



04-May-2021

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

Re: **Linden PFAS Sampling (04.15.21)**

Work Order: **21041445**

Dear Thad,

ALS Environmental received 5 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 30.

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

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Work Order: 21041445

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>
21041445-03	Land App	Water		4/15/2021 09:03	4/16/2021 08:00	<input type="checkbox"/>
21041445-04	Effluent	Water		4/15/2021 09:10	4/16/2021 08:00	<input type="checkbox"/>
21041445-05	Influent	Water		4/15/2021 09:18	4/16/2021 08:00	<input type="checkbox"/>

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
WorkOrder: 21041445

**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: Linden PFAS Sampling (04.15.21)
Work Order: 21041445

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 Effluent (21041445-04A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low. 13C2-PFHxDA

Batch 175306, Method E537 Mod, Sample Effluent (21041445-04A): 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 175306, Method E537 Mod, Sample Influent (21041445-05A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low, 13C2-PFDoA, 13C8-FOSA, d3-N-MeFOSA, d5-N-EtFOSA, d9-N-EtFOSE

Batch 175306, Method E537 Mod, Sample Influent (21041445-05A): 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 175444, Method D7979-17, Sample Digester 1 (21041445-01A): Surrogate high due to matrix interference. d3-N-MeFOSAA and d5-N-EtFOSAA

Batch 175444, Method D7979-17, Sample Digester 1 (21041445-01A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low, 13C8-FOSA, 13C2-PFTeA

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Work Order: 21041445

Case Narrative

Batch 175444, Method D7979-17, Sample Digester 1 (21041445-01A): 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 8:2, 13C2-PFTeA

Batch 175554, Method E537 Mod, Sample DAF (21041445-02A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low, 13C2-PFHxA, 13C3-HFPO-DA

Batch 175554, Method E537 Mod, Sample DAF (21041445-02A): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 13C2-FtS 6:2, 13C2-FtS 8:2

Batch 175554, Method E537 Mod, Sample Land App (21041445-03A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low, 13C8-FOSA, 13C3-HFPO-DA, 13C2-PFTeA

Batch 175554, Method E537 Mod, Sample Land App (21041445-03A): 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 175828, Method E537 Mod, Sample 21041445-01A MS: The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: HFPO-DA, PFHpA, PFODA passes in MSD for all targets.

Batch 175444, Method D7979-17, Sample LCS3-175444: The LCS recovery was within acceptance criteria, but recovered below the MDL and does not show on the final report. No qualification necessary. Raw data available upon request: HFPO-DA

Batch 175444, Method D7979-17, Sample Digester 1 (21041445-01A): Sample transferred from 500 mL container to 15 mL conical.

Batch 175306, Method E537 Mod, Sample Effluent (21041445-04A): Sample arrived in 500 mL container - Poured off into 250 mL HDPE bottle.

Batch 175306, Method E537 Mod, Sample Influent (21041445-05A): Sample arrived in 500 mL container - Poured off into 250 mL HDPE bottle. Reduced volume due to dissolved particulates clogging SPE cartridge.

Batch 175444, Method D7979-17, Sample 21041841-02A MS: Sample transferred from 500 mL container to 15 mL conical.

Batch 175444, Method D7979-17, Sample 21041841-02A MSD: Sample transferred from 500

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Work Order: 21041445

Case Narrative

mL container to 15 mL conical.

No other deviations or anomalies were noted.

Wet Chemistry:

No deviations or anomalies were noted.

ALS Group, USA

Date: 04-May-21

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Sample ID: Land App
Collection Date: 4/15/2021 09:03 AM

Work Order: 21041445
Lab ID: 21041445-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED							
			Method: E537 MOD		Prep: E537 Mod / 4/22/21		Analyst: SK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		9.7	34	µg/Kg-dry	1	4/22/2021 21:37
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		9.4	34	µg/Kg-dry	1	4/22/2021 21:37
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		18	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorobutanesulfonic Acid (PFBS)	U		4.1	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorobutanoic Acid (PFBA)	U		9.1	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorodecanesulfonic Acid (PFDS)	U		19	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorodecanoic Acid (PFDA)	U		5.5	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorododecanoic Acid (PFDoA)	U		10	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluoroheptanesulfonic Acid (PFHpS)	U		18	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluoroheptanoic Acid (PFHpA)	U		7.7	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorohexanesulfonic Acid (PFHxS)	U		7.1	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorohexanoic Acid (PFHxA)	U		5.1	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorononanesulfonic Acid (PFNS)	U		5.6	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorononanoic Acid (PFNA)	U		4.9	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorooctanesulfonamide (PFOSA)	U		8.0	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorooctanesulfonic Acid (PFOS)	24	J	6.5	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorooctanoic Acid (PFOA)	U		5.6	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluoropentanesulfonic Acid (PFPeS)	U		14	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluoropentanoic Acid (PFPeA)	U		4.0	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorotetradecanoic Acid (PFTeA)	U		7.3	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluorotridecanoic Acid (PFTriA)	U		22	34	µg/Kg-dry	1	4/22/2021 21:37
Perfluoroundecanoic Acid (PFUnA)	U		10	34	µg/Kg-dry	1	4/22/2021 21:37
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		21	34	µg/Kg-dry	1	4/22/2021 21:37
N-Methylperfluorooctanesulfonamidoacetic Acid	31	J	22	34	µg/Kg-dry	1	4/22/2021 21:37
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		12	34	µg/Kg-dry	1	4/22/2021 21:37
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		20	34	µg/Kg-dry	1	4/22/2021 21:37
11Cl-Pf3OUdS	U		8.0	34	µg/Kg-dry	1	4/22/2021 21:37
9Cl-PF3ONS	U		4.8	34	µg/Kg-dry	1	4/22/2021 21:37
Surr: 13C2-FtS 4:2	165	S		50-150	%REC	1	4/22/2021 21:37
Surr: 13C2-FtS 6:2	346	S		50-150	%REC	1	4/22/2021 21:37
Surr: 13C2-FtS 8:2	260	S		50-150	%REC	1	4/22/2021 21:37
Surr: 13C2-PFDA	69.2			50-150	%REC	1	4/22/2021 21:37

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

ALS Group, USA

Date: 04-May-21

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Sample ID: Land App
Collection Date: 4/15/2021 09:03 AM

Work Order: 21041445
Lab ID: 21041445-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 13C2-PFDoA	55.9			50-150	%REC	1	4/22/2021 21:37
Surr: 13C2-PFHxA	54.7			50-150	%REC	1	4/22/2021 21:37
Surr: 13C2-PFHxDA	69.6			50-150	%REC	1	4/22/2021 21:37
Surr: 13C2-PFTeA	42.4	S		50-150	%REC	1	4/22/2021 21:37
Surr: 13C2-PFUnA	71.1			50-150	%REC	1	4/22/2021 21:37
Surr: 13C3-HFPO-DA	49.9	S		50-150	%REC	1	4/22/2021 21:37
Surr: 13C3-PFBS	57.2			50-150	%REC	1	4/22/2021 21:37
Surr: 13C4-PFBA	61.0			50-150	%REC	1	4/22/2021 21:37
Surr: 13C4-PFHpA	74.7			50-150	%REC	1	4/22/2021 21:37
Surr: 13C4-PFOA	77.6			50-150	%REC	1	4/22/2021 21:37
Surr: 13C4-PFOS	62.0			50-150	%REC	1	4/22/2021 21:37
Surr: 13C5-PFNA	68.3			50-150	%REC	1	4/22/2021 21:37
Surr: 13C5-PFPeA	60.5			50-150	%REC	1	4/22/2021 21:37
Surr: 13C8-FOSA	34.6	S		50-150	%REC	1	4/22/2021 21:37
Surr: 18O2-PFHxS	56.8			50-150	%REC	1	4/22/2021 21:37
Surr: d5-N-EtFOSA	44.7	S		50-150	%REC	1	4/22/2021 21:37
Surr: d5-N-EtFOSAA	109			50-150	%REC	1	4/22/2021 21:37
Surr: d9-N-EtFOSE	30.3	S		50-150	%REC	1	4/22/2021 21:37
Surr: d3-N-MeFOSA	40.6	S		50-150	%REC	1	4/22/2021 21:37
Surr: d3-N-MeFOSAA	110			50-150	%REC	1	4/22/2021 21:37
Surr: d7-N-MeFOSE	29.3	S		50-150	%REC	1	4/22/2021 21:37
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	97		0.10	0.10	% of sample	1	4/22/2021 14:56

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

ALS Group, USA

Date: 04-May-21

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Sample ID: Effluent
Collection Date: 4/15/2021 09:10 AM

Work Order: 21041445
Lab ID: 21041445-04
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		1.0	5.3	ng/L	1	4/19/2021 23:30
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.71	5.3	ng/L	1	4/19/2021 23:30
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.3	ng/L	1	4/19/2021 23:30
Perfluorobutanesulfonic Acid (PFBS)	2.6	J	0.37	5.3	ng/L	1	4/19/2021 23:30
Perfluorobutanoic Acid (PFBA)	U		2.8	5.3	ng/L	1	4/19/2021 23:30
Perfluorodecanesulfonic Acid (PFDS)	U		1.5	5.3	ng/L	1	4/19/2021 23:30
Perfluorodecanoic Acid (PFDA)	U		1.3	5.3	ng/L	1	4/19/2021 23:30
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.3	ng/L	1	4/19/2021 23:30
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.60	5.3	ng/L	1	4/19/2021 23:30
Perfluoroheptanoic Acid (PFHpA)	1.9	J	0.47	5.3	ng/L	1	4/19/2021 23:30
Perfluorohexanesulfonic Acid (PFHxS)	2.1	J	0.39	5.3	ng/L	1	4/19/2021 23:30
Perfluorohexanoic Acid (PFHxA)	17		1.3	5.3	ng/L	1	4/19/2021 23:30
Perfluorononanesulfonic Acid (PFNS)	U		0.53	5.3	ng/L	1	4/19/2021 23:30
Perfluorononanoic Acid (PFNA)	U		0.93	5.3	ng/L	1	4/19/2021 23:30
Perfluorooctanesulfonamide (PFOSA)	U		0.76	5.3	ng/L	1	4/19/2021 23:30
Perfluorooctanesulfonic Acid (PFOS)	2.3		0.95	2.1	ng/L	1	4/19/2021 23:30
Perfluorooctanoic Acid (PFOA)	5.6		0.75	2.1	ng/L	1	4/19/2021 23:30
Perfluoropentanesulfonic Acid (PFPeS)	U		0.59	5.3	ng/L	1	4/19/2021 23:30
Perfluoropentanoic Acid (PFPeA)	6.2		1.4	5.3	ng/L	1	4/19/2021 23:30
Perfluorotetradecanoic Acid (PFTeA)	U		2.8	5.3	ng/L	1	4/19/2021 23:30
Perfluorotridecanoic Acid (PFTrIA)	U		0.82	5.3	ng/L	1	4/19/2021 23:30
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.3	ng/L	1	4/19/2021 23:30
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.3	ng/L	1	4/19/2021 23:30
N-Methylperfluorooctanesulfonamidoacetic Acid	2.0	J	0.69	5.3	ng/L	1	4/19/2021 23:30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.3	ng/L	1	4/19/2021 23:30
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.60	5.3	ng/L	1	4/19/2021 23:30
11Cl-Pf3OUdS	U		0.50	5.3	ng/L	1	4/19/2021 23:30
9Cl-PF3ONS	U		0.48	5.3	ng/L	1	4/19/2021 23:30
Surr: 13C2-FtS 4:2	335	S		50-150	%REC	1	4/19/2021 23:30
Surr: 13C2-FtS 6:2	289	S		50-150	%REC	1	4/19/2021 23:30
Surr: 13C2-FtS 8:2	220	S		50-150	%REC	1	4/19/2021 23:30

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

ALS Group, USA

Date: 04-May-21

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Sample ID: Effluent
Collection Date: 4/15/2021 09:10 AM

Work Order: 21041445
Lab ID: 21041445-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 13C2-PFDA	77.9			50-150	%REC	1	4/19/2021 23:30
Surr: 13C2-PFDoA	58.0			50-150	%REC	1	4/19/2021 23:30
Surr: 13C2-PFHxA	58.7			50-150	%REC	1	4/19/2021 23:30
Surr: 13C2-PFHxDA	42.5	S		50-150	%REC	1	4/19/2021 23:30
Surr: 13C2-PFTeA	60.0			50-150	%REC	1	4/19/2021 23:30
Surr: 13C2-PFUnA	88.5			50-150	%REC	1	4/19/2021 23:30
Surr: 13C3-HFPO-DA	67.5			50-150	%REC	1	4/19/2021 23:30
Surr: 13C3-PFBS	67.9			50-150	%REC	1	4/19/2021 23:30
Surr: 13C4-PFBA	55.5			50-150	%REC	1	4/19/2021 23:30
Surr: 13C4-PFHpA	62.8			50-150	%REC	1	4/19/2021 23:30
Surr: 13C4-PFOA	76.4			50-150	%REC	1	4/19/2021 23:30
Surr: 13C4-PFOS	62.9			50-150	%REC	1	4/19/2021 23:30
Surr: 13C5-PFNA	85.8			50-150	%REC	1	4/19/2021 23:30
Surr: 13C5-PFPeA	71.3			50-150	%REC	1	4/19/2021 23:30
Surr: 13C8-FOSA	71.5			50-150	%REC	1	4/19/2021 23:30
Surr: 18O2-PFHxS	72.5			50-150	%REC	1	4/19/2021 23:30
Surr: d5-N-EtFOSA	64.2			50-150	%REC	1	4/19/2021 23:30
Surr: d5-N-EtFOSAA	135			50-150	%REC	1	4/19/2021 23:30
Surr: d9-N-EtFOSE	70.4			50-150	%REC	1	4/19/2021 23:30
Surr: d3-N-MeFOSA	64.8			50-150	%REC	1	4/19/2021 23:30
Surr: d3-N-MeFOSAA	99.3			50-150	%REC	1	4/19/2021 23:30
Surr: d7-N-MeFOSE	66.5			50-150	%REC	1	4/19/2021 23:30

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

ALS Group, USA

Date: 04-May-21

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Sample ID: Influent
Collection Date: 4/15/2021 09:18 AM

Work Order: 21041445
Lab ID: 21041445-05
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		1.4	7.3	ng/L	1	4/19/2021 23:41
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	0.97	J	0.96	7.3	ng/L	1	4/19/2021 23:41
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.6	7.3	ng/L	1	4/19/2021 23:41
Perfluorobutanesulfonic Acid (PFBS)	4.2	J	0.51	7.3	ng/L	1	4/19/2021 23:41
Perfluorobutanoic Acid (PFBA)	U		3.8	7.3	ng/L	1	4/19/2021 23:41
Perfluorodecanesulfonic Acid (PFDS)	U		2.0	7.3	ng/L	1	4/19/2021 23:41
Perfluorodecanoic Acid (PFDA)	U		1.8	7.3	ng/L	1	4/19/2021 23:41
Perfluorododecanoic Acid (PFDoA)	U		2.1	7.3	ng/L	1	4/19/2021 23:41
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.82	7.3	ng/L	1	4/19/2021 23:41
Perfluoroheptanoic Acid (PFHpA)	1.6	J	0.64	7.3	ng/L	1	4/19/2021 23:41
Perfluorohexanesulfonic Acid (PFHxS)	2.6	J	0.54	7.3	ng/L	1	4/19/2021 23:41
Perfluorohexanoic Acid (PFHxA)	5.9	J	1.7	7.3	ng/L	1	4/19/2021 23:41
Perfluorononanesulfonic Acid (PFNS)	U		0.72	7.3	ng/L	1	4/19/2021 23:41
Perfluorononanoic Acid (PFNA)	U		1.3	7.3	ng/L	1	4/19/2021 23:41
Perfluorooctanesulfonamide (PFOSA)	U		1.0	7.3	ng/L	1	4/19/2021 23:41
Perfluorooctanesulfonic Acid (PFOS)	4.6		1.3	2.9	ng/L	1	4/19/2021 23:41
Perfluorooctanoic Acid (PFOA)	2.4	J	1.0	2.9	ng/L	1	4/19/2021 23:41
Perfluoropentanesulfonic Acid (PFPeS)	U		0.81	7.3	ng/L	1	4/19/2021 23:41
Perfluoropentanoic Acid (PFPeA)	55		1.9	7.3	ng/L	1	4/19/2021 23:41
Perfluorotetradecanoic Acid (PFTeA)	U		3.8	7.3	ng/L	1	4/19/2021 23:41
Perfluorotridecanoic Acid (PFTrIA)	U		1.1	7.3	ng/L	1	4/19/2021 23:41
Perfluoroundecanoic Acid (PFUnA)	U		1.4	7.3	ng/L	1	4/19/2021 23:41
N-Ethylperfluorooctanesulfonamidoacetic Acid	1.5	J	0.91	7.3	ng/L	1	4/19/2021 23:41
N-Methylperfluorooctanesulfonamidoacetic Acid	1.3	J	0.94	7.3	ng/L	1	4/19/2021 23:41
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.7	7.3	ng/L	1	4/19/2021 23:41
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.82	7.3	ng/L	1	4/19/2021 23:41
11Cl-Pf3OUdS	U		0.68	7.3	ng/L	1	4/19/2021 23:41
9Cl-PF3ONS	U		0.65	7.3	ng/L	1	4/19/2021 23:41
Surr: 13C2-FtS 4:2	373	S		50-150	%REC	1	4/19/2021 23:41
Surr: 13C2-FtS 6:2	427	S		50-150	%REC	1	4/19/2021 23:41
Surr: 13C2-FtS 8:2	337	S		50-150	%REC	1	4/19/2021 23:41

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

ALS Group, USA

Date: 04-May-21

Client: Genesee County WWS
Project: Linden PFAS Sampling (04.15.21)
Sample ID: Influent
Collection Date: 4/15/2021 09:18 AM

Work Order: 21041445
Lab ID: 21041445-05
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 13C2-PFDA	88.7			50-150	%REC	1	4/19/2021 23:41
Surr: 13C2-PFDoA	48.6	S		50-150	%REC	1	4/19/2021 23:41
Surr: 13C2-PFHxA	86.0			50-150	%REC	1	4/19/2021 23:41
Surr: 13C2-PFHxDA	52.1			50-150	%REC	1	4/19/2021 23:41
Surr: 13C2-PFTeA	55.8			50-150	%REC	1	4/19/2021 23:41
Surr: 13C2-PFUnA	79.1			50-150	%REC	1	4/19/2021 23:41
Surr: 13C3-HFPO-DA	78.4			50-150	%REC	1	4/19/2021 23:41
Surr: 13C3-PFBS	66.6			50-150	%REC	1	4/19/2021 23:41
Surr: 13C4-PFBA	85.3			50-150	%REC	1	4/19/2021 23:41
Surr: 13C4-PFHpA	81.0			50-150	%REC	1	4/19/2021 23:41
Surr: 13C4-PFOA	96.6			50-150	%REC	1	4/19/2021 23:41
Surr: 13C4-PFOS	74.2			50-150	%REC	1	4/19/2021 23:41
Surr: 13C5-PFNA	109			50-150	%REC	1	4/19/2021 23:41
Surr: 13C5-PFPeA	71.3			50-150	%REC	1	4/19/2021 23:41
Surr: 13C8-FOSA	27.1	S		50-150	%REC	1	4/19/2021 23:41
Surr: 18O2-PFHxS	64.8			50-150	%REC	1	4/19/2021 23:41
Surr: d5-N-EtFOSA	43.0	S		50-150	%REC	1	4/19/2021 23:41
Surr: d5-N-EtFOSAA	80.1			50-150	%REC	1	4/19/2021 23:41
Surr: d9-N-EtFOSE	40.0	S		50-150	%REC	1	4/19/2021 23:41
Surr: d3-N-MeFOSA	45.8	S		50-150	%REC	1	4/19/2021 23:41
Surr: d3-N-MeFOSAA	92.6			50-150	%REC	1	4/19/2021 23:41
Surr: d7-N-MeFOSE	50.9			50-150	%REC	1	4/19/2021 23:41

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

Client: Genesee County WWS
Work Order: 21041445
Project: Linden PFAS Sampling (04.15.21)

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: 21041445
Project: Linden PFAS Sampling (04.15.21)

QC BATCH REPORT

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

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

Client: Genesee County WWS
 Work Order: 21041445
 Project: Linden PFAS Sampling (04.15.21)

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 (PFI	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 (PFI	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: 21041445
Project: Linden PFAS Sampling (04.15.21)

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 (PF1	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: 21041445
 Project: Linden PFAS Sampling (04.15.21)

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: 21041445
Project: Linden PFAS Sampling (04.15.21)

QC BATCH REPORT

Batch ID: 175306	Instrument ID LCMS1	Method: E537 Mod						
<i>Surr: d5-N-EtFOSAA</i>	<i>134</i>	0	0	<i>148.7</i>	0	<i>90.1</i>	<i>50-150</i>	0
<i>Surr: d9-N-EtFOSE</i>	<i>83.71</i>	0	0	<i>148.7</i>	0	<i>56.3</i>	<i>50-150</i>	0
<i>Surr: d3-N-MeFOSA</i>	<i>76.22</i>	0	0	<i>148.7</i>	0	<i>51.3</i>	<i>50-150</i>	0
<i>Surr: d3-N-MeFOSAA</i>	<i>123.9</i>	0	0	<i>148.7</i>	0	<i>83.4</i>	<i>50-150</i>	0
<i>Surr: d7-N-MeFOSE</i>	<i>108.3</i>	0	0	<i>148.7</i>	0	<i>72.8</i>	<i>50-150</i>	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: 21041445
 Project: Linden PFAS Sampling (04.15.21)

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: 21041445
Project: Linden PFAS Sampling (04.15.21)

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:

21041445-04A	21041445-05A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Genesee County WWS
 Work Order: 21041445
 Project: Linden PFAS Sampling (04.15.21)

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 (PFT	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: 21041445
Project: Linden PFAS Sampling (04.15.21)

QC BATCH REPORT

Batch ID: 175554	Instrument ID LCMS1	Method: E537 Mod						
Surr: 13C5-PFNA	17.41	0	0	20	0	87	50-150	0
Surr: 13C5-PFPeA	16.25	0	0	20	0	81.3	50-150	0
Surr: 13C8-FOSA	16.86	0	0	20	0	84.3	50-150	0
Surr: 18O2-PFHxS	14.67	0	0	18.9	0	77.6	50-150	0
Surr: d5-N-EtFOSA	17.35	0	0	20	0	86.8	50-150	0
Surr: d5-N-EtFOSAA	16.41	0	0	20	0	82.1	50-150	0
Surr: d9-N-EtFOSE	16.75	0	0	20	0	83.8	50-150	0
Surr: d3-N-MeFOSA	15.76	0	0	20	0	78.8	50-150	0
Surr: d3-N-MeFOSAA	16.79	0	0	20	0	84	50-150	0
Surr: d7-N-MeFOSE	17.77	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: 21041445
 Project: Linden PFAS Sampling (04.15.21)

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: 21041445
Project: Linden PFAS Sampling (04.15.21)

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: 21041445
 Project: Linden PFAS Sampling (04.15.21)

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: 21041445
Project: Linden PFAS Sampling (04.15.21)

QC BATCH REPORT

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

The following samples were analyzed in this batch:

21041445-03A

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

Client: Genesee County WWS
 Work Order: 21041445
 Project: Linden PFAS Sampling (04.15.21)

QC BATCH REPORT

Batch ID: **R314745** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R314745				Units: % of sample			Analysis Date: 4/22/2021 02:56 PM		
Client ID:		Run ID: MOIST_210422D				SeqNo: 7332510			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-R314745				Units: % of sample			Analysis Date: 4/22/2021 02:56 PM		
Client ID:		Run ID: MOIST_210422D				SeqNo: 7332509			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: 21041445-02A DUP				Units: % of sample			Analysis Date: 4/22/2021 02:56 PM		
Client ID: DAF		Run ID: MOIST_210422D				SeqNo: 7332494			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	95.94	0.1	0.10	0	0	0	0-0	95.99	0.0521	10	

DUP		Sample ID: 21041641-01A DUP				Units: % of sample			Analysis Date: 4/22/2021 02:56 PM		
Client ID:		Run ID: MOIST_210422D				SeqNo: 7332500			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	21.52	0.1	0.10	0	0	0	0-0	22.23	3.25	10	

The following samples were analyzed in this batch:

21041445-03A

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



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	2021-00035735	Project Name	Lindan PFAS Sampling	A	PFAS 28													
Work Order		Project Number		B														
Company Name	Genesee County Water and Waste Ser	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														
				J														
No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	Digester 1	4/15/2021	857A	WW	8	1	X											
2	D4F	4/15/2021	901A	WW	8	1	X											
3	Land App	4/15/2021	903A	WW	8	1	X											
4	Effluent	4/15/2021	910A	WW	8	1	X											
5	Influent	4/15/2021	918A	WW	8	1	X											
6		4/15/2021		WW	8													
7																		
8																		
9																		
10																		
Sampler(s): Please Print & Sign Brant Pittenger/Jordan Jones		Shipment Method: Courier		Required Turnaround Time: (Check Box) <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				Other _____				Results Due Date:						
Relinquished by: Brant Pittenger		Date: 4/15/21	Time: 9:22A	Received by: [Signature]		Date: 4/15/21	Time: 9:22	Notes: Metals list: as, cd, cr, cu, pb, hg, mo, ni, se, ag, zn 4/16/21 0800										
Relinquished by: [Signature]		Date: 4/15/21	Time: 1800	Received by (Laboratory): [Signature]		Date: 4/15/21	Time: 1800	ALS Cooler ID IR3		Cooler Temp 4.30C		QC Package: (Check Box Below) <input checked="" type="checkbox"/> Level II: Standard QC <input checked="" 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): [Signature]		Date: 4/16/21	Time: 1735	Checked by (Laboratory): [Signature]														

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: **21041445**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

17-Apr-21
Date

Reviewed by: Ehland Bramworth
eSignature

19-Apr-21
Date

Matrices: **Water**

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 checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input 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>4.3/5.3 C</u>		<u>IR3</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>4/17/2021 7:47:01 AM</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 checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: