WRR Environmental Services Co., Inc.

VIA Federal Express

August 6, 2021
File #55929.007

[redacted]
4996 South Lowes Creek Road
Eau Claire, WI 54701-9300

Dear Neighbor of WRR Environmental Services:

On July 27, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 4996 South Lowes Creek Road. The sample was collected as part of an investigation to determine the extent of groundwater impacted by per- and poly-fluoroalkyl substances (PFAS) that may be associated with a type of firefighting foam (AFFF) used to suppress fires at the WRR facility on Ryder Road in 2007 and 2010. The investigation activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-1. The water sample collected from your home in July was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 33 individual PFAS compounds. Four PFAS compounds were detected in the water sample collected from your well but at concentrations below the proposed standards protective of human health. Below is a table summarizing the results of PFAS compounds detected in the sample from your well. Included in the table are the Wisconsin Department of Health Services' (WDHS) and WDNR's proposed recommended NR 140 preventive action limits (PAL) and enforcement standards (ES) for each compound.

PFAS Compounds	Measured Concentration	Proposed NR 140 Enforcement Standard	Proposed NR 140 Preventive Action Limit	Hazard Index
	ng/L	ng/L	ng/L	Unitless
PFOA	0.76 J	20	2	0.038
PFHxS	0.43 J	40	4	0.011
PFBS	0.46 J	450,000	90,000	<0.0001
PFHpA	0.55 J	NRS	NRS	NA

Table Notes:
All concentrations are in nanograms per liter (ng/L)
J = Concentration measured between laboratory's limit of detection and limit of quantitation
NRS = No recommended standard
NA = Not Applicable

The combined concentrations of the detected compounds have a Hazard Index of 0.049, far below a Hazard Index (HI) of 1.0 used to assess the collective impact of PFAS compounds. The HI indicates the risk of exposure of all detected substances in a group based on their individual concentrations relative to each of their proposed ESs. Copies of the lab reports for the sample collected from your well and the field blank that accompanied your sample when it was shipped to the laboratory are included with this letter.

Copies of this letter and the July 2021 lab reports are being sent to the WDNR and WDHS for their records. We thank you for your cooperation in our investigation. At this time, we do not anticipate the need to collect additional samples from your well. If you have any questions regarding the on-going PFAS investigation, please contact Ms. Candace Sykora with the WDNR at (715) 928-0452 or candace.sykora@wisconsin.gov. If you have any questions regarding the potential health impacts from PFAS, please contact Mr. Nathan Kloczko with the WDHS at (608) 267-3227 or Nathan.kloczko@dhs.wisconsin.gov.

If you have any questions about this letter or the results of the sample collected from your well, please contact Anthony Miller with GF at (608) 400-6815 or awmiller@gfnet.com.

Sincerely,

Jim Hager
President – WRR Environmental Services Co., Inc.

Enc.
cc: Candace Sykora (WDNR)
Nathan Kloczko (WDHS)

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072385**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072385**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072385-01	PW-1	Drinking Wat		7/27/2021 10:05	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072385**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072385

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-1
Collection Date: 7/27/2021 10:05 AM

Work Order: 21072385
Lab ID: 21072385-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.93	5.0	ng/L	1	8/2/2021 19:20
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.66	5.0	ng/L	1	8/2/2021 19:20
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	5.0	ng/L	1	8/2/2021 19:20
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.90	5.0	ng/L	1	8/2/2021 19:20
Perfluorobutanesulfonic Acid (PFBS)	**0.46**	J	**0.35**	**5.0**	**ng/L**	1	8/2/2021 19:20
Perfluorobutanoic Acid (PFBA)	U		2.6	5.0	ng/L	1	8/2/2021 19:20
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.0	ng/L	1	8/2/2021 19:20
Perfluorodecanoic Acid (PFDA)	U		1.2	5.0	ng/L	1	8/2/2021 19:20
Perfluorododecanesulfonic Acid (PFDoS)	U		1.4	5.0	ng/L	1	8/2/2021 19:20
Perfluorododecanoic Acid (PFDoA)	U		1.4	5.0	ng/L	1	8/2/2021 19:20
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.56	5.0	ng/L	1	8/2/2021 19:20
Perfluoroheptanoic Acid (PFHpA)	**0.55**	J	**0.44**	**5.0**	**ng/L**	1	8/2/2021 19:20
Perfluorohexadecanoic Acid (PFHxDA)	U		0.38	5.0	ng/L	1	8/2/2021 19:20
Perfluorohexanesulfonic Acid (PFHxS)	**0.43**	J	**0.37**	**5.0**	**ng/L**	1	8/2/2021 19:20
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.0	ng/L	1	8/2/2021 19:20
Perfluorononanesulfonic Acid (PFNS)	U		0.49	5.0	ng/L	1	8/2/2021 19:20
Perfluorononanoic Acid (PFNA)	U		0.87	5.0	ng/L	1	8/2/2021 19:20
Perfluorooctadecanoic Acid (PFODA)	U		0.65	5.0	ng/L	1	8/2/2021 19:20
Perfluorooctanesulfonamide (PFOSA)	U		0.71	5.0	ng/L	1	8/2/2021 19:20
Perfluorooctanesulfonic Acid (PFOS)	U		0.89	2.0	ng/L	1	8/2/2021 19:20
Perfluorooctanoic Acid (PFOA)	**0.76**	J	**0.63**	**2.0**	**ng/L**	1	8/2/2021 19:20
Perfluoropentanesulfonic Acid (PFPeS)	U		0.55	5.0	ng/L	1	8/2/2021 19:20
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.0	ng/L	1	8/2/2021 19:20
Perfluorotetradecanoic Acid (PFTeA)	U		2.6	5.0	ng/L	1	8/2/2021 19:20
Perfluorotridecanoic Acid (PFTriA)	U		0.77	5.0	ng/L	1	8/2/2021 19:20
Perfluoroundecanoic Acid (PFUnA)	U		0.97	5.0	ng/L	1	8/2/2021 19:20
N-ethylperfluoro-1-octanesulfonamide	U		1.1	5.0	ng/L	1	8/2/2021 19:20
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.62	5.0	ng/L	1	8/2/2021 19:20
N-Ethylperfluorooctanesulfonamidoethanol	U		0.51	5.0	ng/L	1	8/2/2021 19:20
N-methylperfluoro-1-octanesulfonamide	U		0.79	5.0	ng/L	1	8/2/2021 19:20

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-1
Collection Date: 7/27/2021 10:05 AM

Work Order: 21072385
Lab ID: 21072385-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.64	5.0	ng/L	1	8/2/2021 19:20
N-Methylperfluorooctanesulfonamidoethanol	U		0.48	5.0	ng/L	1	8/2/2021 19:20
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.0	ng/L	1	8/2/2021 19:20
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.56	5.0	ng/L	1	8/2/2021 19:20
11Cl-Pf3OUdS	U		0.47	5.0	ng/L	1	8/2/2021 19:20
9Cl-PF3ONS	U		0.45	5.0	ng/L	1	8/2/2021 19:20
Surr: 13C2-FtS 4:2	*64.1*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-FtS 6:2	*88.2*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-FtS 8:2	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-PFDA	*67.1*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-PFDoA	*71.6*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-PFHxA	*74.4*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-PFHxDA	*79.4*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-PFTeA	*75.2*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C2-PFUnA	*74.0*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C3-HFPO-DA	*79.9*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C3-PFBS	*80.7*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C4-PFBA	*77.7*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C4-PFHpA	*79.0*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C4-PFOA	*87.3*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C4-PFOS	*68.8*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C5-PFNA	*81.5*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C5-PFPeA	*83.6*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 13C8-FOSA	*71.3*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: 18O2-PFHxS	*67.9*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: d5-N-EtFOSA	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: d5-N-EtFOSAA	*89.9*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: d9-N-EtFOSE	*83.0*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: d3-N-MeFOSA	*82.4*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: d3-N-MeFOSAA	*71.7*			*50-150*	*%REC*	1	8/2/2021 19:20
Surr: d7-N-MeFOSE	*83.3*			*50-150*	*%REC*	1	8/2/2021 19:20

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid (	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid (	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072385
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS	Sample ID: **LCS-181205-181205A**				Units: **ng/L**			Analysis Date: **8/2/2021 05:35 PM**			
Client ID:		Run ID: **LCMS1_210802C**			SeqNo: **7639082**			Prep Date: **8/2/2021**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072385
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid (	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid (	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (I	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072385
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (I	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072385
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072385-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229882

ALS Project Manager: JM

ALS Work Order #: 21072385

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-1	7/27/21	10:05	DW	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] Other [ ] 2 WK Days [ ] 24 Hour

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx	
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):	
Logged by (Laboratory):	Date: 7/28/21	Time: 1530	Checked by (Laboratory):	

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC [ ] TRRP CheckList
[ ] Level III Std QC/Raw Data [ ] TRRP Level IV
[ ] Level IV SW846/CLP
[ ] Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072385** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:32:28 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072383**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072383**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072383-01	Field Blank	Water		7/27/2021 10:20	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072383**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072383

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.97	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.68	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.93	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanesulfonic Acid (PFBS)	U		0.36	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanoic Acid (PFBA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanoic Acid (PFDA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanesulfonic Acid (PFDoS)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanoic Acid (PFHpA)	U		0.45	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexadecanoic Acid (PFHxDA)	U		0.39	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanesulfonic Acid (PFHxS)	U		0.38	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanesulfonic Acid (PFNS)	U		0.51	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanoic Acid (PFNA)	U		0.90	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctadecanoic Acid (PFODA)	U		0.67	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonamide (PFOSA)	U		0.73	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonic Acid (PFOS)	U		0.92	2.1	ng/L	1	8/2/2021 19:09
Perfluorooctanoic Acid (PFOA)	U		0.65	2.1	ng/L	1	8/2/2021 19:09
Perfluoropentanesulfonic Acid (PFPeS)	U		0.57	5.2	ng/L	1	8/2/2021 19:09
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorotetradecanoic Acid (PFTeA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorotridecanoic Acid (PFTriA)	U		0.80	5.2	ng/L	1	8/2/2021 19:09
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.2	ng/L	1	8/2/2021 19:09
N-ethylperfluoro-1-octanesulfonamide	U		1.2	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.65	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoethanol	U		0.53	5.2	ng/L	1	8/2/2021 19:09
N-methylperfluoro-1-octanesulfonamide	U		0.82	5.2	ng/L	1	8/2/2021 19:09

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.2	ng/L	1	8/2/2021 19:09
N-Methylperfluorooctanesulfonamidoethanol	U		0.50	5.2	ng/L	1	8/2/2021 19:09
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
11Cl-Pf3OUdS	U		0.48	5.2	ng/L	1	8/2/2021 19:09
9Cl-PF3ONS	U		0.46	5.2	ng/L	1	8/2/2021 19:09
Surr: 13C2-FtS 4:2	*79.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 6:2	*97.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 8:2	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDA	*72.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDoA	*75.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxDA	*84.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFTeA	*77.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFUnA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-HFPO-DA	*80.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-PFBS	*83.2*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFBA	*82.9*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFHpA	*89.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOA	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOS	*74.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFNA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFPeA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C8-FOSA	*75.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 18O2-PFHxS	*73.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSA	*82.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSAA	*90.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d9-N-EtFOSE	*80.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSA	*83.6*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSAA	*74.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d7-N-MeFOSE	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:09

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:35 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639082** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072383-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229886

ALS Project Manager: JM

ALS Work Order #: 21072383

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Blank	7/27	10:20	water	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):
Logged by (Laboratory):	Date: 7/28/21	Time: 1524	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072383** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:29:19 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

WRR Environmental Services Co., Inc.

VIA Federal Express

August 6, 2021
File #55929.007

[redacted]
5150 South Lowes Creek Road
Eau Claire, WI 54701.9300

Dear Neighbor of WRR Environmental Services:

On July 27, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5150 South Lowes Creek Road. The sample was collected as part of an investigation to determine the extent of groundwater impacted by per- and poly-fluoroalkyl substances (PFAS) that may be associated with a type of firefighting foam (AFFF) used to suppress fires at the WRR facility on Ryder Road in 2007 and 2010. The investigation activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-3. The water sample collected from your home in July was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 33 individual PFAS compounds. One PFAS compound, PFBS was detected in the water sample collected from your well but at a concentration of 0.44 nanograms per liter (ng/L), far below the Wisconsin Department of Health Services' (WDHS) and WDNR's proposed recommended NR 140 preventive action limit and enforcement standard of 90,000 and 450,000 ng/L, respectively. Copies of the lab reports for the sample collected from your well and the field blank that accompanied your sample when it was shipped to the laboratory are included with this letter.

Copies of this letter and the July 2021 lab reports are being sent to the WDNR and WDHS for their records. We thank you for your cooperation in our investigation. At this time, we do not anticipate the need to collect additional samples from your well. If you have any questions regarding the on-going PFAS investigation, please contact Ms. Candace Sykora with the WDNR at (715) 928-0452 or candace.sykora@wisconsin.gov. If you have any questions regarding the

potential health impacts from PFAS, please contact Mr. Nathan Kloczko with the WDHS at (608) 267-3227 or Nathan.kloczko@dhs.wisconsin.gov.

If you have any questions about this letter or the results of the sample collected from your well, please contact Anthony Miller with GF at (608) 400-6815 or awmiller@gfnet.com.

Sincerely,

Jim Hager
President – WRR Environmental Services Co., Inc.

Enc.
cc: Candace Sykora (WDNR)
Nathan Kloczko (WDHS)

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072382**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072382**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072382-01	PW-3	Drinking Wat		7/27/2021 12:30	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072382**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072382

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-3
Collection Date: 7/27/2021 12:30 PM

Work Order: 21072382
Lab ID: 21072382-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.89	4.8	ng/L	1	8/2/2021 18:59
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.63	4.8	ng/L	1	8/2/2021 18:59
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	4.8	ng/L	1	8/2/2021 18:59
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.86	4.8	ng/L	1	8/2/2021 18:59
Perfluorobutanesulfonic Acid (PFBS)	**0.44**	J	**0.33**	**4.8**	**ng/L**	1	8/2/2021 18:59
Perfluorobutanoic Acid (PFBA)	U		2.5	4.8	ng/L	1	8/2/2021 18:59
Perfluorodecanesulfonic Acid (PFDS)	U		1.3	4.8	ng/L	1	8/2/2021 18:59
Perfluorodecanoic Acid (PFDA)	U		1.2	4.8	ng/L	1	8/2/2021 18:59
Perfluorododecanesulfonic Acid (PFDoS)	U		1.4	4.8	ng/L	1	8/2/2021 18:59
Perfluorododecanoic Acid (PFDoA)	U		1.4	4.8	ng/L	1	8/2/2021 18:59
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.54	4.8	ng/L	1	8/2/2021 18:59
Perfluoroheptanoic Acid (PFHpA)	U		0.42	4.8	ng/L	1	8/2/2021 18:59
Perfluorohexadecanoic Acid (PFHxDA)	U		0.36	4.8	ng/L	1	8/2/2021 18:59
Perfluorohexanesulfonic Acid (PFHxS)	U		0.35	4.8	ng/L	1	8/2/2021 18:59
Perfluorohexanoic Acid (PFHxA)	U		1.1	4.8	ng/L	1	8/2/2021 18:59
Perfluorononanesulfonic Acid (PFNS)	U		0.47	4.8	ng/L	1	8/2/2021 18:59
Perfluorononanoic Acid (PFNA)	U		0.83	4.8	ng/L	1	8/2/2021 18:59
Perfluorooctadecanoic Acid (PFODA)	U		0.62	4.8	ng/L	1	8/2/2021 18:59
Perfluorooctanesulfonamide (PFOSA)	U		0.68	4.8	ng/L	1	8/2/2021 18:59
Perfluorooctanesulfonic Acid (PFOS)	U		0.85	1.9	ng/L	1	8/2/2021 18:59
Perfluorooctanoic Acid (PFOA)	U		0.60	1.9	ng/L	1	8/2/2021 18:59
Perfluoropentanesulfonic Acid (PFPeS)	U		0.53	4.8	ng/L	1	8/2/2021 18:59
Perfluoropentanoic Acid (PFPeA)	U		1.2	4.8	ng/L	1	8/2/2021 18:59
Perfluorotetradecanoic Acid (PFTeA)	U		2.5	4.8	ng/L	1	8/2/2021 18:59
Perfluorotridecanoic Acid (PFTriA)	U		0.73	4.8	ng/L	1	8/2/2021 18:59
Perfluoroundecanoic Acid (PFUnA)	U		0.93	4.8	ng/L	1	8/2/2021 18:59
N-ethylperfluoro-1-octanesulfonamide	U		1.1	4.8	ng/L	1	8/2/2021 18:59
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.60	4.8	ng/L	1	8/2/2021 18:59
N-Ethylperfluorooctanesulfonamidoethanol	U		0.49	4.8	ng/L	1	8/2/2021 18:59
N-methylperfluoro-1-octanesulfonamide	U		0.75	4.8	ng/L	1	8/2/2021 18:59

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-3
Collection Date: 7/27/2021 12:30 PM

Work Order: 21072382
Lab ID: 21072382-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.61	4.8	ng/L	1	8/2/2021 18:59
N-Methylperfluorooctanesulfonamidoethanol	U		0.46	4.8	ng/L	1	8/2/2021 18:59
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.1	4.8	ng/L	1	8/2/2021 18:59
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.53	4.8	ng/L	1	8/2/2021 18:59
11Cl-Pf3OUdS	U		0.44	4.8	ng/L	1	8/2/2021 18:59
9Cl-PF3ONS	U		0.43	4.8	ng/L	1	8/2/2021 18:59
Surr: 13C2-FtS 4:2	*63.1*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-FtS 6:2	*98.1*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-FtS 8:2	*97.2*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-PFDA	*75.3*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-PFDoA	*83.2*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-PFHxA	*78.4*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-PFHxDA	*83.9*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-PFTeA	*83.2*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C2-PFUnA	*80.7*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C3-HFPO-DA	*80.4*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C3-PFBS	*85.9*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C4-PFBA	*85.9*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C4-PFHpA	*82.5*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C4-PFOA	*95.8*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C4-PFOS	*78.1*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C5-PFNA	*86.1*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C5-PFPeA	*90.8*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 13C8-FOSA	*80.9*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: 18O2-PFHxS	*74.7*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: d5-N-EtFOSA	*83.0*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: d5-N-EtFOSAA	*93.9*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: d9-N-EtFOSE	*92.3*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: d3-N-MeFOSA	*80.8*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: d3-N-MeFOSAA	*68.9*			*50-150*	*%REC*	1	8/2/2021 18:59
Surr: d7-N-MeFOSE	*90.1*			*50-150*	*%REC*	1	8/2/2021 18:59

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

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.

Work Order: 21072382

Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072382
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS	Sample ID: **LCS-181205-181205A**				Units: **ng/L**			Analysis Date: **8/2/2021 05:35 PM**			
Client ID:		Run ID: **LCMS1_210802C**			SeqNo: **7639082**			Prep Date: **8/2/2021**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (I	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072382
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072382
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072382
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072382-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229887

ALS Project Manager: JW

ALS Work Order #: 21072382

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 302	Address	8040 Excelsior Drive Suite 302	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-3	7/27	12:30	DW	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] Other [ ] 2 WK Days [ ] 24 Hour

Results Due Date:

	Date:	Time:		
Relinquished by:	7/27	1400	Received by:	Fed Ex
Relinquished by: Fed Ex	7/28/21	1400	Received by (Laboratory):	
Logged by (Laboratory):	7/28/21	1520	Checked by (Laboratory):	

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC [ ] TRRP Checklist
[ ] Level III Std QC/Raw Data [ ] TRRP Level IV
[ ] Level IV SW846/CLP
[ ] Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072382** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:23:56 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072383**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072383**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072383-01	Field Blank	Water		7/27/2021 10:20	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072383**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072383

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.97	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.68	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.93	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanesulfonic Acid (PFBS)	U		0.36	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanoic Acid (PFBA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanoic Acid (PFDA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanesulfonic Acid (PFDoS)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanoic Acid (PFHpA)	U		0.45	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexadecanoic Acid (PFHxDA)	U		0.39	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanesulfonic Acid (PFHxS)	U		0.38	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanesulfonic Acid (PFNS)	U		0.51	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanoic Acid (PFNA)	U		0.90	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctadecanoic Acid (PFODA)	U		0.67	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonamide (PFOSA)	U		0.73	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonic Acid (PFOS)	U		0.92	2.1	ng/L	1	8/2/2021 19:09
Perfluorooctanoic Acid (PFOA)	U		0.65	2.1	ng/L	1	8/2/2021 19:09
Perfluoropentanesulfonic Acid (PFPeS)	U		0.57	5.2	ng/L	1	8/2/2021 19:09
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorotetradecanoic Acid (PFTeA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorotridecanoic Acid (PFTriA)	U		0.80	5.2	ng/L	1	8/2/2021 19:09
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.2	ng/L	1	8/2/2021 19:09
N-ethylperfluoro-1-octanesulfonamide	U		1.2	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.65	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoethanol	U		0.53	5.2	ng/L	1	8/2/2021 19:09
N-methylperfluoro-1-octanesulfonamide	U		0.82	5.2	ng/L	1	8/2/2021 19:09

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.2	ng/L	1	8/2/2021 19:09
N-Methylperfluorooctanesulfonamidoethanol	U		0.50	5.2	ng/L	1	8/2/2021 19:09
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
11Cl-Pf3OUdS	U		0.48	5.2	ng/L	1	8/2/2021 19:09
9Cl-PF3ONS	U		0.46	5.2	ng/L	1	8/2/2021 19:09
Surr: 13C2-FtS 4:2	*79.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 6:2	*97.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 8:2	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDA	*72.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDoA	*75.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxDA	*84.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFTeA	*77.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFUnA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-HFPO-DA	*80.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-PFBS	*83.2*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFBA	*82.9*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFHpA	*89.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOA	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOS	*74.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFNA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFPeA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C8-FOSA	*75.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 18O2-PFHxS	*73.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSA	*82.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSAA	*90.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d9-N-EtFOSE	*80.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSA	*83.6*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSAA	*74.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d7-N-MeFOSE	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:09

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:35 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639082** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072383-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229886

ALS Project Manager: JM

ALS Work Order #: 21072383

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Blank	7/27	10:20	water	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):
Logged by (Laboratory):	Date: 7/28/21	Time: 1524	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072383** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:29:19 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

WRR Environmental Services Co., Inc.

VIA Federal Express

August 6, 2021
File #55929.007

[redacted]
5238 South Lowes Creek Road
Eau Claire, WI 54701.9300

Dear Neighbor of WRR Environmental Services:

On July 27, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5238 South Lowes Creek. The sample was collected as part of an investigation to determine the extent of groundwater impacted by per- and poly-fluoroalkyl substances (PFAS) that may be associated with a type of firefighting foam (AFFF) used to suppress fires at the WRR facility on Ryder Road in 2007 and 2010. The investigation activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-4. The water sample collected from your home in July was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 33 individual PFAS compounds. One PFAS compound, PFHxS, was detected in the water sample collected from your well but at a concentration of 0.51 nanograms per liter (ng/L), far below its Wisconsin Department of Health Services' (WDHS) and WDNR's proposed recommended NR 140 preventive action limit and enforcement standard of 4 and 40 ng/L, respectively. Copies of the lab reports for the sample collected from your well and the field blank that accompanied your sample when it was shipped to the laboratory are included with this letter.

Copies of this letter and the July 2021 lab reports are being sent to the WDNR and WDHS for their records. We thank you for your cooperation in our investigation. At this time, we do not anticipate the need to collect additional samples from your well. If you have any questions regarding the on-going PFAS investigation, please contact Ms. Candace Sykora with the WDNR at (715) 928-0452 or candace.sykora@wisconsin.gov. If you have any questions regarding the

potential health impacts from PFAS, please contact Mr. Nathan Kloczko with the WDHS at (608) 267-3227 or Nathan.kloczko@dhs.wisconsin.gov.

If you have any questions about this letter or the results of the sample collected from your well, please contact Anthony Miller with GF at (608) 400-6815 or awmiller@gfnet.com.

Sincerely,

Jim Hager
President – WRR Environmental Services Co., Inc.

Enc.
cc: Candace Sykora (WDNR)
Nathan Kloczko (WDHS)

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072381**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072381**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072381-01	PW-4	Drinking Wat		7/27/2021 12:45	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072381**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072381

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-4
Collection Date: 7/27/2021 12:45 PM

Work Order: 21072381
Lab ID: 21072381-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.93	4.9	ng/L	1	8/2/2021 18:48
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.66	4.9	ng/L	1	8/2/2021 18:48
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	4.9	ng/L	1	8/2/2021 18:48
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.89	4.9	ng/L	1	8/2/2021 18:48
Perfluorobutanesulfonic Acid (PFBS)	U		0.35	4.9	ng/L	1	8/2/2021 18:48
Perfluorobutanoic Acid (PFBA)	U		2.6	4.9	ng/L	1	8/2/2021 18:48
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	4.9	ng/L	1	8/2/2021 18:48
Perfluorodecanoic Acid (PFDA)	U		1.2	4.9	ng/L	1	8/2/2021 18:48
Perfluorododecanesulfonic Acid (PFDoS)	U		1.4	4.9	ng/L	1	8/2/2021 18:48
Perfluorododecanoic Acid (PFDoA)	U		1.4	4.9	ng/L	1	8/2/2021 18:48
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.56	4.9	ng/L	1	8/2/2021 18:48
Perfluoroheptanoic Acid (PFHpA)	U		0.43	4.9	ng/L	1	8/2/2021 18:48
Perfluorohexadecanoic Acid (PFHxDA)	U		0.38	4.9	ng/L	1	8/2/2021 18:48
Perfluorohexanesulfonic Acid (PFHxS)	**0.51**	J	**0.36**	**4.9**	**ng/L**	1	8/2/2021 18:48
Perfluorohexanoic Acid (PFHxA)	U		1.2	4.9	ng/L	1	8/2/2021 18:48
Perfluorononanesulfonic Acid (PFNS)	U		0.49	4.9	ng/L	1	8/2/2021 18:48
Perfluorononanoic Acid (PFNA)	U		0.86	4.9	ng/L	1	8/2/2021 18:48
Perfluorooctadecanoic Acid (PFODA)	U		0.64	4.9	ng/L	1	8/2/2021 18:48
Perfluorooctanesulfonamide (PFOSA)	U		0.70	4.9	ng/L	1	8/2/2021 18:48
Perfluorooctanesulfonic Acid (PFOS)	U		0.88	2.0	ng/L	1	8/2/2021 18:48
Perfluorooctanoic Acid (PFOA)	U		0.62	2.0	ng/L	1	8/2/2021 18:48
Perfluoropentanesulfonic Acid (PFPeS)	U		0.55	4.9	ng/L	1	8/2/2021 18:48
Perfluoropentanoic Acid (PFPeA)	U		1.3	4.9	ng/L	1	8/2/2021 18:48
Perfluorotetradecanoic Acid (PFTeA)	U		2.6	4.9	ng/L	1	8/2/2021 18:48
Perfluorotridecanoic Acid (PFTriA)	U		0.76	4.9	ng/L	1	8/2/2021 18:48
Perfluoroundecanoic Acid (PFUnA)	U		0.96	4.9	ng/L	1	8/2/2021 18:48
N-ethylperfluoro-1-octanesulfonamide	U		1.1	4.9	ng/L	1	8/2/2021 18:48
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.62	4.9	ng/L	1	8/2/2021 18:48
N-Ethylperfluorooctanesulfonamidoethanol	U		0.51	4.9	ng/L	1	8/2/2021 18:48
N-methylperfluoro-1-octanesulfonamide	U		0.78	4.9	ng/L	1	8/2/2021 18:48

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-4
Collection Date: 7/27/2021 12:45 PM

Work Order: 21072381
Lab ID: 21072381-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.64	4.9	ng/L	1	8/2/2021 18:48
N-Methylperfluorooctanesulfonamidoethanol	U		0.48	4.9	ng/L	1	8/2/2021 18:48
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	4.9	ng/L	1	8/2/2021 18:48
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.56	4.9	ng/L	1	8/2/2021 18:48
11Cl-Pf3OUdS	U		0.46	4.9	ng/L	1	8/2/2021 18:48
9Cl-PF3ONS	U		0.44	4.9	ng/L	1	8/2/2021 18:48
Surr: 13C2-FtS 4:2	*75.0*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-FtS 6:2	*108*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-FtS 8:2	*105*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-PFDA	*79.0*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-PFDoA	*92.3*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-PFHxA	*85.3*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-PFHxDA	*93.8*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-PFTeA	*85.6*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C2-PFUnA	*76.6*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C3-HFPO-DA	*89.2*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C3-PFBS	*89.0*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C4-PFBA	*89.7*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C4-PFHpA	*88.4*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C4-PFOA	*103*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C4-PFOS	*79.6*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C5-PFNA	*93.8*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C5-PFPeA	*93.2*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 13C8-FOSA	*89.5*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: 18O2-PFHxS	*72.8*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: d5-N-EtFOSA	*90.6*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: d5-N-EtFOSAA	*88.0*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: d9-N-EtFOSE	*86.9*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: d3-N-MeFOSA	*84.9*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: d3-N-MeFOSAA	*69.8*			*50-150*	*%REC*	1	8/2/2021 18:48
Surr: d7-N-MeFOSE	*86.6*			*50-150*	*%REC*	1	8/2/2021 18:48

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072381
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:35 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639082** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072381
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072381
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (I	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072381
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072381-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229888

ALS Project Manager: JD

ALS Work Order #: 21072387

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 826-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-4	7/27	12:45	DW	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] Other [ ] 2 WK Days [ ] 24 Hour

Results Due Date:

	Date:	Time:		
Relinquished by:	7/27	14:00	Received by: FedEx	
Relinquished by: FedEx	7/28/21	1400	Received by (Laboratory):	
Logged by (Laboratory):	7/28/21	1510	Checked by (Laboratory):	

Notes:

Cooler ID	Cooler Temp.
IR1	4.8°C

QC Package: (Check One Box Below)
[ ] Level II Std QC [ ] TRRP CheckList
[ ] Level III Std QC/Raw Data [ ] TRRP Level IV
[ ] Level IV SW846/CLP
[ ] Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072381** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2C	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:22:47 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072383**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072383**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072383-01	Field Blank	Water		7/27/2021 10:20	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072383**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072383

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.97	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.68	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.93	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanesulfonic Acid (PFBS)	U		0.36	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanoic Acid (PFBA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanoic Acid (PFDA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanesulfonic Acid (PFDoS)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanoic Acid (PFHpA)	U		0.45	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexadecanoic Acid (PFHxDA)	U		0.39	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanesulfonic Acid (PFHxS)	U		0.38	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanesulfonic Acid (PFNS)	U		0.51	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanoic Acid (PFNA)	U		0.90	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctadecanoic Acid (PFODA)	U		0.67	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonamide (PFOSA)	U		0.73	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonic Acid (PFOS)	U		0.92	2.1	ng/L	1	8/2/2021 19:09
Perfluorooctanoic Acid (PFOA)	U		0.65	2.1	ng/L	1	8/2/2021 19:09
Perfluoropentanesulfonic Acid (PFPeS)	U		0.57	5.2	ng/L	1	8/2/2021 19:09
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorotetradecanoic Acid (PFTeA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorotridecanoic Acid (PFTriA)	U		0.80	5.2	ng/L	1	8/2/2021 19:09
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.2	ng/L	1	8/2/2021 19:09
N-ethylperfluoro-1-octanesulfonamide	U		1.2	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.65	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoethanol	U		0.53	5.2	ng/L	1	8/2/2021 19:09
N-methylperfluoro-1-octanesulfonamide	U		0.82	5.2	ng/L	1	8/2/2021 19:09

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.2	ng/L	1	8/2/2021 19:09
N-Methylperfluorooctanesulfonamidoethanol	U		0.50	5.2	ng/L	1	8/2/2021 19:09
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
11Cl-Pf3OUdS	U		0.48	5.2	ng/L	1	8/2/2021 19:09
9Cl-PF3ONS	U		0.46	5.2	ng/L	1	8/2/2021 19:09
Surr: 13C2-FtS 4:2	*79.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 6:2	*97.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 8:2	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDA	*72.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDoA	*75.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxDA	*84.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFTeA	*77.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFUnA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-HFPO-DA	*80.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-PFBS	*83.2*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFBA	*82.9*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFHpA	*89.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOA	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOS	*74.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFNA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFPeA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C8-FOSA	*75.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 18O2-PFHxS	*73.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSA	*82.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSAA	*90.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d9-N-EtFOSE	*80.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSA	*83.6*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSAA	*74.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d7-N-MeFOSE	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:09

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:35 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639082** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072383-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229886

ALS Project Manager: JM

ALS Work Order #: 21072383

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Blank	7/27	10:20	water	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):
Logged by (Laboratory):	Date: 7/28/21	Time: 1524	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072383** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:29:19 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

WRR Environmental Services Co., Inc.

VIA Federal Express

August 6, 2021
File #55929.007

[redacted]
1823 Susan Drive
Eau Claire, WI 54701

Dear Neighbor of WRR Environmental Services:

On July 27, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5238 South Lowes Creek. The sample was collected as part of an investigation to determine the extent of groundwater impacted by per- and poly-fluoroalkyl substances (PFAS) that may be associated with a type of firefighting foam (AFFF) used to suppress fires at the WRR facility on Ryder Road in 2007 and 2010. The investigation activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-7. The water sample collected from your home in July was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 33 individual PFAS compounds. No PFAS compounds were detected in the water sample collected from your well. Copies of the lab reports for the sample collected from your well and the field blank that accompanied your sample when it was shipped to the laboratory are included with this letter.

Copies of this letter and the July 2021 lab reports are being sent to the WDNR and WDHS for their records. We thank you for your cooperation in our investigation. At this time, we do not anticipate the need to collect additional samples from your well. If you have any questions regarding the on-going PFAS investigation, please contact Ms. Candace Sykora with the WDNR at (715) 928-0452 or candace.sykora@wisconsin.gov. If you have any questions regarding the potential health impacts from PFAS, please contact Mr. Nathan Kloczko with the WDHS at (608) 267-3227 or Nathan.kloczko@dhs.wisconsin.gov.

If you have any questions about this letter or the results of the sample collected from your well, please contact Anthony Miller with GF at (608) 400-6815 or awmiller@gfnet.com.

Sincerely,

Jim Hager
President – WRR Environmental Services Co., Inc.

Enc.

cc: Candace Sykora (WDNR)
Nathan Kloczko (WDHS)

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072376**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 02:00 PM 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072376**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072376-01	PW-7	Drinking Wat		7/27/2021 13:15	7/28/2021 14:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072376**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072376

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-7
Collection Date: 7/27/2021 01:15 PM

Work Order: 21072376
Lab ID: 21072376-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.90	4.8	ng/L	1	8/2/2021 18:38
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.64	4.8	ng/L	1	8/2/2021 18:38
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	4.8	ng/L	1	8/2/2021 18:38
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.87	4.8	ng/L	1	8/2/2021 18:38
Perfluorobutanesulfonic Acid (PFBS)	U		0.34	4.8	ng/L	1	8/2/2021 18:38
Perfluorobutanoic Acid (PFBA)	U		2.5	4.8	ng/L	1	8/2/2021 18:38
Perfluorodecanesulfonic Acid (PFDS)	U		1.3	4.8	ng/L	1	8/2/2021 18:38
Perfluorodecanoic Acid (PFDA)	U		1.2	4.8	ng/L	1	8/2/2021 18:38
Perfluorododecanesulfonic Acid (PFDoS)	U		1.4	4.8	ng/L	1	8/2/2021 18:38
Perfluorododecanoic Acid (PFDoA)	U		1.4	4.8	ng/L	1	8/2/2021 18:38
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.54	4.8	ng/L	1	8/2/2021 18:38
Perfluoroheptanoic Acid (PFHpA)	U		0.42	4.8	ng/L	1	8/2/2021 18:38
Perfluorohexadecanoic Acid (PFHxDA)	U		0.36	4.8	ng/L	1	8/2/2021 18:38
Perfluorohexanesulfonic Acid (PFHxS)	U		0.35	4.8	ng/L	1	8/2/2021 18:38
Perfluorohexanoic Acid (PFHxA)	U		1.1	4.8	ng/L	1	8/2/2021 18:38
Perfluorononanesulfonic Acid (PFNS)	U		0.48	4.8	ng/L	1	8/2/2021 18:38
Perfluorononanoic Acid (PFNA)	U		0.83	4.8	ng/L	1	8/2/2021 18:38
Perfluorooctadecanoic Acid (PFODA)	U		0.62	4.8	ng/L	1	8/2/2021 18:38
Perfluorooctanesulfonamide (PFOSA)	U		0.68	4.8	ng/L	1	8/2/2021 18:38
Perfluorooctanesulfonic Acid (PFOS)	U		0.85	1.9	ng/L	1	8/2/2021 18:38
Perfluorooctanoic Acid (PFOA)	U		0.60	1.9	ng/L	1	8/2/2021 18:38
Perfluoropentanesulfonic Acid (PFPeS)	U		0.53	4.8	ng/L	1	8/2/2021 18:38
Perfluoropentanoic Acid (PFPeA)	U		1.2	4.8	ng/L	1	8/2/2021 18:38
Perfluorotetradecanoic Acid (PFTeA)	U		2.5	4.8	ng/L	1	8/2/2021 18:38
Perfluorotridecanoic Acid (PFTriA)	U		0.74	4.8	ng/L	1	8/2/2021 18:38
Perfluoroundecanoic Acid (PFUnA)	U		0.93	4.8	ng/L	1	8/2/2021 18:38
N-ethylperfluoro-1-octanesulfonamide	U		1.1	4.8	ng/L	1	8/2/2021 18:38
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.60	4.8	ng/L	1	8/2/2021 18:38
N-Ethylperfluorooctanesulfonamidoethanol	U		0.50	4.8	ng/L	1	8/2/2021 18:38
N-methylperfluoro-1-octanesulfonamide	U		0.76	4.8	ng/L	1	8/2/2021 18:38

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-7
Collection Date: 7/27/2021 01:15 PM

Work Order: 21072376
Lab ID: 21072376-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.62	4.8	ng/L	1	8/2/2021 18:38
N-Methylperfluorooctanesulfonamidoethanol	U		0.46	4.8	ng/L	1	8/2/2021 18:38
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.1	4.8	ng/L	1	8/2/2021 18:38
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.54	4.8	ng/L	1	8/2/2021 18:38
11Cl-Pf3OUdS	U		0.45	4.8	ng/L	1	8/2/2021 18:38
9Cl-PF3ONS	U		0.43	4.8	ng/L	1	8/2/2021 18:38
Surr: 13C2-FtS 4:2	*76.7*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-FtS 6:2	*90.9*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-FtS 8:2	*108*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-PFDA	*75.7*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-PFDoA	*66.5*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-PFHxA	*81.1*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-PFHxDA	*89.0*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-PFTeA	*73.1*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C2-PFUnA	*79.4*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C3-HFPO-DA	*82.4*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C3-PFBS	*84.3*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C4-PFBA	*79.2*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C4-PFHpA	*92.2*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C4-PFOA	*84.1*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C4-PFOS	*65.2*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C5-PFNA	*81.2*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C5-PFPeA	*90.0*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 13C8-FOSA	*79.4*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: 18O2-PFHxS	*78.1*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: d5-N-EtFOSA	*94.8*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: d5-N-EtFOSAA	*82.0*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: d9-N-EtFOSE	*84.4*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: d3-N-MeFOSA	*89.9*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: d3-N-MeFOSAA	*73.5*			*50-150*	*%REC*	1	8/2/2021 18:38
Surr: d7-N-MeFOSE	*87.7*			*50-150*	*%REC*	1	8/2/2021 18:38

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072376
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS	Sample ID: **LCS-181205-181205A**				Units: **ng/L**			Analysis Date: **8/2/2021 05:35 PM**			
Client ID:		Run ID: **LCMS1_210802C**			SeqNo: **7639082**			Prep Date: **8/2/2021**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072376
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid (	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid (	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (I	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072376
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (I	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072376
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072376-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229889

ALS Project Manager: JM

ALS Work Order #: 21072376

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, inc	Bill To Company	Gannett Fleming, inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1936	City/State/Zip	Madison, WI 53717-1936	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-7	7/27	13:15	DW	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx	
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):	
Logged by (Laboratory):	Date: 7/28/21	Time: 1507	Checked by (Laboratory):	

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP CheckList
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 14:00**

Work Order: **21072376** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2C	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:21:32 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072383**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072383**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072383-01	Field Blank	Water		7/27/2021 10:20	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072383**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072383

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.97	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.68	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.93	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanesulfonic Acid (PFBS)	U		0.36	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanoic Acid (PFBA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanoic Acid (PFDA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanesulfonic Acid (PFDoS)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanoic Acid (PFHpA)	U		0.45	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexadecanoic Acid (PFHxDA)	U		0.39	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanesulfonic Acid (PFHxS)	U		0.38	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanesulfonic Acid (PFNS)	U		0.51	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanoic Acid (PFNA)	U		0.90	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctadecanoic Acid (PFODA)	U		0.67	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonamide (PFOSA)	U		0.73	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonic Acid (PFOS)	U		0.92	2.1	ng/L	1	8/2/2021 19:09
Perfluorooctanoic Acid (PFOA)	U		0.65	2.1	ng/L	1	8/2/2021 19:09
Perfluoropentanesulfonic Acid (PFPeS)	U		0.57	5.2	ng/L	1	8/2/2021 19:09
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorotetradecanoic Acid (PFTeA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorotridecanoic Acid (PFTriA)	U		0.80	5.2	ng/L	1	8/2/2021 19:09
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.2	ng/L	1	8/2/2021 19:09
N-ethylperfluoro-1-octanesulfonamide	U		1.2	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.65	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoethanol	U		0.53	5.2	ng/L	1	8/2/2021 19:09
N-methylperfluoro-1-octanesulfonamide	U		0.82	5.2	ng/L	1	8/2/2021 19:09

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.2	ng/L	1	8/2/2021 19:09
N-Methylperfluorooctanesulfonamidoethanol	U		0.50	5.2	ng/L	1	8/2/2021 19:09
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
11Cl-Pf3OUdS	U		0.48	5.2	ng/L	1	8/2/2021 19:09
9Cl-PF3ONS	U		0.46	5.2	ng/L	1	8/2/2021 19:09
Surr: 13C2-FtS 4:2	*79.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 6:2	*97.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 8:2	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDA	*72.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDoA	*75.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxDA	*84.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFTeA	*77.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFUnA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-HFPO-DA	*80.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-PFBS	*83.2*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFBA	*82.9*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFHpA	*89.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOA	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOS	*74.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFNA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFPeA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C8-FOSA	*75.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 18O2-PFHxS	*73.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSA	*82.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSAA	*90.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d9-N-EtFOSE	*80.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSA	*83.6*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSAA	*74.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d7-N-MeFOSE	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:09

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:35 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639082** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072383-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229886

ALS Project Manager: JM

ALS Work Order #: 21072383

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Blank	7/27	10:20	water	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):
Logged by (Laboratory):	Date: 7/28/21	Time: 1524	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072383** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:29:19 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

WRR Environmental Services Co., Inc.

VIA Federal Express

August 6, 2021
File #55929.007

[redacted]
5524 South Lowes Creek Road
Eau Claire, WI 54701.9300

Dear Neighbor of WRR Environmental Services:

On July 27, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5238 South Lowes Creek. The sample was collected as part of an investigation to determine the extent of groundwater impacted by per- and poly-fluoroalkyl substances (PFAS) that may be associated with a type of firefighting foam (AFFF) used to suppress fires at the WRR facility on Ryder Road in 2007 and 2010. The investigation activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-8. The water sample collected from your home in July was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 33 individual PFAS compounds. No PFAS compounds were detected in the water sample collected from your well. Copies of the lab reports for the sample collected from your well and the field blank that accompanied your sample when it was shipped to the laboratory are included with this letter.

Copies of this letter and the July 2021 lab reports are being sent to the WDNR and WDHS for their records. We thank you for your cooperation in our investigation. At this time, we do not anticipate the need to collect additional samples from your well. If you have any questions regarding the on-going PFAS investigation, please contact Ms. Candace Sykora with the WDNR at (715) 928-0452 or candace.sykora@wisconsin.gov. If you have any questions regarding the potential health impacts from PFAS, please contact Mr. Nathan Kloczko with the WDHS at (608) 267-3227 or Nathan.kloczko@dhs.wisconsin.gov.

If you have any questions about this letter or the results of the sample collected from your well, please contact Anthony Miller with GF at (608) 400-6815 or awmiller@gfnet.com.

Sincerely,

Jim Hager
President – WRR Environmental Services Co., Inc.

Enc.
cc: Candace Sykora (WDNR)
Nathan Kloczko (WDHS)

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072387**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072387**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072387-01	PW-8	Drinking Wat		7/27/2021 11:25	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072387**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072387

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-8
Collection Date: 7/27/2021 11:25 AM

Work Order: 21072387
Lab ID: 21072387-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.93	5.0	ng/L	1	8/2/2021 19:30
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.66	5.0	ng/L	1	8/2/2021 19:30
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	5.0	ng/L	1	8/2/2021 19:30
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.90	5.0	ng/L	1	8/2/2021 19:30
Perfluorobutanesulfonic Acid (PFBS)	U		0.35	5.0	ng/L	1	8/2/2021 19:30
Perfluorobutanoic Acid (PFBA)	U		2.6	5.0	ng/L	1	8/2/2021 19:30
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.0	ng/L	1	8/2/2021 19:30
Perfluorodecanoic Acid (PFDA)	U		1.2	5.0	ng/L	1	8/2/2021 19:30
Perfluorododecanesulfonic Acid (PFDoS)	U		1.4	5.0	ng/L	1	8/2/2021 19:30
Perfluorododecanoic Acid (PFDoA)	U		1.4	5.0	ng/L	1	8/2/2021 19:30
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.56	5.0	ng/L	1	8/2/2021 19:30
Perfluoroheptanoic Acid (PFHpA)	U		0.44	5.0	ng/L	1	8/2/2021 19:30
Perfluorohexadecanoic Acid (PFHxDA)	U		0.38	5.0	ng/L	1	8/2/2021 19:30
Perfluorohexanesulfonic Acid (PFHxS)	U		0.37	5.0	ng/L	1	8/2/2021 19:30
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.0	ng/L	1	8/2/2021 19:30
Perfluorononanesulfonic Acid (PFNS)	U		0.49	5.0	ng/L	1	8/2/2021 19:30
Perfluorononanoic Acid (PFNA)	U		0.86	5.0	ng/L	1	8/2/2021 19:30
Perfluorooctadecanoic Acid (PFODA)	U		0.64	5.0	ng/L	1	8/2/2021 19:30
Perfluorooctanesulfonamide (PFOSA)	U		0.71	5.0	ng/L	1	8/2/2021 19:30
Perfluorooctanesulfonic Acid (PFOS)	U		0.88	2.0	ng/L	1	8/2/2021 19:30
Perfluorooctanoic Acid (PFOA)	U		0.63	2.0	ng/L	1	8/2/2021 19:30
Perfluoropentanesulfonic Acid (PFPeS)	U		0.55	5.0	ng/L	1	8/2/2021 19:30
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.0	ng/L	1	8/2/2021 19:30
Perfluorotetradecanoic Acid (PFTeA)	U		2.6	5.0	ng/L	1	8/2/2021 19:30
Perfluorotridecanoic Acid (PFTriA)	U		0.76	5.0	ng/L	1	8/2/2021 19:30
Perfluoroundecanoic Acid (PFUnA)	U		0.97	5.0	ng/L	1	8/2/2021 19:30
N-ethylperfluoro-1-octanesulfonamide	U		1.1	5.0	ng/L	1	8/2/2021 19:30
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.62	5.0	ng/L	1	8/2/2021 19:30
N-Ethylperfluorooctanesulfonamidoethanol	U		0.51	5.0	ng/L	1	8/2/2021 19:30
N-methylperfluoro-1-octanesulfonamide	U		0.79	5.0	ng/L	1	8/2/2021 19:30

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-8
Collection Date: 7/27/2021 11:25 AM

Work Order: 21072387
Lab ID: 21072387-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.64	5.0	ng/L	1	8/2/2021 19:30
N-Methylperfluorooctanesulfonamidoethanol	U		0.48	5.0	ng/L	1	8/2/2021 19:30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.0	ng/L	1	8/2/2021 19:30
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.56	5.0	ng/L	1	8/2/2021 19:30
11Cl-Pf3OUdS	U		0.46	5.0	ng/L	1	8/2/2021 19:30
9Cl-PF3ONS	U		0.44	5.0	ng/L	1	8/2/2021 19:30
Surr: 13C2-FtS 4:2	*86.2*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-FtS 6:2	*109*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-FtS 8:2	*138*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-PFDA	*115*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-PFDoA	*127*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-PFHxA	*94.4*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-PFHxDA	*101*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-PFTeA	*114*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C2-PFUnA	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C3-HFPO-DA	*84.9*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C3-PFBS	*100*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C4-PFBA	*101*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C4-PFHpA	*142*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C4-PFOA	*99.8*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C4-PFOS	*101*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C5-PFNA	*108*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C5-PFPeA	*106*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 13C8-FOSA	*112*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: 18O2-PFHxS	*95.8*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: d5-N-EtFOSA	*114*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: d5-N-EtFOSAA	*104*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: d9-N-EtFOSE	*110*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: d3-N-MeFOSA	*107*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: d3-N-MeFOSAA	*91.9*			*50-150*	*%REC*	1	8/2/2021 19:30
Surr: d7-N-MeFOSE	*118*			*50-150*	*%REC*	1	8/2/2021 19:30

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072387
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS	Sample ID: **LCS-181205-181205A**				Units: **ng/L**			Analysis Date: **8/2/2021 05:35 PM**			
Client ID:		Run ID: **LCMS1_210802C**			SeqNo: **7639082**			Prep Date: **8/2/2021**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (I	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072387
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072387
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072387
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072387-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229885

ALS Project Manager: JD

ALS Work Order #: 21072387

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Cannett Fleming, Inc	Bill To Company	Cannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	2040 Excelsior Drive Suite 303	Address	2040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-8	7/27/21	11:25	DW	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] Other 2 WK Days [ ] 24 Hour

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx	
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):	
Logged by (Laboratory):	Date: 7/28/21	Time: 1531	Checked by (Laboratory):	

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] TRRP Checklist
[ ] TRRP Level IV
[ ] Other

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072387** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:35:41 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072383**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072383**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072383-01	Field Blank	Water		7/27/2021 10:20	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072383**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072383

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.97	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.68	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.93	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanesulfonic Acid (PFBS)	U		0.36	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanoic Acid (PFBA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanoic Acid (PFDA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanesulfonic Acid (PFDoS)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanoic Acid (PFHpA)	U		0.45	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexadecanoic Acid (PFHxDA)	U		0.39	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanesulfonic Acid (PFHxS)	U		0.38	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanesulfonic Acid (PFNS)	U		0.51	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanoic Acid (PFNA)	U		0.90	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctadecanoic Acid (PFODA)	U		0.67	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonamide (PFOSA)	U		0.73	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonic Acid (PFOS)	U		0.92	2.1	ng/L	1	8/2/2021 19:09
Perfluorooctanoic Acid (PFOA)	U		0.65	2.1	ng/L	1	8/2/2021 19:09
Perfluoropentanesulfonic Acid (PFPeS)	U		0.57	5.2	ng/L	1	8/2/2021 19:09
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorotetradecanoic Acid (PFTeA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorotridecanoic Acid (PFTriA)	U		0.80	5.2	ng/L	1	8/2/2021 19:09
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.2	ng/L	1	8/2/2021 19:09
N-ethylperfluoro-1-octanesulfonamide	U		1.2	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.65	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoethanol	U		0.53	5.2	ng/L	1	8/2/2021 19:09
N-methylperfluoro-1-octanesulfonamide	U		0.82	5.2	ng/L	1	8/2/2021 19:09

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.2	ng/L	1	8/2/2021 19:09
N-Methylperfluorooctanesulfonamidoethanol	U		0.50	5.2	ng/L	1	8/2/2021 19:09
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
11Cl-Pf3OUdS	U		0.48	5.2	ng/L	1	8/2/2021 19:09
9Cl-PF3ONS	U		0.46	5.2	ng/L	1	8/2/2021 19:09
Surr: 13C2-FtS 4:2	*79.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 6:2	*97.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 8:2	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDA	*72.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDoA	*75.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxDA	*84.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFTeA	*77.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFUnA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-HFPO-DA	*80.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-PFBS	*83.2*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFBA	*82.9*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFHpA	*89.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOA	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOS	*74.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFNA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFPeA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C8-FOSA	*75.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 18O2-PFHxS	*73.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSA	*82.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSAA	*90.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d9-N-EtFOSE	*80.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSA	*83.6*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSAA	*74.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d7-N-MeFOSE	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:09

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:35 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639082** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072383-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229886

ALS Project Manager: JM

ALS Work Order #: 21072383

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Blank	7/27	10:20	water	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):
Logged by (Laboratory):	Date: 7/28/21	Time: 1524	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072383** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:29:19 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

WRR Environmental Services Co., Inc.

VIA Federal Express

August 6, 2021
File #55929.007

[redacted]
5520 Wild Rose Lane
Eau Claire, WI 54701-9300

Dear Neighbor of WRR Environmental Services:

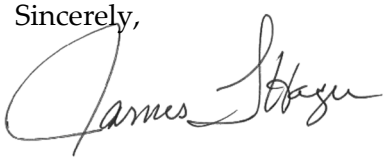
On July 27, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5238 South Lowes Creek. The sample was collected as part of an investigation to determine the extent of groundwater impacted by per- and poly-fluoroalkyl substances (PFAS) that may be associated with a type of firefighting foam (AFFF) used to suppress fires at the WRR facility on Ryder Road in 2007 and 2010. The investigation activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-14. The water sample collected from your home in July was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 33 individual PFAS compounds. No PFAS compounds were detected in the water sample collected from your well. Copies of the lab reports for the sample collected from your well and the field blank that accompanied your sample when it was shipped to the laboratory are included with this letter.

Copies of this letter and the July 2021 lab reports are being sent to the WDNR and WDHS for their records. We thank you for your cooperation in our investigation. At this time, we do not anticipate the need to collect additional samples from your well. If you have any questions regarding the on-going PFAS investigation, please contact Ms. Candace Sykora with the WDNR at (715) 928-0452 or candace.sykora@wisconsin.gov. If you have any questions regarding the potential health impacts from PFAS, please contact Mr. Nathan Kloczko with the WDHS at (608) 267-3227 or Nathan.kloczko@dhs.wisconsin.gov.

If you have any questions about this letter or the results of the sample collected from your well, please contact Anthony Miller with GF at (608) 400-6815 or awmiller@gfnet.com.

Sincerely,



Jim Hager
President – WRR Environmental Services Co., Inc.

Enc.
cc: Candace Sykora (WDNR)
Nathan Kloczko (WDHS)

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072391**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072391**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072391-01	PW-14	Drinking Wat		7/27/2021 10:45	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072391**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072391

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-14
Collection Date: 7/27/2021 10:45 AM

Work Order: 21072391
Lab ID: 21072391-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		1.0	5.3	ng/L	1	8/2/2021 19:51
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.71	5.3	ng/L	1	8/2/2021 19:51
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.3	ng/L	1	8/2/2021 19:51
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.96	5.3	ng/L	1	8/2/2021 19:51
Perfluorobutanesulfonic Acid (PFBS)	U		0.37	5.3	ng/L	1	8/2/2021 19:51
Perfluorobutanoic Acid (PFBA)	U		2.8	5.3	ng/L	1	8/2/2021 19:51
Perfluorodecanesulfonic Acid (PFDS)	U		1.5	5.3	ng/L	1	8/2/2021 19:51
Perfluorodecanoic Acid (PFDA)	U		1.3	5.3	ng/L	1	8/2/2021 19:51
Perfluorododecanesulfonic Acid (PFDoS)	U		1.5	5.3	ng/L	1	8/2/2021 19:51
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.3	ng/L	1	8/2/2021 19:51
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.60	5.3	ng/L	1	8/2/2021 19:51
Perfluoroheptanoic Acid (PFHpA)	U		0.47	5.3	ng/L	1	8/2/2021 19:51
Perfluorohexadecanoic Acid (PFHxDA)	U		0.41	5.3	ng/L	1	8/2/2021 19:51
Perfluorohexanesulfonic Acid (PFHxS)	U		0.39	5.3	ng/L	1	8/2/2021 19:51
Perfluorohexanoic Acid (PFHxA)	U		1.3	5.3	ng/L	1	8/2/2021 19:51
Perfluorononanesulfonic Acid (PFNS)	U		0.53	5.3	ng/L	1	8/2/2021 19:51
Perfluorononanoic Acid (PFNA)	U		0.93	5.3	ng/L	1	8/2/2021 19:51
Perfluorooctadecanoic Acid (PFODA)	U		0.69	5.3	ng/L	1	8/2/2021 19:51
Perfluorooctanesulfonamide (PFOSA)	U		0.76	5.3	ng/L	1	8/2/2021 19:51
Perfluorooctanesulfonic Acid (PFOS)	U		0.95	2.1	ng/L	1	8/2/2021 19:51
Perfluorooctanoic Acid (PFOA)	U		0.67	2.1	ng/L	1	8/2/2021 19:51
Perfluoropentanesulfonic Acid (PFPeS)	U		0.59	5.3	ng/L	1	8/2/2021 19:51
Perfluoropentanoic Acid (PFPeA)	U		1.4	5.3	ng/L	1	8/2/2021 19:51
Perfluorotetradecanoic Acid (PFTeA)	U		2.8	5.3	ng/L	1	8/2/2021 19:51
Perfluorotridecanoic Acid (PFTriA)	U		0.82	5.3	ng/L	1	8/2/2021 19:51
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.3	ng/L	1	8/2/2021 19:51
N-ethylperfluoro-1-octanesulfonamide	U		1.2	5.3	ng/L	1	8/2/2021 19:51
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.3	ng/L	1	8/2/2021 19:51
N-Ethylperfluorooctanesulfonamidoethanol	U		0.55	5.3	ng/L	1	8/2/2021 19:51
N-methylperfluoro-1-octanesulfonamide	U		0.84	5.3	ng/L	1	8/2/2021 19:51

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-14
Collection Date: 7/27/2021 10:45 AM

Work Order: 21072391
Lab ID: 21072391-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.69	5.3	ng/L	1	8/2/2021 19:51
N-Methylperfluorooctanesulfonamidoethanol	U		0.51	5.3	ng/L	1	8/2/2021 19:51
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.3	ng/L	1	8/2/2021 19:51
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.60	5.3	ng/L	1	8/2/2021 19:51
11Cl-Pf3OUdS	U		0.50	5.3	ng/L	1	8/2/2021 19:51
9Cl-PF3ONS	U		0.48	5.3	ng/L	1	8/2/2021 19:51
Surr: 13C2-FtS 4:2	*73.5*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-FtS 6:2	*90.6*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-FtS 8:2	*105*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-PFDA	*82.5*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-PFDoA	*73.1*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-PFHxA	*85.4*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-PFHxDA	*60.3*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-PFTeA	*70.7*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C2-PFUnA	*80.1*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C3-HFPO-DA	*82.2*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C3-PFBS	*85.9*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C4-PFBA	*83.9*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C4-PFHpA	*93.6*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C4-PFOA	*90.7*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C4-PFOS	*70.2*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C5-PFNA	*83.8*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C5-PFPeA	*90.2*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 13C8-FOSA	*82.8*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: 18O2-PFHxS	*78.8*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: d5-N-EtFOSA	*98.9*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: d5-N-EtFOSAA	*80.7*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: d9-N-EtFOSE	*84.2*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: d3-N-MeFOSA	*93.5*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: d3-N-MeFOSAA	*74.0*			*50-150*	*%REC*	1	8/2/2021 19:51
Surr: d7-N-MeFOSE	*95.2*			*50-150*	*%REC*	1	8/2/2021 19:51

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072391
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS	Sample ID: **LCS-181205-181205A**				Units: **ng/L**			Analysis Date: **8/2/2021 05:35 PM**			
Client ID:		Run ID: **LCMS1_210802C**			SeqNo: **7639082**			Prep Date: **8/2/2021**		DF: **1**	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (I	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072391
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid (	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid (	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (I	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072391
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072391
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072391-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229883

ALS Project Manager: JM

ALS Work Order #: 21072391

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E	
				F	
City/State/Zip	Madison, WI 53717-1339	City/State/Zip	Madison, WI 53717-1339	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-14	7/27/21	10:45	DW	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] Other [ ] 2 WK Days [ ] 24 Hour

Results Due Date:

	Date:	Time:		
Relinquished by:	7/27	14.00	Received by:	FedEx
Relinquished by: FedEx	7/28/21	1400	Received by (Laboratory):	
Logged by (Laboratory):	7/28/21	1537	Checked by (Laboratory):	

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC [ ] TRRP CheckList
[ ] Level III Std QC/Raw Data [ ] TRRP Level IV
[ ] Level IV SW846/CLP
[ ] Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072391** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:38:16 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

05-Aug-2021

Anthony Miller
Gannett Fleming, Inc.
8040 Excelsior Drive
Suite 303
Madison, WI 53717-1338

Re: **WRR 55929.007** Work Order: **21072383**

Dear Anthony,

ALS Environmental received 1 sample on 28-Jul-2021 11:00 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 16.

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,

Jodi Blouw

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: **21072383**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21072383-01	Field Blank	Water		7/27/2021 10:20	7/28/2021 11:00	☐

ALS Group, USA

Date: 05-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: **21072383**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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.

Acronym	Description
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

Units Reported	Description
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21072383

Case Narrative

Samples for the above noted Work Order were received on 07/28/2021. 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:
No deviations or anomalies were noted.

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED		Method: **E537 MOD**					Analyst: **SK**
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.97	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.68	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.93	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanesulfonic Acid (PFBS)	U		0.36	5.2	ng/L	1	8/2/2021 19:09
Perfluorobutanoic Acid (PFBA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanesulfonic Acid (PFDS)	U		1.4	5.2	ng/L	1	8/2/2021 19:09
Perfluorodecanoic Acid (PFDA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanesulfonic Acid (PFDoS)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluorododecanoic Acid (PFDoA)	U		1.5	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
Perfluoroheptanoic Acid (PFHpA)	U		0.45	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexadecanoic Acid (PFHxDA)	U		0.39	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanesulfonic Acid (PFHxS)	U		0.38	5.2	ng/L	1	8/2/2021 19:09
Perfluorohexanoic Acid (PFHxA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanesulfonic Acid (PFNS)	U		0.51	5.2	ng/L	1	8/2/2021 19:09
Perfluorononanoic Acid (PFNA)	U		0.90	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctadecanoic Acid (PFODA)	U		0.67	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonamide (PFOSA)	U		0.73	5.2	ng/L	1	8/2/2021 19:09
Perfluorooctanesulfonic Acid (PFOS)	U		0.92	2.1	ng/L	1	8/2/2021 19:09
Perfluorooctanoic Acid (PFOA)	U		0.65	2.1	ng/L	1	8/2/2021 19:09
Perfluoropentanesulfonic Acid (PFPeS)	U		0.57	5.2	ng/L	1	8/2/2021 19:09
Perfluoropentanoic Acid (PFPeA)	U		1.3	5.2	ng/L	1	8/2/2021 19:09
Perfluorotetradecanoic Acid (PFTeA)	U		2.7	5.2	ng/L	1	8/2/2021 19:09
Perfluorotridecanoic Acid (PFTriA)	U		0.80	5.2	ng/L	1	8/2/2021 19:09
Perfluoroundecanoic Acid (PFUnA)	U		1.0	5.2	ng/L	1	8/2/2021 19:09
N-ethylperfluoro-1-octanesulfonamide	U		1.2	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.65	5.2	ng/L	1	8/2/2021 19:09
N-Ethylperfluorooctanesulfonamidoethanol	U		0.53	5.2	ng/L	1	8/2/2021 19:09
N-methylperfluoro-1-octanesulfonamide	U		0.82	5.2	ng/L	1	8/2/2021 19:09

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

ALS Group, USA

Date: *05-Aug-21*

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 7/27/2021 10:20 AM

Work Order: 21072383
Lab ID: 21072383-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.67	5.2	ng/L	1	8/2/2021 19:09
N-Methylperfluorooctanesulfonamidoethanol	U		0.50	5.2	ng/L	1	8/2/2021 19:09
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.2	5.2	ng/L	1	8/2/2021 19:09
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.58	5.2	ng/L	1	8/2/2021 19:09
11Cl-Pf3OUdS	U		0.48	5.2	ng/L	1	8/2/2021 19:09
9Cl-PF3ONS	U		0.46	5.2	ng/L	1	8/2/2021 19:09
Surr: 13C2-FtS 4:2	*79.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 6:2	*97.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-FtS 8:2	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDA	*72.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFDoA	*75.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFHxDA	*84.8*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFTeA	*77.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C2-PFUnA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-HFPO-DA	*80.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C3-PFBS	*83.2*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFBA	*82.9*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFHpA	*89.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOA	*95.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C4-PFOS	*74.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFNA	*87.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C5-PFPeA	*86.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 13C8-FOSA	*75.3*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: 18O2-PFHxS	*73.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSA	*82.7*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d5-N-EtFOSAA	*90.5*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d9-N-EtFOSE	*80.1*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSA	*83.6*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d3-N-MeFOSAA	*74.4*			*50-150*	*%REC*	1	8/2/2021 19:09
Surr: d7-N-MeFOSE	*90.1*			*50-150*	*%REC*	1	8/2/2021 19:09

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:25 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639081** Prep Date: **8/2/2021** 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								
Fluorotelomer Sulphonic Acid	U	0.9	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								
Perfluorododecanesulfonic Aci	U	1.4	5.0								
Perfluorododecanoic Acid (PFI	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH	U	0.44	5.0								
Perfluorohexadecanoic Acid (F	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx	U	1.2	5.0								
Perfluorononanesulfonic Acid	U	0.5	5.0								
Perfluorononanoic Acid (PFNA	U	0.87	5.0								
Perfluorooctadecanoic Acid (P	U	0.65	5.0								
Perfluorooctanesulfonamide (F	U	0.71	5.0								
Perfluorooctanesulfonic Acid (	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA	U	0.63	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 (PFT	U	0.77	5.0								
Perfluoroundecanoic Acid (PFI	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfo	U	1.2	5.0								
N-Ethylperfluorooctanesulfona	U	0.63	5.0								
N-Ethylperfluorooctanesulfona	U	0.52	5.0								
N-methylperfluoro-1-octanesul	U	0.79	5.0								
N-Methylperfluorooctanesulfor	U	0.64	5.0								
N-Methylperfluorooctanesulfor	U	0.48	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	*109.8*	0	0	*149.4*	0	*73.4*	*50-150*	0			
Surr: 13C2-FtS 6:2	*114.8*	0	0	*152*	0	*75.5*	*50-150*	0			
Surr: 13C2-FtS 8:2	*141.1*	0	0	*153.3*	0	*92*	*50-150*	0			
Surr: 13C2-PFDA	*111*	0	0	*160*	0	*69.3*	*50-150*	0			
Surr: 13C2-PFDoA	*113*	0	0	*160*	0	*70.6*	*50-150*	0			

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

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxA	*110.5*	0	0	*160*	0	*69*	*50-150*	0
Surr: 13C2-PFHxDA	*130.1*	0	0	*160*	0	*81.3*	*50-150*	0
Surr: 13C2-PFTeA	*125.1*	0	0	*160*	0	*78.2*	*50-150*	0
Surr: 13C2-PFUnA	*117.5*	0	0	*160*	0	*73.5*	*50-150*	0
Surr: 13C3-HFPO-DA	*115.2*	0	0	*160*	0	*72*	*50-150*	0
Surr: 13C3-PFBS	*121.7*	0	0	*148.8*	0	*81.8*	*50-150*	0
Surr: 13C4-PFBA	*128.1*	0	0	*160*	0	*80.1*	*50-150*	0
Surr: 13C4-PFHpA	*162.1*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOA	*116.9*	0	0	*160*	0	*73.1*	*50-150*	0
Surr: 13C4-PFOS	*95.35*	0	0	*152.8*	0	*62.4*	*50-150*	0
Surr: 13C5-PFNA	*116.1*	0	0	*160*	0	*72.6*	*50-150*	0
Surr: 13C5-PFPeA	*135.3*	0	0	*160*	0	*84.5*	*50-150*	0
Surr: 13C8-FOSA	*132.5*	0	0	*160*	0	*82.8*	*50-150*	0
Surr: 18O2-PFHxS	*125*	0	0	*151.2*	0	*82.6*	*50-150*	0
Surr: d5-N-EtFOSA	*121.4*	0	0	*160*	0	*75.9*	*50-150*	0
Surr: d5-N-EtFOSAA	*131.7*	0	0	*160*	0	*82.3*	*50-150*	0
Surr: d9-N-EtFOSE	*124.4*	0	0	*160*	0	*77.8*	*50-150*	0
Surr: d3-N-MeFOSA	*118.1*	0	0	*160*	0	*73.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*111.3*	0	0	*160*	0	*69.5*	*50-150*	0
Surr: d7-N-MeFOSE	*122.2*	0	0	*160*	0	*76.4*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/2/2021 05:35 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639082** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	33.55	0.94	5.0	29.9	0	112	63-143	0			
Fluorotelomer Sulphonic Acid	35.29	0.66	5.0	30.3	0	116	64-140	0			
Fluorotelomer Sulphonic Acid	26.67	0.9	5.0	30.8	0	86.6	40-160	0			
Perfluorobutanesulfonic Acid (	28.61	0.35	5.0	28.3	0	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	33.88	2.6	5.0	32	0	106	73-129	0			
Perfluorodecanesulfonic Acid	36.21	1.4	5.0	30.8	0	118	53-142	0			
Perfluorodecanoic Acid (PFDA	37.98	1.2	5.0	32	0	119	71-129	0			
Perfluorododecanesulfonic Aci	29.31	1.4	5.0	31	0	94.6	69-134	0			
Perfluorododecanoic Acid (PFI	33.27	1.4	5.0	32	0	104	72-134	0			
Perfluoroheptanesulfonic Acid	27.93	0.57	5.0	30.5	0	91.6	69-134	0			
Perfluorohexadecanoic Acid (F	30.17	0.38	5.0	32	0	94.3	70-130	0			
Perfluorohexanesulfonic Acid	30.67	0.37	5.0	29.1	0	105	68-131	0			
Perfluorohexanoic Acid (PFHx	33.23	1.2	5.0	32	0	104	72-129	0			
Perfluorononanesulfonic Acid	34.76	0.5	5.0	30.7	0	113	69-127	0			
Perfluorononanoic Acid (PFNA	30.19	0.87	5.0	32	0	94.4	69-130	0			
Perfluorooctadecanoic Acid (P	37.91	0.65	5.0	32	0	118	70-130	0			
Perfluorooctanesulfonamide (F	27.94	0.71	5.0	32	0	87.3	67-137	0			
Perfluorooctanesulfonic Acid (	33.41	0.89	2.0	29.7	0	112	65-140	0			
Perfluorooctanoic Acid (PFOA	33.06	0.63	2.0	32	0	103	71-133	0			
Perfluoropentanesulfonic Acid	32.55	0.56	5.0	30	0	109	71-127	0			
Perfluoropentanoic Acid (PFPe	29.91	1.3	5.0	32	0	93.5	72-129	0			
Perfluorotetradecanoic Acid (F	27.16	2.6	5.0	32	0	84.9	71-132	0			
Perfluorotridecanoic Acid (PFT	27.05	0.77	5.0	32	0	84.5	65-144	0			
Perfluoroundecanoic Acid (PFI	40.12	0.97	5.0	32	0	125	69-133	0			
N-ethylperfluoro-1-octanesulfo	34.2	1.2	5.0	32	0	107	70-130	0			
N-Ethylperfluorooctanesulfona	41.67	0.63	5.0	32	0	130	61-135	0			
N-Ethylperfluorooctanesulfona	31.35	0.52	5.0	32	0	98	70-130	0			
N-methylperfluoro-1-octanesul	33.27	0.79	5.0	32	0	104	70-130	0			
N-Methylperfluorooctanesulfor	30.5	0.64	5.0	32	0	95.3	65-136	0			
N-Methylperfluorooctanesulfor	32.66	0.48	5.0	32	0	102	68-141	0			
Hexafluoropropylene oxide din	35.19	1.2	5.0	32	0	110	70-130	0			
4,8-Dioxa-3H-perfluorononano	31.27	0.56	5.0	30.1	0	104	70-130	0			
11Cl-Pf3OUdS	37.07	0.47	5.0	30.1	0	123	70-130	0			
9Cl-PF3ONS	31.16	0.45	5.0	29.8	0	105	70-130	0			
Surr: 13C2-FtS 4:2	*160.3*	0	0	*149.4*	0	*107*	*50-150*	0			
Surr: 13C2-FtS 6:2	*174.6*	0	0	*152*	0	*115*	*50-150*	0			
Surr: 13C2-PFDA	*186.2*	0	0	*160*	0	*116*	*50-150*	0			
Surr: 13C2-PFDoA	*198.6*	0	0	*160*	0	*124*	*50-150*	0			
Surr: 13C2-PFHxA	*178.1*	0	0	*160*	0	*111*	*50-150*	0			
Surr: 13C2-PFHxDA	*192.3*	0	0	*160*	0	*120*	*50-150*	0			
Surr: 13C2-PFTeA	*208.9*	0	0	*160*	0	*131*	*50-150*	0			
Surr: 13C2-PFUnA	*124.7*	0	0	*160*	0	*78*	*50-150*	0			
Surr: 13C3-HFPO-DA	*170.7*	0	0	*160*	0	*107*	*50-150*	0			

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

Batch ID: **181205A**	Instrument ID **LCMS1**			Method: **E537 Mod**				
Surr: 13C3-PFBS	*166.9*	0	0	*148.8*	0	*112*	*50-150*	0
Surr: 13C4-PFBA	*177.7*	0	0	*160*	0	*111*	*50-150*	0
Surr: 13C4-PFOA	*160.9*	0	0	*160*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*163.2*	0	0	*152.8*	0	*107*	*50-150*	0
Surr: 13C5-PFNA	*168.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: 13C5-PFPeA	*183.4*	0	0	*160*	0	*115*	*50-150*	0
Surr: 13C8-FOSA	*189.8*	0	0	*160*	0	*119*	*50-150*	0
Surr: 18O2-PFHxS	*154.8*	0	0	*151.2*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*162.9*	0	0	*160*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSAA	*150.1*	0	0	*160*	0	*93.8*	*50-150*	0
Surr: d9-N-EtFOSE	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSA	*167.4*	0	0	*160*	0	*105*	*50-150*	0
Surr: d3-N-MeFOSAA	*175.7*	0	0	*160*	0	*110*	*50-150*	0
Surr: d7-N-MeFOSE	*178.2*	0	0	*160*	0	*111*	*50-150*	0

LCS Sample ID: **LCS-181205-181205A** Units: **ng/L** Analysis Date: **8/3/2021 09:53 AM**

Client ID: Run ID: **LCMS1_210803C** SeqNo: **7640837** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.36	1.1	5.0	30.7	0	112	67-138	0			
Perfluoroheptanoic Acid (PFH	28.62	0.44	5.0	32	0	89.4	72-130	0			
Surr: 13C2-FtS 8:2	*200.5*	0	0	*153.3*	0	*131*	*50-150*	0			
Surr: 13C4-PFHpA	*161.3*	0	0	*160*	0	*101*	*50-150*	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **21072636-01H MS** Units: **ng/L** Analysis Date: **8/2/2021 05:45 PM**
Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639083** Prep Date: **8/2/2021** DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	28.28	0.84	4.5	26.79	0	106	63-143	0			
Fluorotelomer Sulphonic Acid	31.85	0.59	4.5	27.15	0.3785	116	64-140	0			
Fluorotelomer Sulphonic Acid	25.94	1	4.5	27.51	0	94.3	67-138	0			
Fluorotelomer Sulphonic Acid	28.55	0.81	4.5	27.6	0	103	40-160	0			
Perfluorobutanesulfonic Acid (	26.05	0.31	4.5	25.36	0	103	72-130	0			
Perfluorobutanoic Acid (PFBA)	28.77	2.3	4.5	28.67	0	100	73-129	0			
Perfluorodecanesulfonic Acid	27.83	1.2	4.5	27.6	0	101	53-142	0			
Perfluorodecanoic Acid (PFDA	29.96	1.1	4.5	28.67	-0.4502	106	71-129	0			
Perfluorododecanesulfonic Aci	21.32	1.3	4.5	27.78	0	76.8	69-134	0			
Perfluorododecanoic Acid (PFI	26.16	1.3	4.5	28.67	0.1634	90.7	72-134	0			
Perfluoroheptanesulfonic Acid	22.66	0.51	4.5	27.33	0	82.9	69-134	0			
Perfluoroheptanoic Acid (PFH	30.37	0.39	4.5	28.67	0.2466	105	72-130	0			
Perfluorohexadecanoic Acid (F	26.41	0.34	4.5	28.67	0	92.1	70-130	0			
Perfluorohexanesulfonic Acid	24.36	0.33	4.5	26.08	0	93.4	68-131	0			
Perfluorohexanoic Acid (PFHx	27.8	1.1	4.5	28.67	0.2667	96	72-129	0			
Perfluorononanesulfonic Acid	30	0.44	4.5	27.51	0	109	69-127	0			
Perfluorononanoic Acid (PFNA	25.46	0.78	4.5	28.67	0.4416	87.3	69-130	0			
Perfluorooctadecanoic Acid (P	34.82	0.58	4.5	28.67	0.1032	121	70-130	0			
Perfluorooctanesulfonamide (F	24.66	0.64	4.5	28.67	0.05161	85.8	67-137	0			
Perfluorooctanesulfonic Acid (	25.06	0.8	1.8	26.61	0	94.2	65-140	0			
Perfluorooctanoic Acid (PFOA	25.8	0.56	1.8	28.67	0.1262	89.5	71-133	0			
Perfluoropentanesulfonic Acid	25.92	0.5	4.5	26.88	0	96.4	71-127	0			
Perfluoropentanoic Acid (PFPe	26.44	1.1	4.5	28.67	0.6452	90	72-129	0			
Perfluorotetradecanoic Acid (F	25.96	2.4	4.5	28.67	0.2409	89.7	71-132	0			
Perfluorotridecanoic Acid (PFT	27.02	0.69	4.5	28.67	0.1004	93.9	65-144	0			
Perfluoroundecanoic Acid (PFI	32.34	0.87	4.5	28.67	0.3068	112	69-133	0			
N-ethylperfluoro-1-octanesulfo	26.13	1	4.5	28.67	0	91.1	70-130	0			
N-Ethylperfluorooctanesulfona	31.06	0.56	4.5	28.67	0	108	61-135	0			
N-Ethylperfluorooctanesulfona	24.43	0.46	4.5	28.67	0	85.2	70-130	0			
N-methylperfluoro-1-octanesul	27.66	0.71	4.5	28.67	0	96.5	70-130	0			
N-Methylperfluorooctanesulfor	31.83	0.58	4.5	28.67	0.129	111	65-136	0			
N-Methylperfluorooctanesulfor	36.17	0.43	4.5	28.67	0	126	68-141	0			
Hexafluoropropylene oxide din	30.51	1	4.5	28.67	0.1921	106	70-130	0			
4,8-Dioxa-3H-perfluorononano	22.26	0.5	4.5	26.97	0	82.5	70-130	0			
11Cl-Pf3OUdS	24.95	0.42	4.5	26.97	0	92.5	70-130	0			
9Cl-PF3ONS	22.98	0.4	4.5	26.7	0	86.1	70-130	0			
Surr: 13C2-FtS 4:2	*129.8*	0	0	*133.9*	0	*97*	*50-150*	0			
Surr: 13C2-FtS 6:2	*134.7*	0	0	*136.2*	0	*98.9*	*50-150*	0			
Surr: 13C2-FtS 8:2	*168.2*	0	0	*137.3*	0	*122*	*50-150*	0			
Surr: 13C2-PFDA	*138*	0	0	*143.4*	0	*96.2*	*50-150*	0			
Surr: 13C2-PFDoA	*134.7*	0	0	*143.4*	0	*93.9*	*50-150*	0			
Surr: 13C2-PFHxA	*154.9*	0	0	*143.4*	0	*108*	*50-150*	0			
Surr: 13C2-PFHxDA	*160*	0	0	*143.4*	0	*112*	*50-150*	0			

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

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*148.8*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C2-PFUnA	*128.5*	0	0	*143.4*	0	*89.6*	*50-150*	0
Surr: 13C3-HFPO-DA	*140.7*	0	0	*143.4*	0	*98.1*	*50-150*	0
Surr: 13C3-PFBS	*129.5*	0	0	*133.3*	0	*97.1*	*50-150*	0
Surr: 13C4-PFBA	*148.5*	0	0	*143.4*	0	*104*	*50-150*	0
Surr: 13C4-PFHpA	*181.8*	0	0	*143.4*	0	*127*	*50-150*	0
Surr: 13C4-PFOA	*144.6*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C4-PFOS	*137.4*	0	0	*136.9*	0	*100*	*50-150*	0
Surr: 13C5-PFNA	*155.4*	0	0	*143.4*	0	*108*	*50-150*	0
Surr: 13C5-PFPeA	*144.8*	0	0	*143.4*	0	*101*	*50-150*	0
Surr: 13C8-FOSA	*132*	0	0	*143.4*	0	*92*	*50-150*	0
Surr: 18O2-PFHxS	*146.5*	0	0	*135.5*	0	*108*	*50-150*	0
Surr: d5-N-EtFOSA	*156*	0	0	*143.4*	0	*109*	*50-150*	0
Surr: d5-N-EtFOSAA	*133.7*	0	0	*143.4*	0	*93.2*	*50-150*	0
Surr: d9-N-EtFOSE	*146.6*	0	0	*143.4*	0	*102*	*50-150*	0
Surr: d3-N-MeFOSA	*143.1*	0	0	*143.4*	0	*99.8*	*50-150*	0
Surr: d3-N-MeFOSAA	*118.8*	0	0	*143.4*	0	*82.9*	*50-150*	0
Surr: d7-N-MeFOSE	*120.1*	0	0	*143.4*	0	*83.8*	*50-150*	0

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **21071499-05A DUP** Units: **ng/L** Analysis Date: **8/2/2021 06:06 PM**

Client ID: Run ID: **LCMS1_210802C** SeqNo: **7639085** Prep Date: **8/2/2021** 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	0.88	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	2.418	0.62	4.7	0	0	0	0-0	3.29	0	30	J
Fluorotelomer Sulphonic Acid	U	1.1	4.7	0	0	0	0-0	0	0	30	
Fluorotelomer Sulphonic Acid	U	0.85	4.7	0	0	0	0-0	0	0	30	
Perfluorobutanesulfonic Acid (	3.465	0.33	4.7	0	0	0	0-0	1.305	0	30	J
Perfluorobutanoic Acid (PFBA)	50.33	2.4	4.7	0	0	0	0-0	49.16	2.35	30	
Perfluorodecanesulfonic Acid (	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA	U	1.2	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Aci	U	1.4	4.7	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFI	U	1.3	4.7	0	0	0	0-0	0	0	30	
Perfluoroheptanesulfonic Acid	0.9203	0.53	4.7	0	0	0	0-0	0.9083	0	30	J
Perfluoroheptanoic Acid (PFH	2.093	0.41	4.7	0	0	0	0-0	1.098	0	30	J
Perfluorohexadecanoic Acid (F	U	0.36	4.7	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (	1.462	0.35	4.7	0	0	0	0-0	2.039	0	30	J
Perfluorohexanoic Acid (PFHx	5.402	1.1	4.7	0	0	0	0-0	5.798	7.09	30	
Perfluorononanesulfonic Acid	U	0.47	4.7	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA	1.862	0.82	4.7	0	0	0	0-0	1.982	0	30	J
Perfluorooctadecanoic Acid (P	U	0.61	4.7	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (F	U	0.67	4.7	0	0	0	0-0	0.8812	0	30	
Perfluorooctanesulfonic Acid (	13.64	0.84	1.9	0	0	0	0-0	11.71	15.2	30	
Perfluorooctanoic Acid (PFOA	4.869	0.59	1.9	0	0	0	0-0	5.774	17	30	
Perfluoropentanesulfonic Acid	U	0.52	4.7	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPe	19.5	1.2	4.7	0	0	0	0-0	21.94	11.8	30	
Perfluorotetradecanoic Acid (F	U	2.5	4.7	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFT	U	0.72	4.7	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFI	U	0.92	4.7	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfo	U	1.1	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.59	4.7	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfona	U	0.49	4.7	0	0	0	0-0	0	0	30	
N-methylperfluoro-1-octanesul	U	0.75	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.61	4.7	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfor	U	0.45	4.7	0	0	0	0-0	0	0	30	
Hexafluoropropylene oxide din	U	1.1	4.7	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononano	U	0.53	4.7	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	U	0.44	4.7	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	U	0.42	4.7	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*122.6*	0	0	*140.5*	0	*87.3*	*50-150*	144.3	*16.3*	*30*	
Surr: 13C2-FtS 6:2	*135.4*	0	0	*142.9*	0	*94.8*	*50-150*	148.3	*9.05*	*30*	
Surr: 13C2-FtS 8:2	*158.4*	0	0	*144.1*	0	*110*	*50-150*	227.1	*35.6*	*30*	*R*
Surr: 13C2-PFDA	*104*	0	0	*150.4*	0	*69.2*	*50-150*	178.2	*52.5*	*30*	*R*
Surr: 13C2-PFDoA	*114.2*	0	0	*150.4*	0	*76*	*50-150*	198.8	*54*	*30*	*R*
Surr: 13C2-PFHxA	*95.75*	0	0	*150.4*	0	*63.7*	*50-150*	122.1	*24.2*	*30*	
Surr: 13C2-PFHxDA	*125.5*	0	0	*150.4*	0	*83.4*	*50-150*	196.4	*44.1*	*30*	*R*

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

Client: Gannett Fleming, Inc.
Work Order: 21072383
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **181205A** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*104.7*	0	0	*150.4*	0	*69.7*	*50-150*	186.7	*56.3*	*30*	*R*
Surr: 13C2-PFUnA	*127.4*	0	0	*150.4*	0	*84.7*	*50-150*	122.1	*4.26*	*30*	
Surr: 13C3-HFPO-DA	*88.96*	0	0	*150.4*	0	*59.2*	*50-150*	108.6	*19.9*	*30*	
Surr: 13C3-PFBS	*120.5*	0	0	*139.8*	0	*86.2*	*50-150*	132.4	*9.45*	*30*	
Surr: 13C4-PFBA	*122.2*	0	0	*150.4*	0	*81.3*	*50-150*	154.1	*23*	*30*	
Surr: 13C4-PFHpA	*88.73*	0	0	*150.4*	0	*59*	*50-150*	147.1	*49.5*	*30*	*R*
Surr: 13C4-PFOA	*97.77*	0	0	*150.4*	0	*65*	*50-150*	98.57	*0.815*	*30*	
Surr: 13C4-PFOS	*100.6*	0	0	*143.6*	0	*70.1*	*50-150*	148	*38.1*	*30*	*R*
Surr: 13C5-PFNA	*104.8*	0	0	*150.4*	0	*69.7*	*50-150*	130.5	*21.9*	*30*	
Surr: 13C5-PFPeA	*110.1*	0	0	*150.4*	0	*73.2*	*50-150*	132.5	*18.5*	*30*	
Surr: 13C8-FOSA	*112.5*	0	0	*150.4*	0	*74.8*	*50-150*	141.3	*22.7*	*30*	
Surr: 18O2-PFHxS	*95.9*	0	0	*142.1*	0	*67.5*	*50-150*	121.4	*23.5*	*30*	
Surr: d5-N-EtFOSA	*129.4*	0	0	*150.4*	0	*86.1*	*50-150*	155.5	*18.3*	*30*	
Surr: d5-N-EtFOSAA	*163.1*	0	0	*150.4*	0	*108*	*50-150*	147	*10.4*	*30*	
Surr: d9-N-EtFOSE	*107.1*	0	0	*150.4*	0	*71.2*	*50-150*	146.6	*31.2*	*30*	*R*
Surr: d3-N-MeFOSA	*130.3*	0	0	*150.4*	0	*86.7*	*50-150*	156.4	*18.2*	*30*	
Surr: d3-N-MeFOSAA	*123.1*	0	0	*150.4*	0	*81.9*	*50-150*	148.2	*18.5*	*30*	
Surr: d7-N-MeFOSE	*115*	0	0	*150.4*	0	*76.5*	*50-150*	120	*4.22*	*30*	

The following samples were analyzed in this batch: 21072383-01A

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

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 229886

ALS Project Manager: JM

ALS Work Order #: 21072383

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	ALS 2021	Project Name	WRR	A	PFAS 537 M
Work Order		Project Number	55929.007	B	
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Tony Miller	Invoice Attn	Accounts Payable	D	
Address	8040 Excelsior Drive Suite 303	Address	8040 Excelsior Drive Suite 303	E F	
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Blank	7/27	10:20	water	—	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Marcus Mussey

Shipment Method: FedEx

Required Turnaround Time: (Check Box) [X] Std 10 WK Days [ ] 5 WK Days [ ] 2 WK Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date: 7/27	Time: 14:00	Received by: FedEx
Relinquished by: FedEx	Date: 7/28/21	Time: 1400	Received by (Laboratory):
Logged by (Laboratory):	Date: 7/28/21	Time: 1524	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
IR1	4.2°C

QC Package: (Check One Box Below)
[ ] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **28-Jul-21 11:00**

Work Order: **21072383** Received by: **LYS**

Checklist completed by Lydia Sweet (eSignature) 28-Jul-21 (Date) Reviewed by: Jodi Blouw (eSignature) 29-Jul-21 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.2/4.2c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/28/2021 3:29:19 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: