 410-234364/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-234364/2-A	Lab Control Sample	Total/NA	Water	537 IDA	
LCSD 410-234364/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	

Prep Batch: 234392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163654-1	20220314 SS-PFAS-1-2	Total/NA	Solid	537 (mod)	
MB 410-234392/1-B	Method Blank	Total/NA	Solid	537 (mod)	
LCS 410-234392/2-B	Lab Control Sample	Total/NA	Solid	537 (mod)	

Cleanup Batch: 234414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163654-1	20220314 SS-PFAS-1-2	Total/NA	Solid	Extract Aliquot	234392
MB 410-234392/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	234392
LCS 410-234392/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	234392

Analysis Batch: 234716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163654-1	20220314 SS-PFAS-1-2	Total/NA	Solid	537 IDA	234414
MB 410-234392/1-B	Method Blank	Total/NA	Solid	537 IDA	234414
LCS 410-234392/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	234414

Analysis Batch: 234739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-163654-3	20220314 FB-PFAS-1-2	Total/NA	Water	537 IDA	234364
MB 410-234364/1-A	Method Blank	Total/NA	Water	537 IDA	234364
LCS 410-234364/2-A	Lab Control Sample	Total/NA	Water	537 IDA	234364
LCSD 410-234364/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	234364

Lab Chronicle

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Client Sample ID: 20220314 SS-PFAS-1-2

Lab Sample ID: 240-163654-1

Date Collected: 03/14/22 12:30

Matrix: Solid

Date Received: 03/15/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537 (mod)			234392	03/16/22 16:57	X5YV	ELLE
Total/NA	Cleanup	Extract Aliquot			234414	03/16/22 18:24	X5YV	ELLE
Total/NA	Analysis	537 IDA		1	234716	03/17/22 17:04	JVK6	ELLE

Client Sample ID: 20220314 FB-PFAS-1-2

Lab Sample ID: 240-163654-3

Date Collected: 03/14/22 12:15

Matrix: Water

Date Received: 03/15/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537 IDA			234364	03/16/22 15:53	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	234739	03/17/22 22:08	QD9Y	ELLE

Laboratory References:

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

Accreditation/Certification Summary

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22
A2LA	ISO/IEC 17025	0001.01	11-30-22
Alaska	State	PA00009	06-30-22
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-12-23
Arkansas DEQ	State	88-0660	08-10-22
California	State	2792	02-02-22 *
Colorado	State	PA00009	06-30-22
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-23
Delaware (DW)	State	N/A	01-31-23
Florida	NELAP	E87997	06-30-22
Georgia (DW)	State	C048	01-31-22 *
Hawaii	State	N/A	01-31-23
Illinois	NELAP	200027	01-31-23
Iowa	State	361	03-02-22 *
Kansas	NELAP	E-10151	10-31-22
Kentucky (DW)	State	KY90088	12-31-22
Kentucky (UST)	State	1.01	11-30-22
Kentucky (WW)	State	KY90088	01-01-23
Louisiana	NELAP	02055	06-30-22
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-22
Massachusetts	State	M-PA009	06-30-22
Michigan	State	9930	01-31-23
Minnesota	NELAP	042-999-487	12-31-22
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-23
Montana (UST)	State	<cert No.>	02-01-23
Nebraska	State	NE-OS-32-17	01-31-23
New Hampshire	NELAP	2730	01-10-23
New Jersey	NELAP	PA011	06-30-22
New York	NELAP	10670	04-01-22
North Carolina (DW)	State	42705	07-31-22
North Carolina (WW/SW)	State	521	12-31-22
North Dakota	State	R-205	01-31-23
Oklahoma	NELAP	R-205	08-31-22
Oregon	NELAP	PA200001	09-11-22
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-23
Rhode Island	State	LAO00338	12-30-22
South Carolina	State	89002	01-31-23
Tennessee	State	02838	01-31-22 *
Texas	NELAP	T104704194-21-40	08-31-22
Vermont	State	VT - 36037	10-28-22
Virginia	NELAP	460182	06-14-22
Washington	State	C457	04-12-22
West Virginia (DW)	State	9906 C	12-31-22
West Virginia DEP	State	055	04-30-22
Wyoming	State	8TMS-L	01-31-23

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

Accreditation/Certification Summary

Client: City of Sturgis
Job ID: 240-163654-1
Project/Site: Sludge Storage Tank

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

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

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	1.01	11-30-22

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

0.6/0.4

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: JWBS	Lab PM: Kalis, Nicole A	Carrier Tracking No(s):	COC No: 240-92930-34211.1
Client Contact: Tom Sikorski	Phone: 269-651-6520	E-Mail: Nicole.Kalis@Eurofinset.com	State of Origin: MI	Page: Page 1 of 1
Company: City of Sturgis	PWSID:			Job #:
Address: 2101 Treatment Plant Road	Due Date Requested:			
City: Sturgis	TAT Requested (days): 7			
State, Zip: MI, 49091	Compliance Project: Δ Yes Δ No			
Phone: 269-651-6520	PO #: ~~Pay by Credit Card~~ WW21074			
Email: tsikorski@sturgismi.gov	WO #:			
Project Name: City of Sturgis Biosolids	Project #: 24028703			
Site: Sludge Storage Tank	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)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - MI List 28 PFAS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
20220314SS-PFAS-1	3.14.22	12:30 pm	G	Solid			X		
20220314SS-PFAS-2	3.14.22	12:30 pm	G	Solid			X		
20220314FB-PFAS-1	3.14.22	12:15 pm	G	Water			X		
20220314FB-PFAS-2	3.14.22	12:17 pm	G	Water			X		

240-163654 Chain of Custody

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
1	[signature]	3.14.22 1:00 pm	City of Sturgis	Rachelle Hawk	3-15-22 9:50	EET INC
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.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** _____
Canton Facility

Client City of Sturgis Site Name _____ Cooler unpacked by: Rachelle Hiddet

Cooler Received on 3-15-22 Opened on 3-15-22

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: ~~Bubble Wrap~~ Foam ~~Plastic Bag~~ None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-14 (CF **-0.2** °C) Observed Cooler Temp. 0.6 °C Corrected Cooler Temp. 0.4 °C
   IR GUN #IR-15 (CF **-0.7**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 (Yes) No
   -Were the seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
   -Were tamper/custody seals intact and uncompromised? Yes No (NA)
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? (Yes) No
9. For each sample, does the COC specify preservatives (Y/(N)) # of containers (Y/(N)) and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? (Yes) No
11. Sufficient quantity received to perform indicated analyses? (Yes) No
12. Are these work share samples and all listed on the COC? Yes (No)
    If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# **HC157842**
14. Were VOAs on the COC? Yes (No)
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No (NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes (No)
17. Was a LL Hg or Me Hg trip blank present? _____ Yes (No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kalis, Nicole A	Carrier Tracking No(s):	COC No: 240-149809.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Nicole.Kalis@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Env, LLC		Accreditations Required (See note):		Job #: 240-163654-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 3/23/2022			
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: City of Sturgis Biosolids	Project #: 24028703			
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)	PFC_IDA/Shake_Bath_14D MI List 28 PFAS	PFC_IDA/3535_PFC MI List 28 PFAS	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
20220314 SS-PFAS-1 (240-163654-1)	3/14/22	12:30 Eastern		Solid			X		2	Biosolids - Must be ran as a solid
20220314 FB-PFAS-1 (240-163654-3)	3/14/22	12:15 Eastern		Water				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
	3-15-22 1204	ETA			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 3/16/22 1001	Company ETA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: City of Sturgis

Job Number: 240-163654-1

Login Number: 163654
List Number: 2
Creator: McCaskey, Jonathan

List Source: Eurofins Lancaster Laboratories Env, LLC
List Creation: 03/16/22 11:23 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	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	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	

Isotope Dilution Summary

Client: City of Sturgis
Project/Site: Sludge Storage Tank

Job ID: 240-163654-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	PFTDA	HFPODA	C3PFBS	PFBA	C4PFHA
Lab Sample ID	Client Sample ID	(10-200)	(10-200)	(15-200)	(10-169)	(10-169)	(27-179)	(28-153)	(10-178)
240-163654-1	20220314 SS-PFAS-1-2	106	129	147	66	102	102	92	94
LCS 410-234392/2-B	Lab Control Sample	108	127	137	104	135	140	117	118
MB 410-234392/1-B	Method Blank	104	116	122	88	118	114	103	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFPeA	C8PFOA	C8PFOS	d3NMFOS	d5NEFOS	C3PFHS	13C5PHA	C6PFDA
Lab Sample ID	Client Sample ID	(24-161)	(26-159)	(41-154)	(10-178)	(10-193)	(24-171)	(10-174)	(26-161)
240-163654-1	20220314 SS-PFAS-1-2	95	93	96	94	119	95	82	96
LCS 410-234392/2-B	Lab Control Sample	131	121	120	126	135	124	104	129
MB 410-234392/1-B	Method Blank	107	106	102	103	109	103	90	107

		Percent Isotope Dilution Recovery (Acceptance Limits)			
		13C7PUA	PFOSA	PFDoDA	C9PFNA
Lab Sample ID	Client Sample ID	(12-173)	(14-163)	(11-166)	(26-165)
240-163654-1	20220314 SS-PFAS-1-2	93	90	63	96
LCS 410-234392/2-B	Lab Control Sample	123	142	124	108
MB 410-234392/1-B	Method Blank	103	123	102	102

Surrogate Legend

M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
PFTDA = 13C2 PFTeDA
HFPODA = 13C3 HFPO-DA
C3PFBS = 13C3 PFBS
PFBA = 13C4 PFBA
C4PFHA = 13C4 PFHpA
PFPeA = 13C5 PFPeA
C8PFOA = 13C8 PFOA
C8PFOS = 13C8 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
C3PFHS = 13C3 PFHxS
13C5PHA = 13C5 PFHxA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFOSA = 13C8 FOSA
PFDoDA = 13C2-PFDoDA
C9PFNA = 13C9 PFNA

Method: 537 IDA - EPA 537 Isotope Dilution

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	(10-200)	(33-200)	(17-200)	(24-179)	(31-182)	(48-162)	(51-167)	(49-163)
240-163654-3	20220314 FB-PFAS-1-2	192	139	188	111	117	132	146	108
LCS 410-234364/2-A	Lab Control Sample	161	116	132	131	136	141	129	125
LCSD 410-234364/3-A	Lab Control Sample Dup	150	103	122	112	112	120	119	114
MB 410-234364/1-A	Method Blank	162	119	139	130	128	138	135	131

Isotope Dilution Summary

Client: City of Sturgis
Job ID: 240-163654-1
Project/Site: Sludge Storage Tank

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

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		13C7PUA	PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(34-174)	(17-176)	(10-179)	(16-200)	(28-188)	(51-159)	(31-174)	(29-195)
240-163654-3	20220314 FB-PFAS-1-2	90	67	42	146	116	127	77	91
LCS 410-234364/2-A	Lab Control Sample	122	113	99	129	133	126	114	119
LCSD 410-234364/3-A	Lab Control Sample Dup	114	103	94	112	112	112	113	110
MB 410-234364/1-A	Method Blank	127	113	99	138	124	133	130	122

		Percent Isotope Dilution Recovery (Acceptance Limits)			
		PFOSA	PFBA	PFPeA	HFPODA
Lab Sample ID	Client Sample ID	(10-168)	(42-165)	(38-187)	(17-185)
240-163654-3	20220314 FB-PFAS-1-2	42	125	141	93
LCS 410-234364/2-A	Lab Control Sample	104	121	137	124
LCSD 410-234364/3-A	Lab Control Sample Dup	89	112	120	98
MB 410-234364/1-A	Method Blank	103	126	142	114

Surrogate Legend

M242FTS = M2-4:2 FTS
M282FTS = M2-8:2 FTS
M262FTS = M2-6:2 FTS
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
HFPODA = 13C3 HFPO-DA