



28-Apr-2021

Thad Domick
Genesee County WWS
9290 Farrand Rd
Montrose, MI 48457

Re: **GCDCWWS - ARTP (04.13.21)**

Work Order: **21041507**

Dear Thad,

ALS Environmental received 4 samples on 16-Apr-2021 08:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 29.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink that reads "Ehrland Bosworth".

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
Work Order: 21041507

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21041507-01	Biosolids	Water		4/13/2021 08:40	4/16/2021 08:00	<input type="checkbox"/>
21041507-03	Influent	Water		4/13/2021 09:47	4/16/2021 08:00	<input type="checkbox"/>
21041507-04	Effluent	Water		4/13/2021 10:05	4/16/2021 08:00	<input type="checkbox"/>

Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
WorkOrder: 21041507

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
ng/L	Nanograms per Liter

Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
Work Order: 21041507

Case Narrative

Samples for the above noted Work Order were received on 04/16/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Extractable Organics:

Batch 175306, Method E537 Mod, Sample Influent (21041507-03A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low. 13C2-PFDoA, 13C8-FOSA

Batch 175306, Method E537 Mod, Sample Influent (21041507-03A): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 13C2-FtS 4:2, 13C2-FtS 6:2, 13C2-FtS 8:2

Batch 175306, Method E537 Mod, Sample Effluent (21041507-04A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low, 13C2-PFDoA, 13C2-PFHxDA, 13C2-PFTeA, d3-N-MeFOSA, d5-N-EtFOSA

Batch 175306, Method E537 Mod, Sample Effluent (21041507-04A): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 13C2-FtS 4:2, 13C2-FtS 6:2 13C2-FtS 8:2

Batch 175554, Method E537 Mod, Sample Biosolids (21041507-01A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low. 13C2-PFTeA, 13C8-FOSA

Batch 175554, Method E537 Mod, Sample Biosolids (21041507-01A): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 13C2-FtS 4:2, 13C2-FtS 6:2, 13C2-FtS 6:2

Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
Work Order: 21041507

Case Narrative

Batch 175306, Method E537 Mod, Sample Influent (21041507-03A): Sample arrived in 500 mL container - Poured off into 250 mL HDPE bottle.

Batch 175306, Method E537 Mod, Sample Effluent (21041507-04A): Sample arrived in 500 mL container - Poured off into 250 mL HDPE bottle.

No other deviations or anomalies were noted.

Wet Chemistry:

No deviations or anomalies were noted.

ALS Group, USA

Date: 28-Apr-21

Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
Sample ID: Biosolids
Collection Date: 4/13/2021 08:40 AM

Work Order: 21041507
Lab ID: 21041507-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED							
			Method: E537 MOD		Prep: E537 Mod / 4/22/21		Analyst: SK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		5.4	19	µg/Kg-dry	1	4/22/2021 21:47
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		5.3	19	µg/Kg-dry	1	4/22/2021 21:47
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		9.8	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorobutanesulfonic Acid (PFBS)	U		2.3	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorobutanoic Acid (PFBA)	U		5.1	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorodecanesulfonic Acid (PFDS)	U		11	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorodecanoic Acid (PFDA)	U		3.1	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorododecanoic Acid (PFDoA)	U		5.9	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluoroheptanesulfonic Acid (PFHpS)	U		10	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluoroheptanoic Acid (PFHpA)	U		4.3	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorohexanesulfonic Acid (PFHxS)	U		4.0	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorohexanoic Acid (PFHxA)	3.5	J	2.8	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorononanesulfonic Acid (PFNS)	U		3.2	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorononanoic Acid (PFNA)	U		2.7	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorooctanesulfonamide (PFOSA)	U		4.5	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorooctanesulfonic Acid (PFOS)	9.2	J	3.6	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorooctanoic Acid (PFOA)	U		3.1	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluoropentanesulfonic Acid (PFPeS)	U		7.9	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluoropentanoic Acid (PFPeA)	U		2.2	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorotetradecanoic Acid (PFTeA)	U		4.1	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluorotridecanoic Acid (PFTriA)	U		12	19	µg/Kg-dry	1	4/22/2021 21:47
Perfluoroundecanoic Acid (PFUnA)	U		5.7	19	µg/Kg-dry	1	4/22/2021 21:47
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		12	19	µg/Kg-dry	1	4/22/2021 21:47
N-Methylperfluorooctanesulfonamidoacetic Acid	17	J	12	19	µg/Kg-dry	1	4/22/2021 21:47
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		6.6	19	µg/Kg-dry	1	4/22/2021 21:47
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		11	19	µg/Kg-dry	1	4/22/2021 21:47
11Cl-Pf3OUdS	U		4.5	19	µg/Kg-dry	1	4/22/2021 21:47
9Cl-PF3ONS	U		2.7	19	µg/Kg-dry	1	4/22/2021 21:47
Surr: 13C2-FtS 4:2	166	S		50-150	%REC	1	4/22/2021 21:47
Surr: 13C2-FtS 6:2	227	S		50-150	%REC	1	4/22/2021 21:47
Surr: 13C2-FtS 8:2	294	S		50-150	%REC	1	4/22/2021 21:47
Surr: 13C2-PFDA	79.1			50-150	%REC	1	4/22/2021 21:47

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 28-Apr-21

Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
Sample ID: Biosolids
Collection Date: 4/13/2021 08:40 AM

Work Order: 21041507
Lab ID: 21041507-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 13C2-PFDoA	60.3			50-150	%REC	1	4/22/2021 21:47
Surr: 13C2-PFHxA	50.8			50-150	%REC	1	4/22/2021 21:47
Surr: 13C2-PFHxDA	59.0			50-150	%REC	1	4/22/2021 21:47
Surr: 13C2-PFTeA	44.9	S		50-150	%REC	1	4/22/2021 21:47
Surr: 13C2-PFUnA	65.7			50-150	%REC	1	4/22/2021 21:47
Surr: 13C3-HFPO-DA	53.4			50-150	%REC	1	4/22/2021 21:47
Surr: 13C3-PFBS	53.8			50-150	%REC	1	4/22/2021 21:47
Surr: 13C4-PFBA	61.8			50-150	%REC	1	4/22/2021 21:47
Surr: 13C4-PFHpA	59.6			50-150	%REC	1	4/22/2021 21:47
Surr: 13C4-PFOA	64.7			50-150	%REC	1	4/22/2021 21:47
Surr: 13C4-PFOS	62.9			50-150	%REC	1	4/22/2021 21:47
Surr: 13C5-PFNA	74.1			50-150	%REC	1	4/22/2021 21:47
Surr: 13C5-PFPeA	59.4			50-150	%REC	1	4/22/2021 21:47
Surr: 13C8-FOSA	47.7	S		50-150	%REC	1	4/22/2021 21:47
Surr: 18O2-PFHxS	66.1			50-150	%REC	1	4/22/2021 21:47
Surr: d5-N-EtFOSA	30.8	S		50-150	%REC	1	4/22/2021 21:47
Surr: d5-N-EtFOSAA	101			50-150	%REC	1	4/22/2021 21:47
Surr: d9-N-EtFOSE	21.6	S		50-150	%REC	1	4/22/2021 21:47
Surr: d3-N-MeFOSA	50.5			50-150	%REC	1	4/22/2021 21:47
Surr: d3-N-MeFOSAA	110			50-150	%REC	1	4/22/2021 21:47
Surr: d7-N-MeFOSE	16.6	S		50-150	%REC	1	4/22/2021 21:47
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	95		0.10	0.10	% of sample	1	4/21/2021 14:52

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 28-Apr-21

Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
Sample ID: Influent
Collection Date: 4/13/2021 09:47 AM

Work Order: 21041507
Lab ID: 21041507-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED							
			Method: E537 MOD		Prep: E537 Mod / 4/19/21		Analyst: AK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		1.1	6.1	ng/L	1	4/19/2021 23:51
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	1.9	J	0.81	6.1	ng/L	1	4/19/2021 23:51
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.4	6.1	ng/L	1	4/19/2021 23:51
Perfluorobutanesulfonic Acid (PFBS)	20		0.43	6.1	ng/L	1	4/19/2021 23:51
Perfluorobutanoic Acid (PFBA)	5.7	J	3.2	6.1	ng/L	1	4/19/2021 23:51
Perfluorodecanesulfonic Acid (PFDS)	U		1.7	6.1	ng/L	1	4/19/2021 23:51
Perfluorodecanoic Acid (PFDA)	U		1.5	6.1	ng/L	1	4/19/2021 23:51
Perfluorododecanoic Acid (PFDoA)	U		1.7	6.1	ng/L	1	4/19/2021 23:51
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.69	6.1	ng/L	1	4/19/2021 23:51
Perfluoroheptanoic Acid (PFHpA)	1.8	J	0.54	6.1	ng/L	1	4/19/2021 23:51
Perfluorohexanesulfonic Acid (PFHxS)	3.4	J	0.45	6.1	ng/L	1	4/19/2021 23:51
Perfluorohexanoic Acid (PFHxA)	11		1.5	6.1	ng/L	1	4/19/2021 23:51
Perfluorononanesulfonic Acid (PFNS)	1.3	J	0.60	6.1	ng/L	1	4/19/2021 23:51
Perfluorononanoic Acid (PFNA)	U		1.1	6.1	ng/L	1	4/19/2021 23:51
Perfluorooctanesulfonamide (PFOSA)	U		0.87	6.1	ng/L	1	4/19/2021 23:51
Perfluorooctanesulfonic Acid (PFOS)	5.7		1.1	2.4	ng/L	1	4/19/2021 23:51
Perfluorooctanoic Acid (PFOA)	4.3		0.86	2.4	ng/L	1	4/19/2021 23:51
Perfluoropentanesulfonic Acid (PFPeS)	U		0.68	6.1	ng/L	1	4/19/2021 23:51
Perfluoropentanoic Acid (PFPeA)	34		1.6	6.1	ng/L	1	4/19/2021 23:51
Perfluorotetradecanoic Acid (PFTeA)	U		3.2	6.1	ng/L	1	4/19/2021 23:51
Perfluorotridecanoic Acid (PFTriA)	U		0.94	6.1	ng/L	1	4/19/2021 23:51
Perfluoroundecanoic Acid (PFUnA)	U		1.2	6.1	ng/L	1	4/19/2021 23:51
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.76	6.1	ng/L	1	4/19/2021 23:51
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.79	6.1	ng/L	1	4/19/2021 23:51
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.4	6.1	ng/L	1	4/19/2021 23:51
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.69	6.1	ng/L	1	4/19/2021 23:51
11Cl-Pf3OUdS	U		0.57	6.1	ng/L	1	4/19/2021 23:51
9Cl-PF3ONS	U		0.55	6.1	ng/L	1	4/19/2021 23:51
Surr: 13C2-FtS 4:2	368	S		50-150	%REC	1	4/19/2021 23:51
Surr: 13C2-FtS 6:2	515	S		50-150	%REC	1	4/19/2021 23:51

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 28-Apr-21

Client: Genesee County WWS

Project: GCDCWWS - ARTP (04.13.21)

Sample ID: Influent

Collection Date: 4/13/2021 09:47 AM

Work Order: 21041507

Lab ID: 21041507-03

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 13C2-FtS 8:2	282	S		50-150	%REC	1	4/19/2021 23:51
Surr: 13C2-PFDA	87.7			50-150	%REC	1	4/19/2021 23:51
Surr: 13C2-PFDoA	46.1	S		50-150	%REC	1	4/19/2021 23:51
Surr: 13C2-PFHxA	67.5			50-150	%REC	1	4/19/2021 23:51
Surr: 13C2-PFHxDA	56.0			50-150	%REC	1	4/19/2021 23:51
Surr: 13C2-PFTeA	54.4			50-150	%REC	1	4/19/2021 23:51
Surr: 13C2-PFUnA	69.7			50-150	%REC	1	4/19/2021 23:51
Surr: 13C3-HFPO-DA	73.6			50-150	%REC	1	4/19/2021 23:51
Surr: 13C3-PFBS	80.4			50-150	%REC	1	4/19/2021 23:51
Surr: 13C4-PFBA	75.8			50-150	%REC	1	4/19/2021 23:51
Surr: 13C4-PFHpA	76.8			50-150	%REC	1	4/19/2021 23:51
Surr: 13C4-PFOA	74.5			50-150	%REC	1	4/19/2021 23:51
Surr: 13C4-PFOS	72.2			50-150	%REC	1	4/19/2021 23:51
Surr: 13C5-PFNA	93.4			50-150	%REC	1	4/19/2021 23:51
Surr: 13C5-PFPeA	82.9			50-150	%REC	1	4/19/2021 23:51
Surr: 13C8-FOSA	23.0	S		50-150	%REC	1	4/19/2021 23:51
Surr: 18O2-PFHxS	71.0			50-150	%REC	1	4/19/2021 23:51
Surr: d5-N-EtFOSA	57.8			50-150	%REC	1	4/19/2021 23:51
Surr: d5-N-EtFOSAA	97.2			50-150	%REC	1	4/19/2021 23:51
Surr: d9-N-EtFOSE	51.6			50-150	%REC	1	4/19/2021 23:51
Surr: d3-N-MeFOSA	60.5			50-150	%REC	1	4/19/2021 23:51
Surr: d3-N-MeFOSAA	111			50-150	%REC	1	4/19/2021 23:51
Surr: d7-N-MeFOSE	56.1			50-150	%REC	1	4/19/2021 23:51

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 28-Apr-21

Client: Genesee County WWS
Project: GCDCWWS - ARTP (04.13.21)
Sample ID: Effluent
Collection Date: 4/13/2021 10:05 AM

Work Order: 21041507
Lab ID: 21041507-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED							
			Method: E537 MOD		Prep: E537 Mod / 4/19/21		Analyst: AK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.96	5.1	ng/L	1	4/20/2021 00:01
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	2.8	J	0.68	5.1	ng/L	1	4/20/2021 00:01
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.1	ng/L	1	4/20/2021 00:01
Perfluorobutanesulfonic Acid (PFBS)	34		0.36	5.1	ng/L	1	4/20/2021 00:01
Perfluorobutanoic Acid (PFBA)	11		2.7	5.1	ng/L	1	4/20/2021 00:01
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.1	ng/L	1	4/20/2021 00:01
Perfluorodecanoic Acid (PFDA)	U		1.3	5.1	ng/L	1	4/20/2021 00:01
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.1	ng/L	1	4/20/2021 00:01
Perfluoroheptanesulfonic Acid (PFHpS)	1.2	J	0.58	5.1	ng/L	1	4/20/2021 00:01
Perfluoroheptanoic Acid (PFHpA)	3.7	J	0.45	5.1	ng/L	1	4/20/2021 00:01
Perfluorohexanesulfonic Acid (PFHxS)	6.1		0.38	5.1	ng/L	1	4/20/2021 00:01
Perfluorohexanoic Acid (PFHxA)	30		1.2	5.1	ng/L	1	4/20/2021 00:01
Perfluorononanesulfonic Acid (PFNS)	U		0.51	5.1	ng/L	1	4/20/2021 00:01
Perfluorononanoic Acid (PFNA)	0.94	J	0.89	5.1	ng/L	1	4/20/2021 00:01
Perfluorooctanesulfonamide (PFOSA)	U		0.73	5.1	ng/L	1	4/20/2021 00:01
Perfluorooctanesulfonic Acid (PFOS)	4.1		0.91	2.0	ng/L	1	4/20/2021 00:01
Perfluorooctanoic Acid (PFOA)	6.8		0.72	2.0	ng/L	1	4/20/2021 00:01
Perfluoropentanesulfonic Acid (PFPeS)	U		0.57	5.1	ng/L	1	4/20/2021 00:01
Perfluoropentanoic Acid (PFPeA)	9.6		1.3	5.1	ng/L	1	4/20/2021 00:01
Perfluorotetradecanoic Acid (PFTeA)	U		2.7	5.1	ng/L	1	4/20/2021 00:01
Perfluorotridecanoic Acid (PFTriA)	U		0.79	5.1	ng/L	1	4/20/2021 00:01
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.1	ng/L	1	4/20/2021 00:01
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.64	5.1	ng/L	1	4/20/2021 00:01
N-Methylperfluorooctanesulfonamidoacetic Acid	1.6	J	0.66	5.1	ng/L	1	4/20/2021 00:01
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.1	ng/L	1	4/20/2021 00:01
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.58	5.1	ng/L	1	4/20/2021 00:01
11Cl-Pf3OUdS	U		0.48	5.1	ng/L	1	4/20/2021 00:01
9Cl-PF3ONS	U		0.46	5.1	ng/L	1	4/20/2021 00:01
Surr: 13C2-FtS 4:2	272	S		50-150	%REC	1	4/20/2021 00:01
Surr: 13C2-FtS 6:2	246	S		50-150	%REC	1	4/20/2021 00:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 28-Apr-21

Client: Genesee County WWS

Project: GCDCWWS - ARTP (04.13.21)

Sample ID: Effluent

Collection Date: 4/13/2021 10:05 AM

Work Order: 21041507

Lab ID: 21041507-04

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 13C2-FtS 8:2	244	S		50-150	%REC	1	4/20/2021 00:01
Surr: 13C2-PFDA	81.0			50-150	%REC	1	4/20/2021 00:01
Surr: 13C2-PFDoA	48.5	S		50-150	%REC	1	4/20/2021 00:01
Surr: 13C2-PFHxA	59.6			50-150	%REC	1	4/20/2021 00:01
Surr: 13C2-PFHxDA	33.6	S		50-150	%REC	1	4/20/2021 00:01
Surr: 13C2-PFTeA	36.0	S		50-150	%REC	1	4/20/2021 00:01
Surr: 13C2-PFUnA	86.1			50-150	%REC	1	4/20/2021 00:01
Surr: 13C3-HFPO-DA	54.3			50-150	%REC	1	4/20/2021 00:01
Surr: 13C3-PFBS	54.9			50-150	%REC	1	4/20/2021 00:01
Surr: 13C4-PFBA	59.8			50-150	%REC	1	4/20/2021 00:01
Surr: 13C4-PFHpA	52.8			50-150	%REC	1	4/20/2021 00:01
Surr: 13C4-PFOA	76.3			50-150	%REC	1	4/20/2021 00:01
Surr: 13C4-PFOS	62.1			50-150	%REC	1	4/20/2021 00:01
Surr: 13C5-PFNA	85.3			50-150	%REC	1	4/20/2021 00:01
Surr: 13C5-PFPeA	52.1			50-150	%REC	1	4/20/2021 00:01
Surr: 13C8-FOSA	50.8			50-150	%REC	1	4/20/2021 00:01
Surr: 18O2-PFHxS	54.3			50-150	%REC	1	4/20/2021 00:01
Surr: d5-N-EtFOSA	44.7	S		50-150	%REC	1	4/20/2021 00:01
Surr: d5-N-EtFOSAA	103			50-150	%REC	1	4/20/2021 00:01
Surr: d9-N-EtFOSE	51.1			50-150	%REC	1	4/20/2021 00:01
Surr: d3-N-MeFOSA	42.2	S		50-150	%REC	1	4/20/2021 00:01
Surr: d3-N-MeFOSAA	76.9			50-150	%REC	1	4/20/2021 00:01
Surr: d7-N-MeFOSE	54.3			50-150	%REC	1	4/20/2021 00:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Genesee County WWS

Work Order: 21041507

Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306

Instrument ID LCMS1

Method: E537 Mod

MBLK		Sample ID: MBLK-175306-175306				Units: ng/L		Analysis Date: 4/19/2021 10:17 PM			
Client ID:		Run ID: LCMS1_210419A				SeqNo: 7320825		Prep Date: 4/19/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	U	0.94	5.0								
Fluorotelomer Sulphonic Acid	U	0.66	5.0								
Fluorotelomer Sulphonic Acid	U	1.1	5.0								
Perfluorobutanesulfonic Acid (	U	0.35	5.0								
Perfluorobutanoic Acid (PFBA	U	2.6	5.0								
Perfluorodecanesulfonic Acid (	U	1.4	5.0								
Perfluorodecanoic Acid (PFDA	U	1.2	5.0								
Perfluorododecanoic Acid (PF	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexanesulfonic Acid (	0.5248	0.37	5.0								J
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid (	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.7	2.0								
Perfluoropentanesulfonic Acid	U	0.56	5.0								
Perfluoropentanoic Acid (PFPe	U	1.3	5.0								
Perfluorotetradecanoic Acid (F	U	2.6	5.0								
Perfluorotridecanoic Acid (PF	U	0.77	5.0								
Perfluoroundecanoic Acid (PF	U	0.97	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
Hexafluoropropylene oxide din	U	1.2	5.0								
4,8-Dioxa-3H-perfluorononano	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	131.8	0	0	149.4	0	88.2	50-150	0			
Surr: 13C2-FtS 6:2	142.5	0	0	152	0	93.8	50-150	0			
Surr: 13C2-FtS 8:2	174.5	0	0	153.3	0	114	50-150	0			
Surr: 13C2-PFDA	117	0	0	160	0	73.1	50-150	0			
Surr: 13C2-PFDoA	99.34	0	0	160	0	62.1	50-150	0			
Surr: 13C2-PFHxA	108.3	0	0	160	0	67.7	50-150	0			
Surr: 13C2-PFHxDA	125.8	0	0	160	0	78.7	50-150	0			
Surr: 13C2-PFTeA	160.5	0	0	160	0	100	50-150	0			
Surr: 13C2-PFUnA	141.2	0	0	160	0	88.2	50-150	0			
Surr: 13C3-HFPO-DA	127.9	0	0	160	0	80	50-150	0			
Surr: 13C3-PFBS	115.8	0	0	148.8	0	77.8	50-150	0			
Surr: 13C4-PFBA	109.7	0	0	160	0	68.5	50-150	0			
Surr: 13C4-PFHpA	103.9	0	0	160	0	65	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
Work Order: 21041507
Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306		Instrument ID LCMS1		Method: E537 Mod					
<i>Surr: 13C4-PFOA</i>	<i>108.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>67.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>100.1</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>65.5</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>130.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>81.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>121.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>75.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>113.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>118.6</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>78.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>103.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>64.5</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>177.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>111</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>115.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>72.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>107</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>123.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>76.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>105.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>65.8</i>	<i>50-150</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306 Instrument ID LCMS1 Method: E537 Mod

LCS Sample ID: LCS-175306-175306					Units: ng/L			Analysis Date: 4/19/2021 10:27 PM			
Client ID:		Run ID: LCMS1_210419A			SeqNo: 7320829		Prep Date: 4/19/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.42	0.94	5.0	29.9	0	115	63-143	0			
Fluorotelomer Sulphonic Acid	31.48	0.66	5.0	30.3	0	104	64-140	0			
Fluorotelomer Sulphonic Acid	32.87	1.1	5.0	30.7	0	107	67-138	0			
Perfluorobutanesulfonic Acid (	27.55	0.35	5.0	28.3	0	97.3	72-130	0			
Perfluorobutanoic Acid (PFBA	37.77	2.6	5.0	32	0	118	73-129	0			
Perfluorodecanesulfonic Acid (	31.25	1.4	5.0	30.8	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	34.92	1.2	5.0	32	0	109	71-129	0			
Perfluorododecanoic Acid (PF	37.87	1.4	5.0	32	0	118	72-134	0			
Perfluoroheptanesulfonic Acid	36.92	0.57	5.0	30.5	0	121	69-134	0			
Perfluoroheptanoic Acid (PFH	27.34	0.44	5.0	32	0	85.4	72-130	0			
Perfluorohexanesulfonic Acid (	31.44	0.37	5.0	29.1	0	108	68-131	0			
Perfluorohexanoic Acid (PFHx	37.98	1.2	5.0	32	0	119	72-129	0			
Perfluorononanesulfonic Acid (	35.26	0.5	5.0	30.7	0	115	69-127	0			
Perfluorononanoic Acid (PFNA	38.56	0.87	5.0	32	0	120	69-130	0			
Perfluorooctanesulfonamide (F	30.45	0.71	5.0	32	0	95.2	67-137	0			
Perfluorooctanesulfonic Acid (	33.39	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	34.17	0.7	2.0	32	0	107	71-133	0			
Perfluoropentanesulfonic Acid	33.91	0.56	5.0	30	0	113	71-127	0			
Perfluoropentanoic Acid (PFPe	30.15	1.3	5.0	32	0	94.2	72-129	0			
Perfluorotetradecanoic Acid (F	24.8	2.6	5.0	32	0	77.5	71-132	0			
Perfluoroundecanoic Acid (PF	37.02	0.97	5.0	32	0	116	69-133	0			
N-Ethylperfluorooctanesulfona	28.5	0.63	5.0	32	0	89	61-135	0			
N-Methylperfluorooctanesulfor	29.93	0.64	5.0	32	0	93.5	65-136	0			
Hexafluoropropylene oxide din	31.62	1.2	5.0	32	0	98.8	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.2	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	32.75	0.47	5.0	30.1	0	109	70-130	0			
9Cl-PF3ONS	31.02	0.45	5.0	29.8	0	104	70-130	0			
Surr: 13C2-FtS 4:2	136.9	0	0	149.4	0	91.6	50-150	0			
Surr: 13C2-FtS 6:2	159.5	0	0	152	0	105	50-150	0			
Surr: 13C2-FtS 8:2	178.8	0	0	153.3	0	117	50-150	0			
Surr: 13C2-PFDA	131.1	0	0	160	0	81.9	50-150	0			
Surr: 13C2-PFDoA	129.3	0	0	160	0	80.8	50-150	0			
Surr: 13C2-PFHxA	118.7	0	0	160	0	74.2	50-150	0			
Surr: 13C2-PFHxDA	146.6	0	0	160	0	91.6	50-150	0			
Surr: 13C2-PFTeA	185.1	0	0	160	0	116	50-150	0			
Surr: 13C2-PFUnA	131.4	0	0	160	0	82.1	50-150	0			
Surr: 13C3-HFPO-DA	125	0	0	160	0	78.1	50-150	0			
Surr: 13C3-PFBS	124.8	0	0	148.8	0	83.9	50-150	0			
Surr: 13C4-PFBA	119.3	0	0	160	0	74.6	50-150	0			
Surr: 13C4-PFHpA	151	0	0	160	0	94.4	50-150	0			
Surr: 13C4-PFOA	136	0	0	160	0	85	50-150	0			
Surr: 13C4-PFOS	120.4	0	0	152.8	0	78.8	50-150	0			
Surr: 13C5-PFNA	127.1	0	0	160	0	79.4	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
Work Order: 21041507
Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306	Instrument ID LCMS1	Method: E537 Mod							
<i>Surr: 13C5-PFPeA</i>	<i>137.9</i>	0	0	160	0	86.2	50-150	0	
<i>Surr: 13C8-FOSA</i>	<i>135.2</i>	0	0	160	0	84.5	50-150	0	
<i>Surr: 18O2-PFHxS</i>	<i>115.2</i>	0	0	151.2	0	76.2	50-150	0	
<i>Surr: d5-N-EtFOSA</i>	<i>110.4</i>	0	0	160	0	69	50-150	0	
<i>Surr: d5-N-EtFOSAA</i>	<i>162.3</i>	0	0	160	0	101	50-150	0	
<i>Surr: d9-N-EtFOSE</i>	<i>134</i>	0	0	160	0	83.8	50-150	0	
<i>Surr: d3-N-MeFOSA</i>	<i>134.7</i>	0	0	160	0	84.2	50-150	0	
<i>Surr: d3-N-MeFOSAA</i>	<i>149.8</i>	0	0	160	0	93.6	50-150	0	
<i>Surr: d7-N-MeFOSE</i>	<i>137.5</i>	0	0	160	0	85.9	50-150	0	

LCS					Sample ID: LCS-175306-175306				Units: ng/L			Analysis Date: 4/20/2021 04:09 PM		
Client ID:			Run ID: LCMS1_210420B				SeqNo: 7323739		Prep Date: 4/19/2021		DF: 1			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Perfluorotridecanoic Acid (PFT	31.68	0.77	5.0	32	0	99	65-144	0						

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306 Instrument ID LCMS1 Method: E537 Mod

MS					Sample ID: 21041549-01A MS			Units: ng/L		Analysis Date: 4/19/2021 10:38 PM		
Client ID:			Run ID: LCMS1_210419A			SeqNo: 7320833		Prep Date: 4/19/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Fluorotelomer Sulphonic Acid	28.23	0.87	4.6	27.79	0	102	63-143	0				
Fluorotelomer Sulphonic Acid	29.05	0.62	4.6	28.16	0.3618	102	64-140	0				
Fluorotelomer Sulphonic Acid	29.77	1.1	4.6	28.53	0.2441	103	67-138	0				
Perfluorobutanesulfonic Acid (	29.57	0.33	4.6	26.3	3.456	99.3	72-130	0			
Perfluorobutanoic Acid (PFBA	55.13	2.4	4.6	29.74	28.02	91.2	73-129	0				
Perfluorodecanesulfonic Acid (	27.22	1.3	4.6	28.62	0	95.1	53-142	0			
Perfluorodecanoic Acid (PFDA	32.89	1.2	4.6	29.74	0.55	109	71-129	0				
Perfluoroheptanoic Acid (PFH	37.95	0.41	4.6	29.74	6.006	107	72-130	0				
Perfluorohexanesulfonic Acid (	37.47	0.34	4.6	27.04	7.156	112	68-131	0			
Perfluorohexanoic Acid (PFHx	46.7	1.1	4.6	29.74	9.691	124	72-129	0				
Perfluorononanesulfonic Acid (	24.43	0.46	4.6	28.53	0	85.6	69-127	0			
Perfluorononanoic Acid (PFNA	37.3	0.81	4.6	29.74	2.462	117	69-130	0				
Perfluorooctanesulfonamide (F	29.12	0.66	4.6	29.74	0.5441	96.1	67-137	0				
Perfluorooctanesulfonic Acid (	148.9	0.83	1.9	27.6	113.3	129	65-140	0			O
Perfluorooctanoic Acid (PFOA	69.87	0.66	1.9	29.74	34.34	119	71-133	0				
Perfluoropentanesulfonic Acid	36.72	0.52	4.6	27.88	2.576	122	71-127	0				
Perfluoropentanoic Acid (PFPe	31.49	1.2	4.6	29.74	3.721	93.4	72-129	0				
Perfluorotetradecanoic Acid (F	24.95	2.5	4.6	29.74	0.1206	83.5	71-132	0				
Perfluorotridecanoic Acid (PFT	20.65	0.72	4.6	29.74	0.06471	69.2	65-144	0				
Perfluoroundecanoic Acid (PF	36.7	0.91	4.6	29.74	1.809	117	69-133	0				
N-Methylperfluorooctanesulfor	40.75	0.6	4.6	29.74	9.156	106	65-136	0				
Hexafluoropropylene oxide din	25.27	1.1	4.6	29.74	0.6176	82.9	70-130	0				
11Cl-Pf3OUdS	32.08	0.43	4.6	27.97	0	115	70-130	0				
Surr: 13C2-FtS 4:2	530.5	0	0	138.9	0	382	50-150	0			S	
Surr: 13C2-FtS 6:2	564	0	0	141.3	0	399	50-150	0			S	
Surr: 13C2-FtS 8:2	625.6	0	0	142.5	0	439	50-150	0			S	
Surr: 13C2-PFDA	106.8	0	0	148.7	0	71.8	50-150	0				
Surr: 13C2-PFDoA	80.14	0	0	148.7	0	53.9	50-150	0				
Surr: 13C2-PFHxA	78.44	0	0	148.7	0	52.8	50-150	0				
Surr: 13C2-PFHxDA	96.14	0	0	148.7	0	64.7	50-150	0				
Surr: 13C2-PFTeA	108.2	0	0	148.7	0	72.8	50-150	0				
Surr: 13C2-PFUnA	102.4	0	0	148.7	0	68.9	50-150	0				
Surr: 13C3-HFPO-DA	97.42	0	0	148.7	0	65.5	50-150	0				
Surr: 13C3-PFBS	93.74	0	0	138.3	0	67.8	50-150	0				
Surr: 13C4-PFBA	83.17	0	0	148.7	0	55.9	50-150	0				
Surr: 13C4-PFHpA	102	0	0	148.7	0	68.6	50-150	0				
Surr: 13C4-PFOA	101.6	0	0	148.7	0	68.3	50-150	0				
Surr: 13C4-PFOS	85.19	0	0	142	0	60	50-150	0				
Surr: 13C5-PFNA	113.5	0	0	148.7	0	76.3	50-150	0				
Surr: 13C5-PFPeA	82.88	0	0	148.7	0	55.7	50-150	0				
Surr: 13C8-FOSA	101	0	0	148.7	0	68	50-150	0				
Surr: 18O2-PFHxS	71.59	0	0	140.5	0	50.9	50-150	0				
Surr: d5-N-EtFOSA	71.38	0	0	148.7	0	48	50-150	0			S	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306	Instrument ID LCMS1	Method: E537 Mod						
<i>Surr: d5-N-EtFOSAA</i>	<i>134</i>	0	0	148.7	0	90.1	50-150	0
<i>Surr: d9-N-EtFOSE</i>	<i>83.71</i>	0	0	148.7	0	56.3	50-150	0
<i>Surr: d3-N-MeFOSA</i>	<i>76.22</i>	0	0	148.7	0	51.3	50-150	0
<i>Surr: d3-N-MeFOSAA</i>	<i>123.9</i>	0	0	148.7	0	83.4	50-150	0
<i>Surr: d7-N-MeFOSE</i>	<i>108.3</i>	0	0	148.7	0	72.8	50-150	0

MS		Sample ID: 21041549-01A MS				Units: ng/L		Analysis Date: 4/20/2021 04:19 PM			
Client ID:		Run ID: LCMS1_210420B				SeqNo: 7323740		Prep Date: 4/19/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorododecanoic Acid (PF)	34.74	1.3	4.6	29.74	0	117	72-134	0			
Perfluoroheptanesulfonic Acid	31.43	0.53	4.6	28.35	4.638	94.5	69-134	0			
N-Ethylperfluorooctanesulfona	43.47	0.58	4.6	29.74	17.06	88.8	61-135	0			
4,8-Dioxa-3H-perfluorononano	20.81	0.52	4.6	27.97	0	74.4	70-130	0			
9CI-PF3ONS	32.57	0.42	4.6	27.7	0	118	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306 Instrument ID LCMS1 Method: E537 Mod

DUP Sample ID: 21041549-02A DUP					Units: ng/L			Analysis Date: 4/20/2021 04:30 PM			
Client ID:		Run ID: LCMS1_210420B			SeqNo: 7323741		Prep Date: 4/19/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	U	0.87	4.6	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.61	4.6	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	1	4.6	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (PFBS)	4.643	0.32	4.6	0	0	0	0-0	4.325	7.1	30	
Perfluorobutanoic Acid (PFBA)	20.05	2.4	4.6	0	0	0	0-0	22.39	11	30	
Perfluorodecanesulfonic Acid (PFDS)	U	1.3	4.6	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA)	U	1.1	4.6	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFDA)	U	1.3	4.6	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid (PFHpS)	4.166	0.52	4.6	0	0	0	0-0	4.145	0	30	J
Perfluoroheptanoic Acid (PFHpA)	7.055	0.41	4.6	0	0	0	0-0	7.371	4.38	30	
Perfluorohexanesulfonic Acid (PFHxS)	10.66	0.34	4.6	0	0	0	0-0	9.483	11.7	30	
Perfluorohexanoic Acid (PFHxA)	11.82	1.1	4.6	0	0	0	0-0	9.859	18.1	30	
Perfluorononanesulfonic Acid (PFNS)	U	0.46	4.6	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA)	2.83	0.81	4.6	0	0	0	0-0	2.272	0	30	J
Perfluorooctanesulfonamide (PFOSA)	U	0.66	4.6	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonic Acid (PFOS)	119.4	0.83	1.9	0	0	0	0-0	112.1	6.27	30	
Perfluorooctanoic Acid (PFOA)	41.25	0.65	1.9	0	0	0	0-0	39.01	5.59	30	
Perfluoropentanesulfonic Acid (PFPS)	3.716	0.51	4.6	0	0	0	0-0	4.065	0	30	J
Perfluoropentanoic Acid (PFPA)	4.954	1.2	4.6	0	0	0	0-0	3.932	23	30	
Perfluorotetradecanoic Acid (PFTrA)	U	2.4	4.6	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFTrA)	U	0.71	4.6	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFUnA)	2.889	0.9	4.6	0	0	0	0-0	2.722	0	30	J
N-Ethylperfluorooctanesulfonamide (F53)	17.17	0.58	4.6	0	0	0	0-0	17.63	2.65	30	
N-Methylperfluorooctanesulfonamide (F54)	10.28	0.6	4.6	0	0	0	0-0	10.22	0.507	30	
Hexafluoropropylene oxide dimer (HFPO-DA)	UI	1.1	4.6	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononanoic Acid (PFNOA)	U	0.52	4.6	0	0	0	0-0	0	0	30	
11CI-Pf3OUdS	U	0.43	4.6	0	0	0	0-0	0	0	30	
9CI-PF3ONS	U	0.41	4.6	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	568.4	0	0	138.4	0	411	50-150	572.2	0.658	30	S
Surr: 13C2-FtS 6:2	613.5	0	0	140.7	0	436	50-150	573.5	6.74	30	S
Surr: 13C2-FtS 8:2	625.5	0	0	141.9	0	441	50-150	626.8	0.212	30	S
Surr: 13C2-PFDA	112.4	0	0	148.1	0	75.9	50-150	114.6	1.91	30	
Surr: 13C2-PFDoA	81.86	0	0	148.1	0	55.3	50-150	93.92	13.7	30	
Surr: 13C2-PFHxA	75.17	0	0	148.1	0	50.7	50-150	79.13	5.14	30	
Surr: 13C2-PFHxDA	93.21	0	0	148.1	0	62.9	50-150	95.63	2.56	30	
Surr: 13C2-PFTEA	93.15	0	0	148.1	0	62.9	50-150	122.5	27.2	30	
Surr: 13C2-PFUnA	112.2	0	0	148.1	0	75.7	50-150	107	4.73	30	
Surr: 13C3-HFPO-DA	99.38	0	0	148.1	0	67.1	50-150	88.17	12	30	
Surr: 13C3-PFBS	95.94	0	0	137.8	0	69.6	50-150	94.94	1.05	30	
Surr: 13C4-PFBA	80.02	0	0	148.1	0	54	50-150	80.81	0.98	30	
Surr: 13C4-PFHxA	94.75	0	0	148.1	0	64	50-150	111.4	16.1	30	
Surr: 13C4-PFOA	108.4	0	0	148.1	0	73.2	50-150	107.5	0.784	30	
Surr: 13C4-PFOS	87.34	0	0	141.5	0	61.7	50-150	87.6	0.297	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
Work Order: 21041507
Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175306		Instrument ID LCMS1		Method: E537 Mod						
<i>Surr: 13C5-PFNA</i>	<i>102.6</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>69.3</i>	<i>50-150</i>	<i>107.7</i>	<i>4.88</i>	<i>30</i>
<i>Surr: 13C5-PFPeA</i>	<i>83.72</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>56.5</i>	<i>50-150</i>	<i>80.15</i>	<i>4.36</i>	<i>30</i>
<i>Surr: 13C8-FOSA</i>	<i>112.5</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>75.9</i>	<i>50-150</i>	<i>106.9</i>	<i>5.05</i>	<i>30</i>
<i>Surr: 18O2-PFHxS</i>	<i>82.15</i>	<i>0</i>	<i>0</i>	<i>140</i>	<i>0</i>	<i>58.7</i>	<i>50-150</i>	<i>74.32</i>	<i>10</i>	<i>30</i>
<i>Surr: d5-N-EtFOSA</i>	<i>86.02</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>58.1</i>	<i>50-150</i>	<i>78.9</i>	<i>8.64</i>	<i>30</i>
<i>Surr: d5-N-EtFOSAA</i>	<i>187.9</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>127</i>	<i>50-150</i>	<i>158.7</i>	<i>16.8</i>	<i>30</i>
<i>Surr: d9-N-EtFOSE</i>	<i>94.17</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>63.6</i>	<i>50-150</i>	<i>94.01</i>	<i>0.172</i>	<i>30</i>
<i>Surr: d3-N-MeFOSA</i>	<i>81.46</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>55</i>	<i>50-150</i>	<i>92.44</i>	<i>12.6</i>	<i>30</i>
<i>Surr: d3-N-MeFOSAA</i>	<i>153.8</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>104</i>	<i>50-150</i>	<i>140.1</i>	<i>9.31</i>	<i>30</i>
<i>Surr: d7-N-MeFOSE</i>	<i>105.8</i>	<i>0</i>	<i>0</i>	<i>148.1</i>	<i>0</i>	<i>71.4</i>	<i>50-150</i>	<i>116.8</i>	<i>9.87</i>	<i>30</i>

The following samples were analyzed in this batch:

21041507-03A	21041507-04A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175554 Instrument ID LCMS1 Method: E537 Mod

MBLK		Sample ID: MBLK-175554-175554				Units: µg/Kg			Analysis Date: 4/22/2021 08:55 PM		
Client ID:		Run ID: LCMS1_210422B				SeqNo: 7331649			Prep Date: 4/22/2021		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	U	0.29	1.0								
Fluorotelomer Sulphonic Acid	U	0.28	1.0								
Fluorotelomer Sulphonic Acid	U	0.52	1.0								
Perfluorobutanesulfonic Acid (	U	0.12	1.0								
Perfluorobutanoic Acid (PFBA	U	0.27	1.0								
Perfluorodecanesulfonic Acid (	U	0.56	1.0								
Perfluorodecanoic Acid (PFDA	U	0.16	1.0								
Perfluorododecanoic Acid (PFI	U	0.31	1.0								
Perfluoroheptanesulfonic Acid	U	0.53	1.0								
Perfluoroheptanoic Acid (PFH	U	0.23	1.0								
Perfluorohexanesulfonic Acid (	U	0.21	1.0								
Perfluorohexanoic Acid (PFHx	U	0.15	1.0								
Perfluorononanesulfonic Acid (	U	0.17	1.0								
Perfluorononanoic Acid (PFNA	U	0.15	1.0								
Perfluorooctanesulfonamide (F	U	0.24	1.0								
Perfluorooctanesulfonic Acid (	U	0.19	1.0								
Perfluorooctanoic Acid (PFOA	U	0.17	1.0								
Perfluoropentanesulfonic Acid	U	0.42	1.0								
Perfluoropentanoic Acid (PFPe	U	0.12	1.0								
Perfluorotetradecanoic Acid (F	U	0.22	1.0								
Perfluorotridecanoic Acid (PFI	U	0.66	1.0								
Perfluoroundecanoic Acid (PFI	U	0.3	1.0								
N-Ethylperfluorooctanesulfona	U	0.64	1.0								
N-Methylperfluorooctanesulfor	U	0.65	1.0								
Hexafluoropropylene oxide din	U	0.35	1.0								
4,8-Dioxa-3H-perfluorononano	U	0.6	1.0								
11Cl-Pf3OUdS	U	0.24	1.0								
9Cl-PF3ONS	U	0.14	1.0								
Surr: 13C2-FtS 4:2	16.48	0	0	18.68	0	88.2	50-150	0			
Surr: 13C2-FtS 6:2	17.03	0	0	19	0	89.6	50-150	0			
Surr: 13C2-FtS 8:2	17.84	0	0	19.16	0	93.1	50-150	0			
Surr: 13C2-PFDA	16.65	0	0	20	0	83.2	50-150	0			
Surr: 13C2-PFDoA	16.44	0	0	20	0	82.2	50-150	0			
Surr: 13C2-PFHxA	17.63	0	0	20	0	88.1	50-150	0			
Surr: 13C2-PFHxDA	17.74	0	0	20	0	88.7	50-150	0			
Surr: 13C2-PFTeA	18.12	0	0	20	0	90.6	50-150	0			
Surr: 13C2-PFUnA	15.49	0	0	20	0	77.4	50-150	0			
Surr: 13C3-HFPO-DA	17.13	0	0	20	0	85.7	50-150	0			
Surr: 13C3-PFBS	15.25	0	0	18.6	0	82	50-150	0			
Surr: 13C4-PFBA	16.26	0	0	20	0	81.3	50-150	0			
Surr: 13C4-PFHpA	19.89	0	0	20	0	99.5	50-150	0			
Surr: 13C4-PFOA	17.98	0	0	20	0	89.9	50-150	0			
Surr: 13C4-PFOS	16.19	0	0	19.1	0	84.8	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
Work Order: 21041507
Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175554		Instrument ID LCMS1		Method: E537 Mod					
<i>Surr: 13C5-PFNA</i>	<i>17.41</i>	0	0	20	0	87	50-150	0	
<i>Surr: 13C5-PFPeA</i>	<i>16.25</i>	0	0	20	0	81.3	50-150	0	
<i>Surr: 13C8-FOSA</i>	<i>16.86</i>	0	0	20	0	84.3	50-150	0	
<i>Surr: 18O2-PFHxS</i>	<i>14.67</i>	0	0	18.9	0	77.6	50-150	0	
<i>Surr: d5-N-EtFOSA</i>	<i>17.35</i>	0	0	20	0	86.8	50-150	0	
<i>Surr: d5-N-EtFOSAA</i>	<i>16.41</i>	0	0	20	0	82.1	50-150	0	
<i>Surr: d9-N-EtFOSE</i>	<i>16.75</i>	0	0	20	0	83.8	50-150	0	
<i>Surr: d3-N-MeFOSA</i>	<i>15.76</i>	0	0	20	0	78.8	50-150	0	
<i>Surr: d3-N-MeFOSAA</i>	<i>16.79</i>	0	0	20	0	84	50-150	0	
<i>Surr: d7-N-MeFOSE</i>	<i>17.77</i>	0	0	20	0	88.9	50-150	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175554 Instrument ID LCMS1 Method: E537 Mod

LCS Sample ID: LCS-175554-175554					Units: µg/Kg			Analysis Date: 4/22/2021 09:05 PM			
Client ID:		Run ID: LCMS1_210422B			SeqNo: 7331650		Prep Date: 4/22/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	3.865	0.29	1.0	3.736	0	103	62-145	0			
Fluorotelomer Sulphonic Acid	4.144	0.28	1.0	3.792	0	109	64-140	0			
Fluorotelomer Sulphonic Acid	4.702	0.52	1.0	3.832	0	123	65-137	0			
Perfluorobutanesulfonic Acid	3.704	0.12	1.0	3.536	0	105	72-128	0			
Perfluorobutanoic Acid (PFBA)	4.602	0.27	1.0	4	0	115	71-135	0			
Perfluorodecanesulfonic Acid	4.14	0.56	1.0	3.856	0	107	59-134	0			
Perfluorodecanoic Acid (PFDA)	4.133	0.16	1.0	4	0	103	69-133	0			
Perfluorododecanoic Acid (PFDA)	4.38	0.31	1.0	4	0	109	69-135	0			
Perfluoroheptanesulfonic Acid	4.439	0.53	1.0	3.808	0	117	70-132	0			
Perfluoroheptanoic Acid (PFHx)	3.894	0.23	1.0	4	0	97.4	71-131	0			
Perfluorohexanesulfonic Acid	3.528	0.21	1.0	3.64	0	96.9	67-130	0			
Perfluorohexanoic Acid (PFHx)	4.291	0.15	1.0	4	0	107	70-132	0			
Perfluorononanesulfonic Acid	4.501	0.17	1.0	3.84	0	117	69-125	0			
Perfluorononanoic Acid (PFNA)	4.419	0.15	1.0	4	0	110	72-129	0			
Perfluorooctanesulfonamide (F)	4.183	0.24	1.0	4	0	105	67-137	0			
Perfluorooctanesulfonic Acid	3.842	0.19	1.0	3.712	0	104	68-136	0			
Perfluorooctanoic Acid (PFOA)	4.016	0.17	1.0	4	0	100	69-133	0			
Perfluoropentanesulfonic Acid	4.164	0.42	1.0	3.752	0	111	73-123	0			
Perfluoropentanoic Acid (PFPe)	4.189	0.12	1.0	4	0	105	69-132	0			
Perfluorotetradecanoic Acid (F)	4.586	0.22	1.0	4	0	115	69-133	0			
Perfluorotridecanoic Acid (PFTr)	4.889	0.66	1.0	4	0	122	66-139	0			
Perfluoroundecanoic Acid (PFU)	4.927	0.3	1.0	4	0	123	64-136	0			
N-Ethylperfluorooctanesulfona	3.563	0.64	1.0	4	0	89.1	61-139	0			
N-Methylperfluorooctanesulfor	3.755	0.65	1.0	4	0	93.9	63-144	0			
Hexafluoropropylene oxide din	4.144	0.35	1.0	4	0	104	70-130	0			
4,8-Dioxa-3H-perfluorononano	3.572	0.6	1.0	3.768	0	94.8	70-130	0			
11Cl-Pf3OUdS	3.117	0.24	1.0	3.768	0	82.7	70-130	0			
9Cl-PF3ONS	4.218	0.14	1.0	3.728	0	113	70-130	0			
Surr: 13C2-FtS 4:2	15.82	0	0	18.68	0	84.7	50-150	0			
Surr: 13C2-FtS 6:2	16.83	0	0	19	0	88.6	50-150	0			
Surr: 13C2-FtS 8:2	16.51	0	0	19.16	0	86.2	50-150	0			
Surr: 13C2-PFDA	16.72	0	0	20	0	83.6	50-150	0			
Surr: 13C2-PFDoA	15.85	0	0	20	0	79.3	50-150	0			
Surr: 13C2-PFHxA	15.92	0	0	20	0	79.6	50-150	0			
Surr: 13C2-PFHxDA	17.52	0	0	20	0	87.6	50-150	0			
Surr: 13C2-PFTeA	16.62	0	0	20	0	83.1	50-150	0			
Surr: 13C2-PFUnA	15.86	0	0	20	0	79.3	50-150	0			
Surr: 13C3-HFPO-DA	16.37	0	0	20	0	81.8	50-150	0			
Surr: 13C3-PFBS	14.81	0	0	18.6	0	79.6	50-150	0			
Surr: 13C4-PFBA	15.22	0	0	20	0	76.1	50-150	0			
Surr: 13C4-PFHxA	20.44	0	0	20	0	102	50-150	0			
Surr: 13C4-PFOA	17.42	0	0	20	0	87.1	50-150	0			
Surr: 13C4-PFOS	15.26	0	0	19.1	0	79.9	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
Work Order: 21041507
Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175554		Instrument ID LCMS1		Method: E537 Mod					
<i>Surr: 13C5-PFNA</i>	<i>15.82</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>79.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>15.78</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>78.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>17.48</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>87.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>14.26</i>	<i>0</i>	<i>0</i>	<i>18.9</i>	<i>0</i>	<i>75.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>16.61</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>83.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>16.38</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>81.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>15.86</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>79.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>15.55</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>77.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>17.65</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>88.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>17.53</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>87.6</i>	<i>50-150</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175554 Instrument ID LCMS1 Method: E537 Mod

LCSD Sample ID: LCSD-175554-175554					Units: µg/Kg			Analysis Date: 4/22/2021 09:16 PM			
Client ID:		Run ID: LCMS1_210422B			SeqNo: 7331651		Prep Date: 4/22/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	3.577	0.29	1.0	3.736	0	95.7	62-145	3.865	7.75	30	
Fluorotelomer Sulphonic Acid	4.445	0.28	1.0	3.792	0	117	64-140	4.144	6.99	30	
Fluorotelomer Sulphonic Acid	4.512	0.52	1.0	3.832	0	118	65-137	4.702	4.14	30	
Perfluorobutanesulfonic Acid	3.535	0.12	1.0	3.536	0	100	72-128	3.704	4.67	30	
Perfluorobutanoic Acid (PFBA)	4.325	0.27	1.0	4	0	108	71-135	4.602	6.2	30	
Perfluorodecanesulfonic Acid	4.287	0.56	1.0	3.856	0	111	59-134	4.14	3.5	30	
Perfluorodecanoic Acid (PFDA)	3.924	0.16	1.0	4	0	98.1	69-133	4.133	5.19	30	
Perfluorododecanoic Acid (PF	4.061	0.31	1.0	4	0	102	69-135	4.38	7.54	30	
Perfluoroheptanesulfonic Acid	3.864	0.53	1.0	3.808	0	101	70-132	4.439	13.8	30	
Perfluoroheptanoic Acid (PFH	3.633	0.23	1.0	4	0	90.8	71-131	3.894	6.93	30	
Perfluorohexanesulfonic Acid	3.513	0.21	1.0	3.64	0	96.5	67-130	3.528	0.42	30	
Perfluorohexanoic Acid (PFHx	4.073	0.15	1.0	4	0	102	70-132	4.291	5.22	30	
Perfluorononanesulfonic Acid	4.291	0.17	1.0	3.84	0	112	69-125	4.501	4.79	30	
Perfluorononanoic Acid (PFNA	4.135	0.15	1.0	4	0	103	72-129	4.419	6.65	30	
Perfluorooctanesulfonamide (F	4.119	0.24	1.0	4	0	103	67-137	4.183	1.54	30	
Perfluorooctanesulfonic Acid	3.766	0.19	1.0	3.712	0	101	68-136	3.842	2	30	
Perfluorooctanoic Acid (PFOA	3.792	0.17	1.0	4	0	94.8	69-133	4.016	5.76	30	
Perfluoropentanesulfonic Acid	3.824	0.42	1.0	3.752	0	102	73-123	4.164	8.51	30	
Perfluoropentanoic Acid (PFPe	4.083	0.12	1.0	4	0	102	69-132	4.189	2.56	30	
Perfluorotetradecanoic Acid (F	5.022	0.22	1.0	4	0	126	69-133	4.586	9.07	30	
Perfluorotridecanoic Acid (PF	5.444	0.66	1.0	4	0	136	66-139	4.889	10.7	30	
Perfluoroundecanoic Acid (PF	4.548	0.3	1.0	4	0	114	64-136	4.927	7.99	30	
N-Ethylperfluorooctanesulfona	3.44	0.64	1.0	4	0	86	61-139	3.563	3.5	30	
N-Methylperfluorooctanesulfor	3.626	0.65	1.0	4	0	90.6	63-144	3.755	3.49	30	
Hexafluoropropylene oxide din	3.705	0.35	1.0	4	0	92.6	70-130	4.144	11.2	30	
4,8-Dioxa-3H-perfluorononano	3.679	0.6	1.0	3.768	0	97.6	70-130	3.572	2.95	30	
11Cl-Pf3OUdS	2.881	0.24	1.0	3.768	0	76.5	70-130	3.117	7.87	30	
9Cl-PF3ONS	3.962	0.14	1.0	3.728	0	106	70-130	4.218	6.27	30	
Surr: 13C2-FtS 4:2	15.34	0	0	18.68	0	82.1	50-150	15.82	3.08	30	
Surr: 13C2-FtS 6:2	16.82	0	0	19	0	88.5	50-150	16.83	0.0214	30	
Surr: 13C2-FtS 8:2	17.49	0	0	19.16	0	91.3	50-150	16.51	5.78	30	
Surr: 13C2-PFDA	16.6	0	0	20	0	83	50-150	16.72	0.723	30	
Surr: 13C2-PFDoA	17.08	0	0	20	0	85.4	50-150	15.85	7.44	30	
Surr: 13C2-PFHxA	15.78	0	0	20	0	78.9	50-150	15.92	0.898	30	
Surr: 13C2-PFHxDA	17.4	0	0	20	0	87	50-150	17.52	0.662	30	
Surr: 13C2-PFTEA	15.28	0	0	20	0	76.4	50-150	16.62	8.37	30	
Surr: 13C2-PFUnA	15.83	0	0	20	0	79.2	50-150	15.86	0.209	30	
Surr: 13C3-HFPO-DA	16.05	0	0	20	0	80.2	50-150	16.37	1.98	30	
Surr: 13C3-PFBS	15.17	0	0	18.6	0	81.6	50-150	14.81	2.46	30	
Surr: 13C4-PFBA	15.74	0	0	20	0	78.7	50-150	15.22	3.41	30	
Surr: 13C4-PFHpA	19.72	0	0	20	0	98.6	50-150	20.44	3.59	30	
Surr: 13C4-PFOA	17.5	0	0	20	0	87.5	50-150	17.42	0.447	30	
Surr: 13C4-PFOS	15.87	0	0	19.1	0	83.1	50-150	15.26	3.92	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
Work Order: 21041507
Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: 175554	Instrument ID LCMS1	Method: E537 Mod								
Surr: 13C5-PFNA	16.19	0	0	20	0	81	50-150	15.82	2.34	30
Surr: 13C5-PFPeA	16.06	0	0	20	0	80.3	50-150	15.78	1.76	30
Surr: 13C8-FOSA	17.65	0	0	20	0	88.2	50-150	17.48	0.929	30
Surr: 18O2-PFHxS	16.24	0	0	18.9	0	85.9	50-150	14.26	13	30
Surr: d5-N-EtFOSA	16.94	0	0	20	0	84.7	50-150	16.61	1.95	30
Surr: d5-N-EtFOSAA	16.35	0	0	20	0	81.8	50-150	16.38	0.169	30
Surr: d9-N-EtFOSE	16.02	0	0	20	0	80.1	50-150	15.86	1.05	30
Surr: d3-N-MeFOSA	16.05	0	0	20	0	80.3	50-150	15.55	3.21	30
Surr: d3-N-MeFOSAA	17.79	0	0	20	0	89	50-150	17.65	0.79	30
Surr: d7-N-MeFOSE	18.65	0	0	20	0	93.3	50-150	17.53	6.23	30

The following samples were analyzed in this batch:

21041507-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041507
 Project: GCDCWWS - ARTP (04.13.21)

QC BATCH REPORT

Batch ID: **R314601** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R314601				Units: % of sample			Analysis Date: 4/21/2021 02:52 PM		
Client ID:		Run ID: MOIST_210421C				SeqNo: 7327348			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.1	0.10								

LCS		Sample ID: LCS-R314601				Units: % of sample			Analysis Date: 4/21/2021 02:52 PM		
Client ID:		Run ID: MOIST_210421C				SeqNo: 7327347			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.1	0.10	100	0	100	98-102	0			

DUP		Sample ID: 21041507-01A DUP				Units: % of sample			Analysis Date: 4/21/2021 02:52 PM		
Client ID: Biosolids		Run ID: MOIST_210421C				SeqNo: 7327336			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	94.75	0.1	0.10	0	0	0	0-0	94.73	0.0211	10	

DUP		Sample ID: 21041800-01A DUP				Units: % of sample			Analysis Date: 4/21/2021 02:52 PM		
Client ID:		Run ID: MOIST_210421C				SeqNo: 7327340			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	43.88	0.1	0.10	0	0	0	0-0	44.05	0.387	10	

The following samples were analyzed in this batch: 21041507-01A



Chain of Custody Form

Page 1 of 1

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

Customer Information		Project Information					Parameter/Method Request for Analysis											
Purchase Order	2021-00035011	Project Name	GCDCWWS- ARTP			A	PFOS/ PFAS 28											
Work Order		Project Number				B												
Company Name	Genesee County Water and Waste Service	Bill To Company	Genesee County Water and Waste Service			C												
Send Report To	Thad Domick	Invoice Attn.	Kimberly Gazso			D												
Address	9290 Farrand Road	Address	4610 Beecher Road			E												
City/State/Zip	Montrose, MI 48457	City/State/Zip	Flint, MI 48532			F												
Phone	(810) 232-7662	Phone	(810) 732-7870			G												
Fax	(810) 232-3280	Fax	(810) 732-9773			H												
e-Mail Address	tdomick@gcdewws.com					I												
No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	Biosolids	4/13/2021	8:40 am	ww	8	1	X											
2	Decant	4/13/2021	8:35 am	ww	8	1	x											
3	Influent	4/13/2021	9:47 am	ww	8	1	x											
4	Effluent	4/13/2021	10:05 am	ww	8	1	x											
5																		
6																		
7																		
8																		
9																		
10																		

Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time: (Check Box)				Results Due Date:	
LaTanya Banks		Courier		<input type="checkbox"/> 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 3 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour					
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Notes: Metals list: as, cd, cr, cu, pb, hg, mo, ni, se, ag, zn			
<i>[Signature]</i>	4/14/2021	7am	<i>[Signature]</i>	4/15/21	10:15	<i>[Signature]</i> 4/16/21 0800			
Relinquished by:	Date:	Time:	Received by (Laboratory):	Date:	Time:	QC Package: (Check Box Below)			
<i>[Signature]</i>	4/15/21	1700	<i>[Signature]</i>	4-15-21	1700	<input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Raw Data <input type="checkbox"/> TRRP LRC <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV: SW846 Methods/CLP like <input type="checkbox"/> Other:			
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):						
<i>[Signature]</i>	4/18/21	1425	<i>[Signature]</i>						

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

Sample Receipt Checklist

Client Name: **GENESEECO**

Date/Time Received: **16-Apr-21 08:00**

Work Order: **21041507**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

18-Apr-21
Date

Reviewed by: Ehland Bramworth
eSignature

19-Apr-21
Date

Matrices: **Sludge**

Carrier name: **Courier**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.2/4.2 C</u>		<u>IR3</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>4/18/2021 2:28:51 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: