

From: Miller, Anthony W. <awmiller@GFNET.com>
Sent: Monday, August 23, 2021 4:02 PM
To: Sykora, Candace A - DNR; Kloczko, Nathan F - DHS
Cc: Boerner, Audrey; Hager, Jim; Bob Fuller; Steinbach, Matt - DNR; Steinke, Stacy J - DNR; Rozeboom, David B - DNR; Irving, Roy M - DHS; Giese, Elizabeth; Kathryn Schauf; Sullivan, Tim; Sonja Leenhouts; Wright, Clifford C.; Krueger, Raymond R (12786); Leah Ziemba; Jenness, Patricia L (12518)
Subject: BRRTS #02-18-587957 - Letters & Lab Reports for PW-2, PW-10 & PW-13 - WRR (55929.007)
Attachments: PW-02.pdf; PW-10.pdf; PW-13.pdf; All_Attachments(3).pdf
Follow Up Flag: Follow up
Flag Status: Completed

Candace & Nathan –

We received the results of the second set of PFAS samples collected on August 13th from private wells PW-2, PW-10, PW-11, PW-13 and PW-16 located west and southwest of the WRR facility in Eau Claire (BRRTS: #02-18-597957). Only one PFAS compound was detected and in only one of the five wells – PW-2 contained 0.66 ng/L of PFOSA, far below its proposed NR 140 PAL of 2.0 ng/L. Attached are letters and lab reports for PW-2, PW-10, and PW-13 that were sent to the well owners via Fed Ex today. Wells PW-11 and PW-16 were also sampled for VOC analysis, but those results have not been received from the lab yet. We'll copy you when we send the letters to those well owners.

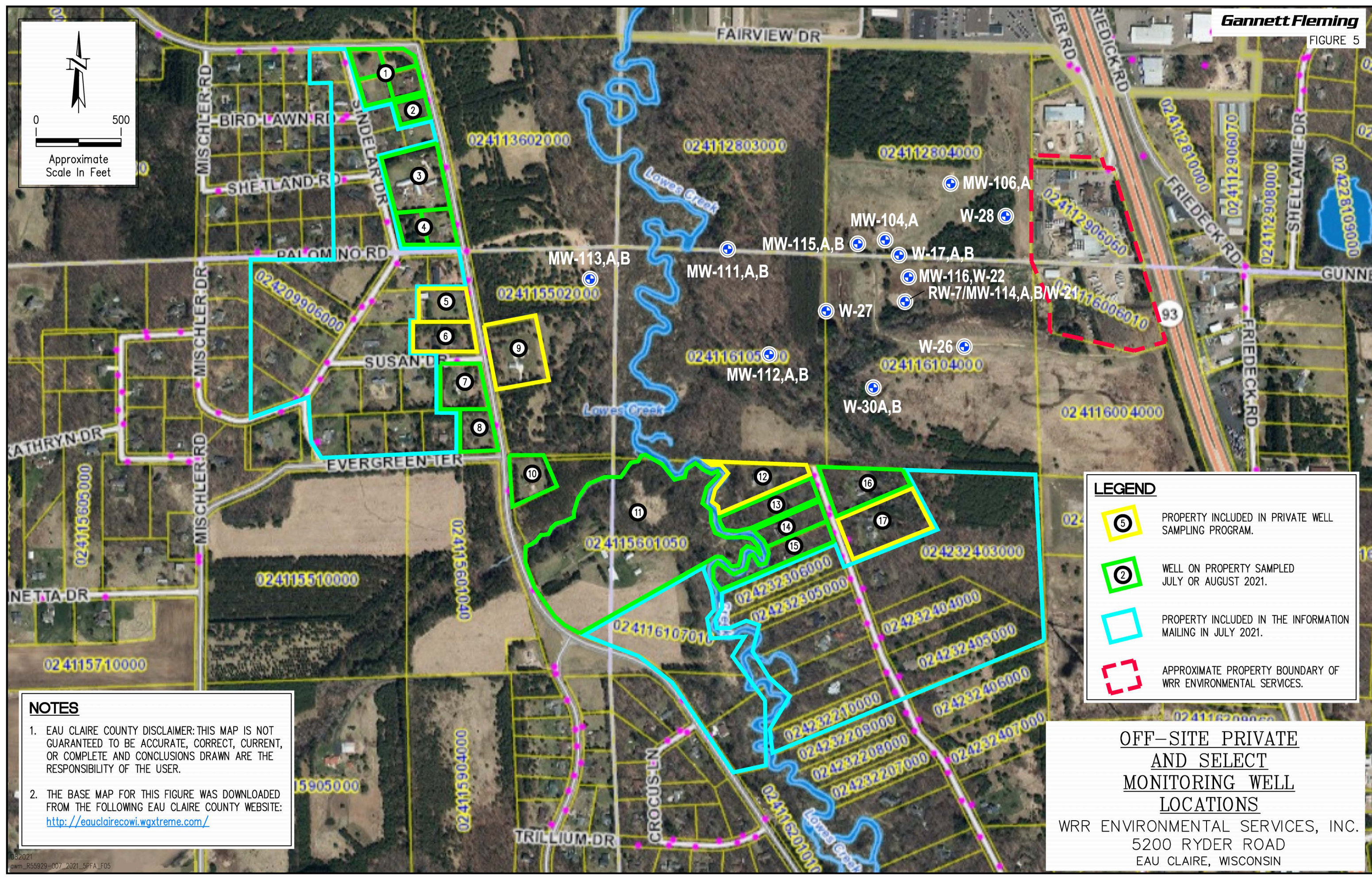
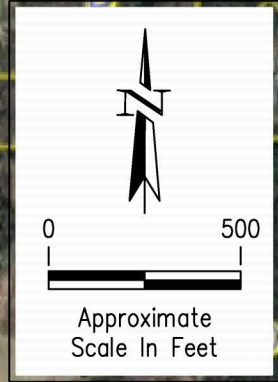
On a related note, on August 12th, a second letter with questionnaire was sent to the owners of PW-5, PW-6, PW-9, and PW-17 who didn't respond to our July 14th request to collect water samples from their wells. Based on the Fed Ex website and tracking system, all letters were received and signed for by the well owners except PW-17. Fed Ex tried unsuccessfully to deliver the letter to the owner of PW-17 on four occasions, but no one was present to sign for the letter. A notification was left on the owner's door that the letter is now at the Fed Ex office waiting to be picked up.

The only other well that we've received approval to collect a sample from but haven't is PW-12. Unfortunately, we were unable to reach that well's owner before the samples were collected on August 13th. We will wait to schedule collection of the sample from PW-12 until we either receive the returned questionnaires from PW-5, PW-6, PW-9, and PW-17 or the returned letter sent to PW-17 if it is undeliverable. Let me know if you have any questions in the meantime.

Thanks,

Anthony W. Miller, P.S.S. | Project Manager | Senior Environmental Scientist
Gannett Fleming, Inc. | 8040 Excelsior Dr., Suite 303, Madison, WI 53717
Cell: 608.400.6815 | awmiller@gfnet.com
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Gannett Fleming is ISO 9001:2015 Certified.
www.gannettfleming.com

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LEGEND

- PROPERTY INCLUDED IN PRIVATE WELL SAMPLING PROGRAM.
- WELL ON PROPERTY SAMPLED JULY OR AUGUST 2021.
- PROPERTY INCLUDED IN THE INFORMATION MAILING IN JULY 2021.
- APPROXIMATE PROPERTY BOUNDARY OF WRR ENVIRONMENTAL SERVICES.

NOTES

- EAU CLAIRE COUNTY DISCLAIMER: THIS MAP IS NOT GUARANTEED TO BE ACCURATE, CORRECT, CURRENT, OR COMPLETE AND CONCLUSIONS DRAWN ARE THE RESPONSIBILITY OF THE USER.
- THE BASE MAP FOR THIS FIGURE WAS DOWNLOADED FROM THE FOLLOWING EAU CLAIRE COUNTY WEBSITE: <http://eauclairecowi.wgxtreme.com/>

OFF-SITE PRIVATE AND SELECT MONITORING WELL LOCATIONS
 WRR ENVIRONMENTAL SERVICES, INC.
 5200 RYDER ROAD
 EAU CLAIRE, WISCONSIN



VIA Federal Express

August 23, 2021

File #55929.007

[REDACTED]
5100 South Lowes Creek Road
Eau Claire, WI 54701.9300

Dear Neighbor of WRR Environmental Services:

On August 13, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5100 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-2. The water sample collected from your home in August was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 33 individual PFAS compounds. One PFAS compound, PFOSA, was detected in the water sample collected from your well but at a concentration of 0.66 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 20 and 2 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 August 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

August 23, 2021

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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,

A handwritten signature in cursive script that reads "James Hager". The signature is written in black ink and is positioned above the printed name and title.

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

Enc.

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



23-Aug-2021

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

Re: **WRR 55929.007**

Work Order: **21081404**

Dear Anthony,

ALS Environmental received 1 sample on 14-Aug-2021 10:00 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,

A handwritten signature in cursive script that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

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

Environmental ALS Environmental logo icon consisting of a stylized flame inside a triangle.

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081404

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21081404-01	PW-2	Drinking Wat		8/13/2021 09:05	8/14/2021 10:00	<input type="checkbox"/>

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: 21081404

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

<u>Units Reported</u>	<u>Description</u>
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081404

Case Narrative

Samples for the above noted Work Order were received on 08/14/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

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

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

Extractable Organics:

Batch 182190, Method E537 Mod, Sample LCS-182190: The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: FtS 10:2

No other deviations or anomalies were noted.

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-2
Collection Date: 8/13/2021 09:05 AM

Work Order: 21081404
Lab ID: 21081404-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED			Method: E537 MOD		Prep: E537 Mod / 8/18/21		Analyst: AK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.83	4.4	ng/L	1	8/18/2021 18:52
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.59	4.4	ng/L	1	8/18/2021 18:52
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.0	4.4	ng/L	1	8/18/2021 18:52
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.80	4.4	ng/L	1	8/18/2021 18:52
Perfluorobutanesulfonic Acid (PFBS)	U		0.31	4.4	ng/L	1	8/18/2021 18:52
Perfluorobutanoic Acid (PFBA)	U		2.3	4.4	ng/L	1	8/18/2021 18:52
Perfluorodecanesulfonic Acid (PFDS)	U		1.2	4.4	ng/L	1	8/18/2021 18:52
Perfluorodecanoic Acid (PFDA)	U		1.1	4.4	ng/L	1	8/18/2021 18:52
Perfluorododecanesulfonic Acid (PFDoS)	U		1.3	4.4	ng/L	1	8/18/2021 18:52
Perfluorododecanoic Acid (PFDoA)	U		1.3	4.4	ng/L	1	8/18/2021 18:52
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.50	4.4	ng/L	1	8/18/2021 18:52
Perfluoroheptanoic Acid (PFHpA)	U		0.39	4.4	ng/L	1	8/18/2021 18:52
Perfluorohexadecanoic Acid (PFHxDA)	U		0.34	4.4	ng/L	1	8/18/2021 18:52
Perfluorohexanesulfonic Acid (PFHxS)	U		0.33	4.4	ng/L	1	8/18/2021 18:52
Perfluorohexanoic Acid (PFHxA)	U		1.1	4.4	ng/L	1	8/18/2021 18:52
Perfluorononanesulfonic Acid (PFNS)	U		0.44	4.4	ng/L	1	8/18/2021 18:52
Perfluorononanoic Acid (PFNA)	U		0.77	4.4	ng/L	1	8/18/2021 18:52
Perfluorooctadecanoic Acid (PFODA)	U		0.58	4.4	ng/L	1	8/18/2021 18:52
Perfluorooctanesulfonamide (PFOSA)	0.66	J	0.63	4.4	ng/L	1	8/18/2021 18:52
Perfluorooctanesulfonic Acid (PFOS)	U		0.79	1.8	ng/L	1	8/18/2021 18:52
Perfluorooctanoic Acid (PFOA)	U		0.56	1.8	ng/L	1	8/18/2021 18:52
Perfluoropentanesulfonic Acid (PFPeS)	U		0.49	4.4	ng/L	1	8/18/2021 18:52
Perfluoropentanoic Acid (PFPeA)	U		1.1	4.4	ng/L	1	8/18/2021 18:52
Perfluorotetradecanoic Acid (PFTeA)	U		2.3	4.4	ng/L	1	8/18/2021 18:52
Perfluorotridecanoic Acid (PFTriA)	U		0.68	4.4	ng/L	1	8/18/2021 18:52
Perfluoroundecanoic Acid (PFUnA)	U		0.86	4.4	ng/L	1	8/18/2021 18:52
N-ethylperfluoro-1-octanesulfonamide	U		1.0	4.4	ng/L	1	8/18/2021 18:52
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.56	4.4	ng/L	1	8/18/2021 18:52
N-Ethylperfluorooctanesulfonamidoethanol	U		0.46	4.4	ng/L	1	8/18/2021 18:52
N-methylperfluoro-1-octanesulfonamide	U		0.70	4.4	ng/L	1	8/18/2021 18:52

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

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-2
Collection Date: 8/13/2021 09:05 AM

Work Order: 21081404
Lab ID: 21081404-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.57	4.4	ng/L	1	8/18/2021 18:52
N-Methylperfluorooctanesulfonamidoethanol	U		0.43	4.4	ng/L	1	8/18/2021 18:52
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.0	4.4	ng/L	1	8/18/2021 18:52
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.50	4.4	ng/L	1	8/18/2021 18:52
11Cl-Pf3OUdS	U		0.41	4.4	ng/L	1	8/18/2021 18:52
9Cl-PF3ONS	U		0.40	4.4	ng/L	1	8/18/2021 18:52
Surr: 13C2-FtS 4:2	75.2			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-FtS 6:2	71.1			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-FtS 8:2	85.1			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-PFDA	73.3			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-PFDoA	63.3			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-PFHxA	65.0			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-PFHxDA	67.8			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-PFTeA	62.1			50-150	%REC	1	8/18/2021 18:52
Surr: 13C2-PFUnA	69.3			50-150	%REC	1	8/18/2021 18:52
Surr: 13C3-HFPO-DA	58.0			50-150	%REC	1	8/18/2021 18:52
Surr: 13C3-PFBS	61.1			50-150	%REC	1	8/18/2021 18:52
Surr: 13C4-PFBA	60.4			50-150	%REC	1	8/18/2021 18:52
Surr: 13C4-PFHpA	62.1			50-150	%REC	1	8/18/2021 18:52
Surr: 13C4-PFOA	64.0			50-150	%REC	1	8/18/2021 18:52
Surr: 13C4-PFOS	65.4			50-150	%REC	1	8/18/2021 18:52
Surr: 13C5-PFNA	69.7			50-150	%REC	1	8/18/2021 18:52
Surr: 13C5-PFPeA	62.6			50-150	%REC	1	8/18/2021 18:52
Surr: 13C8-FOSA	63.9			50-150	%REC	1	8/18/2021 18:52
Surr: 18O2-PFHxS	70.6			50-150	%REC	1	8/18/2021 18:52
Surr: d5-N-EtFOSA	55.2			50-150	%REC	1	8/18/2021 18:52
Surr: d5-N-EtFOSAA	77.4			50-150	%REC	1	8/18/2021 18:52
Surr: d9-N-EtFOSE	64.2			50-150	%REC	1	8/18/2021 18:52
Surr: d3-N-MeFOSA	65.3			50-150	%REC	1	8/18/2021 18:52
Surr: d3-N-MeFOSAA	68.6			50-150	%REC	1	8/18/2021 18:52
Surr: d7-N-MeFOSE	58.4			50-150	%REC	1	8/18/2021 18:52

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

Client: Gannett Fleming, Inc.
 Work Order: 21081404
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **182190** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK		Sample ID: MBLK-182190-182190			Units: ng/L			Analysis Date: 8/18/2021 04:57 PM			
Client ID:		Run ID: LCMS1_210818B			SeqNo: 7678474			Prep Date: 8/18/2021		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 Acid	U	1.4	5.0								
Perfluorododecanoic Acid (PFDA)	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFHx)	U	0.44	5.0								
Perfluorohexadecanoic Acid (PFHx)	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx)	U	1.2	5.0								
Perfluoronanesulfonic Acid	U	0.5	5.0								
Perfluoronanoic Acid (PFNA)	U	0.87	5.0								
Perfluorooctadecanoic Acid (PFDA)	U	0.65	5.0								
Perfluorooctanesulfonamide (PFOS)	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 (PFPeA)	U	1.3	5.0								
Perfluorotetradecanoic Acid (PFDA)	U	2.6	5.0								
Perfluorotridecanoic Acid (PFTA)	U	0.77	5.0								
Perfluoroundecanoic Acid (PFDA)	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfonate	U	1.2	5.0								
N-Ethylperfluorooctanesulfonate	U	0.63	5.0								
N-Ethylperfluorooctanesulfonate	U	0.52	5.0								
N-methylperfluoro-1-octanesulfonate	U	0.79	5.0								
N-Methylperfluorooctanesulfonate	U	0.64	5.0								
N-Methylperfluorooctanesulfonate	U	0.48	5.0								
Hexafluoropropylene oxide dimer	U	1.2	5.0								
4,8-Dioxa-3H-perfluorononane	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	93.04	0	0	149.4	0	62.3	50-150	0			
Surr: 13C2-FtS 6:2	114	0	0	152	0	75	50-150	0			
Surr: 13C2-FtS 8:2	114.4	0	0	153.3	0	74.6	50-150	0			
Surr: 13C2-PFDA	124.7	0	0	160	0	77.9	50-150	0			
Surr: 13C2-PFDoA	87.14	0	0	160	0	54.5	50-150	0			

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

Client: Gannett Fleming, Inc.

Work Order: 21081404

Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
<i>Surr: 13C2-PFHxA</i>	<i>106.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFHxDA</i>	<i>106.5</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFTeA</i>	<i>94.43</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>59</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFUnA</i>	<i>139</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>86.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>99.67</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>62.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>86.02</i>	<i>0</i>	<i>0</i>	<i>148.8</i>	<i>0</i>	<i>57.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>102.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>123.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>77.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>114.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>109.8</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>71.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>108.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>67.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>97.39</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>60.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>102.2</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>77.65</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>51.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>85.18</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>53.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>116.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>72.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>90.56</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>56.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>83.68</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>52.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>106.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>98.57</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>61.6</i>	<i>50-150</i>	<i>0</i>	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081404
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

LCS		Sample ID: LCS-182190-182190				Units: ng/L			Analysis Date: 8/18/2021 05:07 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678475		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	39.54	0.94	5.0	29.9	0	132	63-143	0			
Fluorotelomer Sulphonic Acid	36.45	0.66	5.0	30.3	0	120	64-140	0			
Fluorotelomer Sulphonic Acid	36.22	1.1	5.0	30.7	0	118	67-138	0			
Fluorotelomer Sulphonic Acid	50.64	0.9	5.0	30.8	0	164	40-160	0			S
Perfluorobutanoic Acid (PFBA)	33.55	2.6	5.0	32	0	105	73-129	0			
Perfluorodecanesulfonic Acid	32.15	1.4	5.0	30.8	0	104	53-142	0			
Perfluorodecanoic Acid (PFDA)	32.1	1.2	5.0	32	0	100	71-129	0			
Perfluorododecanesulfonic Acid	26.32	1.4	5.0	31	0	84.9	69-134	0			
Perfluorododecanoic Acid (PFDA)	29.46	1.4	5.0	32	0	92.1	72-134	0			
Perfluoroheptanesulfonic Acid	38.34	0.57	5.0	30.5	0	126	69-134	0			
Perfluoroheptanoic Acid (PFHpA)	38.44	0.44	5.0	32	0	120	72-130	0			
Perfluorohexadecanoic Acid (PFHxDA)	39.34	0.38	5.0	32	0	123	70-130	0			
Perfluorohexanesulfonic Acid	32.38	0.37	5.0	29.1	0	111	68-131	0			
Perfluorohexanoic Acid (PFHxA)	33.47	1.2	5.0	32	0	105	72-129	0			
Perfluoronanesulfonic Acid	35.34	0.5	5.0	30.7	0	115	69-127	0			
Perfluorononanoic Acid (PFNA)	32.2	0.87	5.0	32	0	101	69-130	0			
Perfluorooctanesulfonamide (PFOSA)	39.06	0.71	5.0	32	0	122	67-137	0			
Perfluorooctanesulfonic Acid	31.08	0.89	2.0	29.7	0	105	65-140	0			
Perfluorooctanoic Acid (PFOA)	26.18	0.63	2.0	32	0	81.8	71-133	0			
Perfluoropentanesulfonic Acid	32.31	0.56	5.0	30	0	108	71-127	0			
Perfluoropentanoic Acid (PFPA)	39.4	1.3	5.0	32	0	123	72-129	0			
Perfluorotetradecanoic Acid (PFTrDA)	36.89	2.6	5.0	32	0	115	71-132	0			
Perfluorotridecanoic Acid (PFTeA)	44.96	0.77	5.0	32	0	140	65-144	0			
Perfluoroundecanoic Acid (PFUnA)	32.31	0.97	5.0	32	0	101	69-133	0			
N-Ethylperfluorooctanesulfonamide	30.37	0.63	5.0	32	0	94.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	35.06	0.52	5.0	32	0	110	70-130	0			
N-Methylperfluorooctanesulfonamide	37.4	0.64	5.0	32	0	117	65-136	0			
N-Methylperfluorooctanesulfonamide	35.33	0.48	5.0	32	0	110	68-141	0			
Hexafluoropropylene oxide dimer	39.41	1.2	5.0	32	0	123	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	29.65	0.56	5.0	30.1	0	98.5	70-130	0			
11Cl-Pf3OUdS	28.96	0.47	5.0	30.1	0	96.2	70-130	0			
9Cl-PF3ONS	30.51	0.45	5.0	29.8	0	102	70-130	0			
Surr: 13C2-FtS 4:2	96.75	0	0	149.4	0	64.7	50-150	0			
Surr: 13C2-FtS 6:2	116.6	0	0	152	0	76.7	50-150	0			
Surr: 13C2-FtS 8:2	113.9	0	0	153.3	0	74.3	50-150	0			
Surr: 13C2-PFDA	135.5	0	0	160	0	84.7	50-150	0			
Surr: 13C2-PFDoA	111.7	0	0	160	0	69.8	50-150	0			
Surr: 13C2-PFHxA	119.1	0	0	160	0	74.4	50-150	0			
Surr: 13C2-PFHxDA	108.3	0	0	160	0	67.7	50-150	0			
Surr: 13C2-PFTeA	104.6	0	0	160	0	65.4	50-150	0			
Surr: 13C2-PFUnA	155.9	0	0	160	0	97.5	50-150	0			
Surr: 13C3-HFPO-DA	98.46	0	0	160	0	61.5	50-150	0			
Surr: 13C3-PFBS	88.94	0	0	148.8	0	59.8	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081404
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C4-PFBA	120.9	0	0	160	0	75.6	50-150	0	
Surr: 13C4-PFHpA	119.1	0	0	160	0	74.4	50-150	0	
Surr: 13C4-PFOA	145.2	0	0	160	0	90.8	50-150	0	
Surr: 13C4-PFOS	120.9	0	0	152.8	0	79.1	50-150	0	
Surr: 13C5-PFNA	123.6	0	0	160	0	77.2	50-150	0	
Surr: 13C5-PFPeA	98.57	0	0	160	0	61.6	50-150	0	
Surr: 13C8-FOSA	105.4	0	0	160	0	65.9	50-150	0	
Surr: 18O2-PFHxS	102.8	0	0	151.2	0	68	50-150	0	
Surr: d5-N-EtFOSA	84.23	0	0	160	0	52.6	50-150	0	
Surr: d5-N-EtFOSAA	120.9	0	0	160	0	75.6	50-150	0	
Surr: d9-N-EtFOSE	100.6	0	0	160	0	62.9	50-150	0	
Surr: d3-N-MeFOSA	101.5	0	0	160	0	63.5	50-150	0	
Surr: d3-N-MeFOSAA	105	0	0	160	0	65.7	50-150	0	
Surr: d7-N-MeFOSE	110.1	0	0	160	0	68.8	50-150	0	

LCS		Sample ID: LCS-182190-182190			Units: ng/L		Analysis Date: 8/19/2021 11:42 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678856		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanesulfonic Acid (	35.59	0.35	5.0	28.3	0	126	72-130	0			
Perfluorooctadecanoic Acid (P	39.69	0.65	5.0	32	0	124	70-130	0			
N-Ethylperfluorooctanesulfona	37.92	0.52	5.0	32	0	119	70-130	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081404
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MS		Sample ID: 21081217-06AMS				Units: ng/L		Analysis Date: 8/18/2021 05:18 PM			
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678476		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	30.34	0.92	4.9	29.43	0	103	63-143	0			
Fluorotelomer Sulphonic Acid	32.83	0.65	4.9	29.82	2.223	103	64-140	0			
Fluorotelomer Sulphonic Acid	29.75	1.1	4.9	30.22	0.3387	97.3	67-138	0			
Fluorotelomer Sulphonic Acid	24.29	0.89	4.9	30.32	0	80.1	40-160	0			
Perfluorobutanesulfonic Acid	59.37	0.35	4.9	27.85	31.12	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	36.64	2.6	4.9	31.5	22.05	46.3	73-129	0			S
Perfluorodecanesulfonic Acid	29.55	1.3	4.9	30.32	0	97.5	53-142	0			
Perfluorodecanoic Acid (PFDA)	27.21	1.2	4.9	31.5	0.5387	84.7	71-129	0			
Perfluorododecanesulfonic Acid	22.32	1.4	4.9	30.51	0	73.1	69-134	0			
Perfluorododecanoic Acid (PFDDA)	26	1.4	4.9	31.5	0	82.5	72-134	0			
Perfluoroheptanesulfonic Acid	41.17	0.56	4.9	30.02	10.21	103	69-134	0			
Perfluoroheptanoic Acid (PFH7A)	42.35	0.43	4.9	31.5	12.74	94	72-130	0			
Perfluorohexadecanoic Acid (PFH16A)	30.53	0.38	4.9	31.5	0	96.9	70-130	0			
Perfluorohexanesulfonic Acid	64.25	0.36	4.9	28.64	42.25	76.8	68-131	0			
Perfluorohexanoic Acid (PFH6A)	36.98	1.2	4.9	31.5	11.81	79.9	72-129	0			
Perfluoronanesulfonic Acid	29.48	0.49	4.9	30.22	0	97.6	69-127	0			
Perfluorononanoic Acid (PFNA)	26.92	0.86	4.9	31.5	1.152	81.8	69-130	0			
Perfluorooctadecanoic Acid (PFDA)	31.3	0.64	4.9	31.5	0	99.4	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	32	0.7	4.9	31.5	0	102	67-137	0			
Perfluorooctanoic Acid (PFOA)	41.8	0.62	2.0	31.5	26.64	48.1	71-133	0			S
Perfluoropentanesulfonic Acid	44.37	0.55	4.9	29.53	16.47	94.5	71-127	0			
Perfluoropentanoic Acid (PFPA)	36.74	1.3	4.9	31.5	11.03	81.7	72-129	0			
Perfluorotetradecanoic Acid (PF14A)	32.09	2.6	4.9	31.5	0	102	71-132	0			
Perfluorotridecanoic Acid (PF13A)	38.55	0.76	4.9	31.5	0	122	65-144	0			
Perfluoroundecanoic Acid (PF11A)	28.12	0.96	4.9	31.5	0	89.3	69-133	0			
N-ethylperfluoro-1-octanesulfonate	34.25	1.1	4.9	31.5	0	109	70-130	0			
N-Ethylperfluorooctanesulfonate	28.12	0.62	4.9	31.5	1.061	85.9	61-135	0			
N-Ethylperfluorooctanesulfonate	29.13	0.51	4.9	31.5	0	92.5	70-130	0			
N-methylperfluoro-1-octanesulfonate	35.33	0.78	4.9	31.5	0	112	70-130	0			
N-Methylperfluorooctanesulfonate	30.78	0.63	4.9	31.5	0	97.7	65-136	0			
N-Methylperfluorooctanesulfonate	27.47	0.48	4.9	31.5	0	87.2	68-141	0			
Hexafluoropropylene oxide dimer	32.19	1.2	4.9	31.5	0	102	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	22.57	0.55	4.9	29.63	0	76.2	70-130	0			
11Cl-Pf3OUdS	24.25	0.46	4.9	29.63	0	81.8	70-130	0			
9Cl-PF3ONS	26.65	0.44	4.9	29.33	0	90.9	70-130	0			
Surr: 13C2-FtS 4:2	430.2	0	0	147.1	0	292	50-150	0			S
Surr: 13C2-FtS 6:2	292.3	0	0	149.6	0	195	50-150	0			S
Surr: 13C2-FtS 8:2	237.9	0	0	150.9	0	158	50-150	0			S
Surr: 13C2-PFDA	144.2	0	0	157.5	0	91.5	50-150	0			
Surr: 13C2-PFDoA	117.5	0	0	157.5	0	74.6	50-150	0			
Surr: 13C2-PFHxA	99.18	0	0	157.5	0	63	50-150	0			
Surr: 13C2-PFHxDA	110.6	0	0	157.5	0	70.2	50-150	0			
Surr: 13C2-PFTEA	98.54	0	0	157.5	0	62.6	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081404
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C2-PFUnA	152.3	0	0	157.5	0	96.7	50-150	0	
Surr: 13C3-HFPO-DA	78.4	0	0	157.5	0	49.8	50-150	0	S
Surr: 13C3-PFBS	93.17	0	0	146.5	0	63.6	50-150	0	
Surr: 13C4-PFBA	93.4	0	0	157.5	0	59.3	50-150	0	
Surr: 13C4-PFHpA	96.87	0	0	157.5	0	61.5	50-150	0	
Surr: 13C4-PFOA	120.3	0	0	157.5	0	76.4	50-150	0	
Surr: 13C4-PFOS	111.8	0	0	150.4	0	74.3	50-150	0	
Surr: 13C5-PFNA	133.7	0	0	157.5	0	84.9	50-150	0	
Surr: 13C5-PFPeA	81.17	0	0	157.5	0	51.5	50-150	0	
Surr: 13C8-FOSA	112.4	0	0	157.5	0	71.3	50-150	0	
Surr: 18O2-PFHxS	109.4	0	0	148.8	0	73.5	50-150	0	
Surr: d5-N-EtFOSA	92.4	0	0	157.5	0	58.7	50-150	0	
Surr: d5-N-EtFOSAA	145.3	0	0	157.5	0	92.3	50-150	0	
Surr: d9-N-EtFOSE	102.9	0	0	157.5	0	65.3	50-150	0	
Surr: d3-N-MeFOSA	105.3	0	0	157.5	0	66.9	50-150	0	
Surr: d3-N-MeFOSAA	134.5	0	0	157.5	0	85.4	50-150	0	
Surr: d7-N-MeFOSE	113.8	0	0	157.5	0	72.3	50-150	0	

MS		Sample ID: 21081217-06AMS			Units: ng/L		Analysis Date: 8/19/2021 11:53 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678857		Prep Date: 8/18/2021		DF: 10		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (I	310.2	8.8	20	29.23	443.3	-455	65-140	0			SO

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

Client: Gannett Fleming, Inc.
 Work Order: 21081404
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MSD		Sample ID: 21081217-06AMSD				Units: ng/L			Analysis Date: 8/18/2021 05:28 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678477		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.66	0.95	5.1	30.39	0	114	63-143	30.34	13.3	30	
Fluorotelomer Sulphonic Acid	38.17	0.67	5.1	30.79	2.223	117	64-140	32.83	15	30	
Fluorotelomer Sulphonic Acid	35.23	1.1	5.1	31.2	0.3387	112	67-138	29.75	16.9	30	
Fluorotelomer Sulphonic Acid	26.61	0.92	5.1	31.3	0	85	40-160	24.29	9.13	30	
Perfluorobutanesulfonic Acid	65.04	0.36	5.1	28.76	31.12	118	72-130	59.37	9.12	30	
Perfluorobutanoic Acid (PFBA)	38.63	2.6	5.1	32.52	22.05	51	73-129	36.64	5.29	30	S
Perfluorodecanesulfonic Acid	31.45	1.4	5.1	31.3	0	100	53-142	29.55	6.24	30	
Perfluorodecanoic Acid (PFDA)	33.05	1.3	5.1	32.52	0.5387	100	71-129	27.21	19.4	30	
Perfluorododecanesulfonic Acid	28.64	1.5	5.1	31.5	0	90.9	69-134	22.32	24.8	30	
Perfluorododecanoic Acid (PFDA)	29.7	1.5	5.1	32.52	0	91.3	72-134	26	13.3	30	
Perfluoroheptanesulfonic Acid	47.71	0.58	5.1	31	10.21	121	69-134	41.17	14.7	30	
Perfluoroheptanoic Acid (PFHx)	44.73	0.45	5.1	32.52	12.74	98.4	72-130	42.35	5.49	30	
Perfluorohexadecanoic Acid (PFHx)	35.76	0.39	5.1	32.52	0	110	70-130	30.53	15.8	30	
Perfluorohexanesulfonic Acid	70.46	0.37	5.1	29.57	42.25	95.4	68-131	64.25	9.22	30	
Perfluorohexanoic Acid (PFHx)	43.16	1.2	5.1	32.52	11.81	96.4	72-129	36.98	15.4	30	
Perfluoronanesulfonic Acid	36.06	0.5	5.1	31.2	0	116	69-127	29.48	20.1	30	
Perfluorononanoic Acid (PFNA)	32.02	0.88	5.1	32.52	1.152	94.9	69-130	26.92	17.3	30	
Perfluorooctadecanoic Acid (PFDA)	33.24	0.66	5.1	32.52	0	102	70-130	31.3	5.99	30	
Perfluorooctanesulfonamide (PFOS)	36.37	0.72	5.1	32.52	0	112	67-137	32	12.8	30	
Perfluorooctanoic Acid (PFOA)	45.07	0.64	2.0	32.52	26.64	56.7	71-133	41.8	7.53	30	S
Perfluoropentanesulfonic Acid	51.02	0.57	5.1	30.49	16.47	113	71-127	44.37	14	30	
Perfluoropentanoic Acid (PFPeA)	41.83	1.3	5.1	32.52	11.03	94.7	72-129	36.74	12.9	30	
Perfluorotetradecanoic Acid (PFDA)	38.19	2.7	5.1	32.52	0	117	71-132	32.09	17.3	30	
Perfluorotridecanoic Acid (PFTA)	40.65	0.78	5.1	32.52	0	125	65-144	38.55	5.3	30	
Perfluoroundecanoic Acid (PFDA)	34.16	0.99	5.1	32.52	0	105	69-133	28.12	19.4	30	
N-ethylperfluoro-1-octanesulfonate	38.89	1.2	5.1	32.52	0	120	70-130	34.25	12.7	30	
N-Ethylperfluorooctanesulfonate	32	0.64	5.1	32.52	1.061	95.1	61-135	28.12	12.9	30	
N-Ethylperfluorooctanesulfonate	34.66	0.53	5.1	32.52	0	107	70-130	29.13	17.4	30	
N-methylperfluoro-1-octanesulfonate	42.1	0.81	5.1	32.52	0	129	70-130	35.33	17.5	30	
N-Methylperfluorooctanesulfonate	38.1	0.65	5.1	32.52	0	117	65-136	30.78	21.3	30	
N-Methylperfluorooctanesulfonate	30.83	0.49	5.1	32.52	0	94.8	68-141	27.47	11.5	30	
Hexafluoropropylene oxide dimer	37.07	1.2	5.1	32.52	0	114	70-130	32.19	14.1	30	
4,8-Dioxa-3H-perfluorononanoic Acid	25.46	0.57	5.1	30.59	0	83.2	70-130	22.57	12.1	30	
11Cl-Pf3OUdS	30.27	0.47	5.1	30.59	0	98.9	70-130	24.25	22.1	30	
9Cl-PF3ONS	31.68	0.46	5.1	30.28	0	105	70-130	26.65	17.2	30	
Surr: 13C2-FtS 4:2	409	0	0	151.9	0	269	50-150	430.2	5.04	30	S
Surr: 13C2-FtS 6:2	289.7	0	0	154.5	0	188	50-150	292.3	0.895	30	S
Surr: 13C2-FtS 8:2	230.5	0	0	155.8	0	148	50-150	237.9	3.16	30	
Surr: 13C2-PFDA	139	0	0	162.6	0	85.5	50-150	144.2	3.63	30	
Surr: 13C2-PFDoA	121.9	0	0	162.6	0	75	50-150	117.5	3.63	30	
Surr: 13C2-PFHxA	94.58	0	0	162.6	0	58.2	50-150	99.18	4.75	30	
Surr: 13C2-PFHxDA	110.7	0	0	162.6	0	68.1	50-150	110.6	0.0868	30	
Surr: 13C2-PFTeA	98.41	0	0	162.6	0	60.5	50-150	98.54	0.134	30	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081404
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod									
Surr: 13C2-PFUnA	150.5	0	0	162.6	0	92.5	50-150	152.3	1.19	30	
Surr: 13C3-HFPO-DA	73.66	0	0	162.6	0	45.3	50-150	78.4	6.24	30	S
Surr: 13C3-PFBS	90.75	0	0	151.2	0	60	50-150	93.17	2.64	30	
Surr: 13C4-PFBA	92.7	0	0	162.6	0	57	50-150	93.4	0.748	30	
Surr: 13C4-PFHpA	108	0	0	162.6	0	66.4	50-150	96.87	10.8	30	
Surr: 13C4-PFOA	120.9	0	0	162.6	0	74.4	50-150	120.3	0.533	30	
Surr: 13C4-PFOS	105	0	0	155.3	0	67.6	50-150	111.8	6.2	30	
Surr: 13C5-PFNA	129.3	0	0	162.6	0	79.5	50-150	133.7	3.35	30	
Surr: 13C5-PFPeA	79.27	0	0	162.6	0	48.8	50-150	81.17	2.37	30	S
Surr: 13C8-FOSA	110.9	0	0	162.6	0	68.2	50-150	112.4	1.32	30	
Surr: 18O2-PFHxS	103.2	0	0	153.7	0	67.2	50-150	109.4	5.8	30	
Surr: d5-N-EtFOSA	94.37	0	0	162.6	0	58	50-150	92.4	2.11	30	
Surr: d5-N-EtFOSAA	145.9	0	0	162.6	0	89.7	50-150	145.3	0.38	30	
Surr: d9-N-EtFOSE	100.5	0	0	162.6	0	61.8	50-150	102.9	2.28	30	
Surr: d3-N-MeFOSA	101.9	0	0	162.6	0	62.7	50-150	105.3	3.25	30	
Surr: d3-N-MeFOSAA	134.6	0	0	162.6	0	82.8	50-150	134.5	0.113	30	
Surr: d7-N-MeFOSE	109.8	0	0	162.6	0	67.5	50-150	113.8	3.57	30	

MSD		Sample ID: 21081217-06AMSD				Units: ng/L		Analysis Date: 8/19/2021 12:03 PM			
Client ID:		Run ID: LCMS1_210819A		SeqNo: 7678858		Prep Date: 8/18/2021		DF: 10			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (l	504.4	9.1	20	30.18	443.3	202	65-140	310.2	47.7	30	SRO

The following samples were analyzed in this batch: 21081404-01A



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

Chain of Custody Form

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

Page 1 of 1

COC ID: 229891

ALS Project Manager: JM

ALS Work Order #: 21081404

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order	<u>ALS 2021</u>	Project Name	<u>WRR</u>	A	<u>PFAS 537M detected</u>										
Work Order		Project Number	<u>55929.007-FW1</u>	B											
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C											
Send Report To	<u>Tony Miller</u>	Invoice Attn	Accounts Payable	D											
Address	8040 Excelsior Drive	Address	8040 Excelsior Drive	E											
	Suite 303		Suite 303	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	<u>cmillere@gfnet.com</u>	e-Mail Address		J											

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	<u>FW-2</u>	<u>8-13-21</u>	<u>0905</u>	<u>DW</u>	<u>-</u>	<u>2</u>	<u>X</u>										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign <u>Cliff Wright CO</u>		Shipment Method <u>FedEx</u>		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: <u>CO</u>	Date: <u>8-13-21</u>	Time: <u>13:30</u>	Received by: <u>FedEx</u>		Notes:						
Relinquished by: <u>FedEx</u>	Date: <u>8/14/21</u>	Time: <u>1000</u>	Received by (Laboratory): <u>[Signature]</u>		Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)				
Logged by (Laboratory): <u>[Signature]</u>	Date: <u>8/16/21</u>	Time: <u>1457</u>	Checked by (Laboratory):		<u>IR3</u>	<u>4.3°C</u>	<input type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist			
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035							<input type="checkbox"/> Level III Std QC/Raw Data	<input type="checkbox"/> TRRP Level IV			
							<input type="checkbox"/> Level IV SW846/CLP				
							<input type="checkbox"/> 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.

Sample Receipt Checklist

Client Name: **GANNETFLEMING - WI**

Date/Time Received: **14-Aug-21 10:00**

Work Order: **21081404**

Received by: **LYS**

Checklist completed by *Lydia Sweet* 16-Aug-21
eSignature Date

Reviewed by: *Jadi Blawie* 16-Aug-21
eSignature Date

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<input type="text" value="4.3/5.3c"/>		<input type="text" value="IR3"/>
Cooler(s)/Kit(s):	<input type="text"/>		
Date/Time sample(s) sent to storage:	<input type="text" value="8/16/2021 3:00:52 PM"/>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<input type="text"/>		

Login Notes:

Client Contacted: _____ Date Contacted: _____ Person Contacted: _____

Contacted By: _____ Regarding: _____

Comments:

CorrectiveAction:



23-Aug-2021

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

Re: **WRR 55929.007**

Work Order: **21081410**

Dear Anthony,

ALS Environmental received 1 sample on 14-Aug-2021 10:00 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,

A handwritten signature in cursive script that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081410

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21081410-01	Field Blank	Drinking Wat		8/13/2021 10:15	8/14/2021 10:00	<input type="checkbox"/>

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: 21081410

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

<u>Units Reported</u>	<u>Description</u>
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081410

Case Narrative

Samples for the above noted Work Order were received on 08/14/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

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

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

Extractable Organics:

Batch 182190, Method E537 Mod, Sample LCS-182190: The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: FtS 10:2

No other deviations or anomalies were noted.

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 8/13/2021 10:15 AM

Work Order: 21081410
Lab ID: 21081410-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED			Method: E537 MOD		Prep: E537 Mod / 8/18/21		Analyst: AK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.87	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.62	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.84	4.6	ng/L	1	8/18/2021 19:44
Perfluorobutanesulfonic Acid (PFBS)	U		0.33	4.6	ng/L	1	8/18/2021 19:44
Perfluorobutanoic Acid (PFBA)	U		2.4	4.6	ng/L	1	8/18/2021 19:44
Perfluorodecanesulfonic Acid (PFDS)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluorodecanoic Acid (PFDA)	U		1.2	4.6	ng/L	1	8/18/2021 19:44
Perfluorododecanesulfonic Acid (PFDoS)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluorododecanoic Acid (PFDoA)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.53	4.6	ng/L	1	8/18/2021 19:44
Perfluoroheptanoic Acid (PFHpA)	U		0.41	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexadecanoic Acid (PFHxDA)	U		0.35	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexanesulfonic Acid (PFHxS)	U		0.34	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexanoic Acid (PFHxA)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
Perfluorononanesulfonic Acid (PFNS)	U		0.46	4.6	ng/L	1	8/18/2021 19:44
Perfluorononanoic Acid (PFNA)	U		0.81	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctadecanoic Acid (PFODA)	U		0.60	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctanesulfonamide (PFOSA)	U		0.66	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctanesulfonic Acid (PFOS)	U		0.83	1.9	ng/L	1	8/18/2021 19:44
Perfluorooctanoic Acid (PFOA)	U		0.59	1.9	ng/L	1	8/18/2021 19:44
Perfluoropentanesulfonic Acid (PFPeS)	U		0.52	4.6	ng/L	1	8/18/2021 19:44
Perfluoropentanoic Acid (PFPeA)	U		1.2	4.6	ng/L	1	8/18/2021 19:44
Perfluorotetradecanoic Acid (PFTeA)	U		2.5	4.6	ng/L	1	8/18/2021 19:44
Perfluorotridecanoic Acid (PFTriA)	U		0.72	4.6	ng/L	1	8/18/2021 19:44
Perfluoroundecanoic Acid (PFUnA)	U		0.91	4.6	ng/L	1	8/18/2021 19:44
N-ethylperfluoro-1-octanesulfonamide	U		1.1	4.6	ng/L	1	8/18/2021 19:44
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.58	4.6	ng/L	1	8/18/2021 19:44
N-Ethylperfluorooctanesulfonamidoethanol	U		0.48	4.6	ng/L	1	8/18/2021 19:44
N-methylperfluoro-1-octanesulfonamide	U		0.74	4.6	ng/L	1	8/18/2021 19:44

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

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 8/13/2021 10:15 AM

Work Order: 21081410
Lab ID: 21081410-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.60	4.6	ng/L	1	8/18/2021 19:44
N-Methylperfluorooctanesulfonamidoethanol	U		0.45	4.6	ng/L	1	8/18/2021 19:44
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.52	4.6	ng/L	1	8/18/2021 19:44
11Cl-Pf3OUdS	U		0.43	4.6	ng/L	1	8/18/2021 19:44
9Cl-PF3ONS	U		0.42	4.6	ng/L	1	8/18/2021 19:44
Surr: 13C2-FtS 4:2	79.2			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-FtS 6:2	96.4			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-FtS 8:2	104			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFDA	92.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFDoA	60.9			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFHxA	74.2			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFHxDA	74.6			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFTeA	76.5			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFUnA	103			50-150	%REC	1	8/18/2021 19:44
Surr: 13C3-HFPO-DA	75.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C3-PFBS	72.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFBA	72.3			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFHpA	105			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFOA	85.9			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFOS	81.1			50-150	%REC	1	8/18/2021 19:44
Surr: 13C5-PFNA	82.3			50-150	%REC	1	8/18/2021 19:44
Surr: 13C5-PFPeA	75.6			50-150	%REC	1	8/18/2021 19:44
Surr: 13C8-FOSA	87.8			50-150	%REC	1	8/18/2021 19:44
Surr: 18O2-PFHxS	61.9			50-150	%REC	1	8/18/2021 19:44
Surr: d5-N-EtFOSA	67.2			50-150	%REC	1	8/18/2021 19:44
Surr: d5-N-EtFOSAA	98.5			50-150	%REC	1	8/18/2021 19:44
Surr: d9-N-EtFOSE	73.4			50-150	%REC	1	8/18/2021 19:44
Surr: d3-N-MeFOSA	94.6			50-150	%REC	1	8/18/2021 19:44
Surr: d3-N-MeFOSAA	89.4			50-150	%REC	1	8/18/2021 19:44
Surr: d7-N-MeFOSE	65.6			50-150	%REC	1	8/18/2021 19:44

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **182190** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK		Sample ID: MBLK-182190-182190			Units: ng/L		Analysis Date: 8/18/2021 04:57 PM				
Client ID:		Run ID: LCMS1_210818B			SeqNo: 7678474		Prep Date: 8/18/2021		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 Acid	U	1.4	5.0								
Perfluorododecanoic Acid (PFDDA)	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH7A)	U	0.44	5.0								
Perfluorohexadecanoic Acid (PFH16A)	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFH6A)	U	1.2	5.0								
Perfluoronanesulfonic Acid	U	0.5	5.0								
Perfluoronanoic Acid (PFNA)	U	0.87	5.0								
Perfluorooctadecanoic Acid (PFH18A)	U	0.65	5.0								
Perfluorooctanesulfonamide (PFOS)	U	0.71	5.0								
Perfluorooctanesulfonic Acid (PFOS)	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA)	U	0.63	2.0								
Perfluoropentanesulfonic Acid	U	0.56	5.0								
Perfluoropentanoic Acid (PFPeA)	U	1.3	5.0								
Perfluorotetradecanoic Acid (PFH14A)	U	2.6	5.0								
Perfluorotridecanoic Acid (PFH13A)	U	0.77	5.0								
Perfluoroundecanoic Acid (PFH11A)	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfonate	U	1.2	5.0								
N-Ethylperfluorooctanesulfonate	U	0.63	5.0								
N-Ethylperfluorooctanesulfonate	U	0.52	5.0								
N-methylperfluoro-1-octanesulfonate	U	0.79	5.0								
N-Methylperfluorooctanesulfonate	U	0.64	5.0								
N-Methylperfluorooctanesulfonate	U	0.48	5.0								
Hexafluoropropylene oxide dimer	UI	1.2	5.0								
4,8-Dioxa-3H-perfluorononane	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	93.04	0	0	149.4	0	62.3	50-150	0			
Surr: 13C2-FtS 6:2	114	0	0	152	0	75	50-150	0			
Surr: 13C2-FtS 8:2	114.4	0	0	153.3	0	74.6	50-150	0			
Surr: 13C2-PFDA	124.7	0	0	160	0	77.9	50-150	0			
Surr: 13C2-PFDoA	87.14	0	0	160	0	54.5	50-150	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21081410
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
<i>Surr: 13C2-PFHxA</i>	<i>106.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFHxDA</i>	<i>106.5</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFTeA</i>	<i>94.43</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>59</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFUnA</i>	<i>139</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>86.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>99.67</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>62.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>86.02</i>	<i>0</i>	<i>0</i>	<i>148.8</i>	<i>0</i>	<i>57.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>102.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>123.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>77.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>114.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>109.8</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>71.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>108.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>67.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>97.39</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>60.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>102.2</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>77.65</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>51.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>85.18</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>53.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>116.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>72.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>90.56</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>56.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>83.68</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>52.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>106.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>98.57</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>61.6</i>	<i>50-150</i>	<i>0</i>	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

LCS		Sample ID: LCS-182190-182190				Units: ng/L			Analysis Date: 8/18/2021 05:07 PM		
Client ID:		Run ID: LCMS1_210818B			SeqNo: 7678475		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	39.54	0.94	5.0	29.9	0	132	63-143	0			
Fluorotelomer Sulphonic Acid	36.45	0.66	5.0	30.3	0	120	64-140	0			
Fluorotelomer Sulphonic Acid	36.22	1.1	5.0	30.7	0	118	67-138	0			
Fluorotelomer Sulphonic Acid	50.64	0.9	5.0	30.8	0	164	40-160	0			S
Perfluorobutanoic Acid (PFBA)	33.55	2.6	5.0	32	0	105	73-129	0			
Perfluorodecanesulfonic Acid	32.15	1.4	5.0	30.8	0	104	53-142	0			
Perfluorodecanoic Acid (PFDA)	32.1	1.2	5.0	32	0	100	71-129	0			
Perfluorododecanesulfonic Acid	26.32	1.4	5.0	31	0	84.9	69-134	0			
Perfluorododecanoic Acid (PFDA)	29.46	1.4	5.0	32	0	92.1	72-134	0			
Perfluoroheptanesulfonic Acid	38.34	0.57	5.0	30.5	0	126	69-134	0			
Perfluoroheptanoic Acid (PFHpA)	38.44	0.44	5.0	32	0	120	72-130	0			
Perfluorohexadecanoic Acid (PFHxDA)	39.34	0.38	5.0	32	0	123	70-130	0			
Perfluorohexanesulfonic Acid	32.38	0.37	5.0	29.1	0	111	68-131	0			
Perfluorohexanoic Acid (PFHxA)	33.47	1.2	5.0	32	0	105	72-129	0			
Perfluoronanesulfonic Acid	35.34	0.5	5.0	30.7	0	115	69-127	0			
Perfluorononanoic Acid (PFNA)	32.2	0.87	5.0	32	0	101	69-130	0			
Perfluorooctanesulfonamide (PFOSA)	39.06	0.71	5.0	32	0	122	67-137	0			
Perfluorooctanesulfonic Acid (PFOS)	31.08	0.89	2.0	29.7	0	105	65-140	0			
Perfluorooctanoic Acid (PFOA)	26.18	0.63	2.0	32	0	81.8	71-133	0			
Perfluoropentanesulfonic Acid	32.31	0.56	5.0	30	0	108	71-127	0			
Perfluoropentanoic Acid (PFPA)	39.4	1.3	5.0	32	0	123	72-129	0			
Perfluorotetradecanoic Acid (PFTrDA)	36.89	2.6	5.0	32	0	115	71-132	0			
Perfluorotridecanoic Acid (PFTeA)	44.96	0.77	5.0	32	0	140	65-144	0			
Perfluoroundecanoic Acid (PFUnA)	32.31	0.97	5.0	32	0	101	69-133	0			
N-Ethylperfluorooctanesulfonamide	30.37	0.63	5.0	32	0	94.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	35.06	0.52	5.0	32	0	110	70-130	0			
N-Methylperfluorooctanesulfonamide	37.4	0.64	5.0	32	0	117	65-136	0			
N-Methylperfluorooctanesulfonamide	35.33	0.48	5.0	32	0	110	68-141	0			
Hexafluoropropylene oxide dimer	39.41	1.2	5.0	32	0	123	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	29.65	0.56	5.0	30.1	0	98.5	70-130	0			
11Cl-Pf3OUdS	28.96	0.47	5.0	30.1	0	96.2	70-130	0			
9Cl-PF3ONS	30.51	0.45	5.0	29.8	0	102	70-130	0			
Surr: 13C2-FtS 4:2	96.75	0	0	149.4	0	64.7	50-150	0			
Surr: 13C2-FtS 6:2	116.6	0	0	152	0	76.7	50-150	0			
Surr: 13C2-FtS 8:2	113.9	0	0	153.3	0	74.3	50-150	0			
Surr: 13C2-PFDA	135.5	0	0	160	0	84.7	50-150	0			
Surr: 13C2-PFDoA	111.7	0	0	160	0	69.8	50-150	0			
Surr: 13C2-PFHxA	119.1	0	0	160	0	74.4	50-150	0			
Surr: 13C2-PFHxDA	108.3	0	0	160	0	67.7	50-150	0			
Surr: 13C2-PFTeA	104.6	0	0	160	0	65.4	50-150	0			
Surr: 13C2-PFUnA	155.9	0	0	160	0	97.5	50-150	0			
Surr: 13C3-HFPO-DA	98.46	0	0	160	0	61.5	50-150	0			
Surr: 13C3-PFBS	88.94	0	0	148.8	0	59.8	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C4-PFBA	120.9	0	0	160	0	75.6	50-150	0	
Surr: 13C4-PFHpA	119.1	0	0	160	0	74.4	50-150	0	
Surr: 13C4-PFOA	145.2	0	0	160	0	90.8	50-150	0	
Surr: 13C4-PFOS	120.9	0	0	152.8	0	79.1	50-150	0	
Surr: 13C5-PFNA	123.6	0	0	160	0	77.2	50-150	0	
Surr: 13C5-PFPeA	98.57	0	0	160	0	61.6	50-150	0	
Surr: 13C8-FOSA	105.4	0	0	160	0	65.9	50-150	0	
Surr: 18O2-PFHxS	102.8	0	0	151.2	0	68	50-150	0	
Surr: d5-N-EtFOSA	84.23	0	0	160	0	52.6	50-150	0	
Surr: d5-N-EtFOSAA	120.9	0	0	160	0	75.6	50-150	0	
Surr: d9-N-EtFOSE	100.6	0	0	160	0	62.9	50-150	0	
Surr: d3-N-MeFOSA	101.5	0	0	160	0	63.5	50-150	0	
Surr: d3-N-MeFOSAA	105	0	0	160	0	65.7	50-150	0	
Surr: d7-N-MeFOSE	110.1	0	0	160	0	68.8	50-150	0	

LCS		Sample ID: LCS-182190-182190			Units: ng/L		Analysis Date: 8/19/2021 11:42 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678856		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanesulfonic Acid (	35.59	0.35	5.0	28.3	0	126	72-130	0			
Perfluorooctadecanoic Acid (P	39.69	0.65	5.0	32	0	124	70-130	0			
N-Ethylperfluorooctanesulfona	37.92	0.52	5.0	32	0	119	70-130	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MS		Sample ID: 21081217-06AMS				Units: ng/L		Analysis Date: 8/18/2021 05:18 PM			
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678476		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	30.34	0.92	4.9	29.43	0	103	63-143	0			
Fluorotelomer Sulphonic Acid	32.83	0.65	4.9	29.82	2.223	103	64-140	0			
Fluorotelomer Sulphonic Acid	29.75	1.1	4.9	30.22	0.3387	97.3	67-138	0			
Fluorotelomer Sulphonic Acid	24.29	0.89	4.9	30.32	0	80.1	40-160	0			
Perfluorobutanesulfonic Acid	59.37	0.35	4.9	27.85	31.12	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	36.64	2.6	4.9	31.5	22.05	46.3	73-129	0			S
Perfluorodecanesulfonic Acid	29.55	1.3	4.9	30.32	0	97.5	53-142	0			
Perfluorodecanoic Acid (PFDA)	27.21	1.2	4.9	31.5	0.5387	84.7	71-129	0			
Perfluorododecanesulfonic Acid	22.32	1.4	4.9	30.51	0	73.1	69-134	0			
Perfluorododecanoic Acid (PFDA)	26	1.4	4.9	31.5	0	82.5	72-134	0			
Perfluoroheptanesulfonic Acid	41.17	0.56	4.9	30.02	10.21	103	69-134	0			
Perfluoroheptanoic Acid (PFHx)	42.35	0.43	4.9	31.5	12.74	94	72-130	0			
Perfluorohexadecanoic Acid (PFHx)	30.53	0.38	4.9	31.5	0	96.9	70-130	0			
Perfluorohexanesulfonic Acid	64.25	0.36	4.9	28.64	42.25	76.8	68-131	0			
Perfluorohexanoic Acid (PFHx)	36.98	1.2	4.9	31.5	11.81	79.9	72-129	0			
Perfluoronanesulfonic Acid	29.48	0.49	4.9	30.22	0	97.6	69-127	0			
Perfluorononanoic Acid (PFNA)	26.92	0.86	4.9	31.5	1.152	81.8	69-130	0			
Perfluorooctadecanoic Acid (PFDA)	31.3	0.64	4.9	31.5	0	99.4	70-130	0			
Perfluorooctanesulfonamide (PFOS)	32	0.7	4.9	31.5	0	102	67-137	0			
Perfluorooctanoic Acid (PFOA)	41.8	0.62	2.0	31.5	26.64	48.1	71-133	0			S
Perfluoropentanesulfonic Acid	44.37	0.55	4.9	29.53	16.47	94.5	71-127	0			
Perfluoropentanoic Acid (PFPeA)	36.74	1.3	4.9	31.5	11.03	81.7	72-129	0			
Perfluorotetradecanoic Acid (PFDA)	32.09	2.6	4.9	31.5	0	102	71-132	0			
Perfluorotridecanoic Acid (PFTA)	38.55	0.76	4.9	31.5	0	122	65-144	0			
Perfluoroundecanoic Acid (PFDA)	28.12	0.96	4.9	31.5	0	89.3	69-133	0			
N-ethylperfluoro-1-octanesulfonamide	34.25	1.1	4.9	31.5	0	109	70-130	0			
N-Ethylperfluorooctanesulfonamide	28.12	0.62	4.9	31.5	1.061	85.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	29.13	0.51	4.9	31.5	0	92.5	70-130	0			
N-methylperfluoro-1-octanesulfonamide	35.33	0.78	4.9	31.5	0	112	70-130	0			
N-Methylperfluorooctanesulfonamide	30.78	0.63	4.9	31.5	0	97.7	65-136	0			
N-Methylperfluorooctanesulfonamide	27.47	0.48	4.9	31.5	0	87.2	68-141	0			
Hexafluoropropylene oxide dimer	32.19	1.2	4.9	31.5	0	102	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	22.57	0.55	4.9	29.63	0	76.2	70-130	0			
11Cl-Pf3OUdS	24.25	0.46	4.9	29.63	0	81.8	70-130	0			
9Cl-PF3ONS	26.65	0.44	4.9	29.33	0	90.9	70-130	0			
Surr: 13C2-FtS 4:2	430.2	0	0	147.1	0	292	50-150	0			S
Surr: 13C2-FtS 6:2	292.3	0	0	149.6	0	195	50-150	0			S
Surr: 13C2-FtS 8:2	237.9	0	0	150.9	0	158	50-150	0			S
Surr: 13C2-PFDA	144.2	0	0	157.5	0	91.5	50-150	0			
Surr: 13C2-PFDoA	117.5	0	0	157.5	0	74.6	50-150	0			
Surr: 13C2-PFHxA	99.18	0	0	157.5	0	63	50-150	0			
Surr: 13C2-PFHxDA	110.6	0	0	157.5	0	70.2	50-150	0			
Surr: 13C2-PFTeA	98.54	0	0	157.5	0	62.6	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C2-PFUnA	152.3	0	0	157.5	0	96.7	50-150	0	
Surr: 13C3-HFPO-DA	78.4	0	0	157.5	0	49.8	50-150	0	S
Surr: 13C3-PFBS	93.17	0	0	146.5	0	63.6	50-150	0	
Surr: 13C4-PFBA	93.4	0	0	157.5	0	59.3	50-150	0	
Surr: 13C4-PFHpA	96.87	0	0	157.5	0	61.5	50-150	0	
Surr: 13C4-PFOA	120.3	0	0	157.5	0	76.4	50-150	0	
Surr: 13C4-PFOS	111.8	0	0	150.4	0	74.3	50-150	0	
Surr: 13C5-PFNA	133.7	0	0	157.5	0	84.9	50-150	0	
Surr: 13C5-PFPeA	81.17	0	0	157.5	0	51.5	50-150	0	
Surr: 13C8-FOSA	112.4	0	0	157.5	0	71.3	50-150	0	
Surr: 18O2-PFHxS	109.4	0	0	148.8	0	73.5	50-150	0	
Surr: d5-N-EtFOSA	92.4	0	0	157.5	0	58.7	50-150	0	
Surr: d5-N-EtFOSAA	145.3	0	0	157.5	0	92.3	50-150	0	
Surr: d9-N-EtFOSE	102.9	0	0	157.5	0	65.3	50-150	0	
Surr: d3-N-MeFOSA	105.3	0	0	157.5	0	66.9	50-150	0	
Surr: d3-N-MeFOSAA	134.5	0	0	157.5	0	85.4	50-150	0	
Surr: d7-N-MeFOSE	113.8	0	0	157.5	0	72.3	50-150	0	

MS		Sample ID: 21081217-06AMS			Units: ng/L		Analysis Date: 8/19/2021 11:53 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678857		Prep Date: 8/18/2021		DF: 10		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (I	310.2	8.8	20	29.23	443.3	-455	65-140	0			SO

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MSD		Sample ID: 21081217-06AMSD				Units: ng/L			Analysis Date: 8/18/2021 05:28 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678477		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.66	0.95	5.1	30.39	0	114	63-143	30.34	13.3	30	
Fluorotelomer Sulphonic Acid	38.17	0.67	5.1	30.79	2.223	117	64-140	32.83	15	30	
Fluorotelomer Sulphonic Acid	35.23	1.1	5.1	31.2	0.3387	112	67-138	29.75	16.9	30	
Fluorotelomer Sulphonic Acid	26.61	0.92	5.1	31.3	0	85	40-160	24.29	9.13	30	
Perfluorobutanesulfonic Acid	65.04	0.36	5.1	28.76	31.12	118	72-130	59.37	9.12	30	
Perfluorobutanoic Acid (PFBA)	38.63	2.6	5.1	32.52	22.05	51	73-129	36.64	5.29	30	S
Perfluorodecanesulfonic Acid	31.45	1.4	5.1	31.3	0	100	53-142	29.55	6.24	30	
Perfluorodecanoic Acid (PFDA)	33.05	1.3	5.1	32.52	0.5387	100	71-129	27.21	19.4	30	
Perfluorododecanesulfonic Acid	28.64	1.5	5.1	31.5	0	90.9	69-134	22.32	24.8	30	
Perfluorododecanoic Acid (PFDA)	29.7	1.5	5.1	32.52	0	91.3	72-134	26	13.3	30	
Perfluoroheptanesulfonic Acid	47.71	0.58	5.1	31	10.21	121	69-134	41.17	14.7	30	
Perfluoroheptanoic Acid (PFHx)	44.73	0.45	5.1	32.52	12.74	98.4	72-130	42.35	5.49	30	
Perfluorohexadecanoic Acid (PFHx)	35.76	0.39	5.1	32.52	0	110	70-130	30.53	15.8	30	
Perfluorohexanesulfonic Acid	70.46	0.37	5.1	29.57	42.25	95.4	68-131	64.25	9.22	30	
Perfluorohexanoic Acid (PFHx)	43.16	1.2	5.1	32.52	11.81	96.4	72-129	36.98	15.4	30	
Perfluoronanesulfonic Acid	36.06	0.5	5.1	31.2	0	116	69-127	29.48	20.1	30	
Perfluorononanoic Acid (PFNA)	32.02	0.88	5.1	32.52	1.152	94.9	69-130	26.92	17.3	30	
Perfluorooctadecanoic Acid (PFDA)	33.24	0.66	5.1	32.52	0	102	70-130	31.3	5.99	30	
Perfluorooctanesulfonamide (PFOS)	36.37	0.72	5.1	32.52	0	112	67-137	32	12.8	30	
Perfluorooctanoic Acid (PFOA)	45.07	0.64	2.0	32.52	26.64	56.7	71-133	41.8	7.53	30	S
Perfluoropentanesulfonic Acid	51.02	0.57	5.1	30.49	16.47	113	71-127	44.37	14	30	
Perfluoropentanoic Acid (PFPeA)	41.83	1.3	5.1	32.52	11.03	94.7	72-129	36.74	12.9	30	
Perfluorotetradecanoic Acid (PFDA)	38.19	2.7	5.1	32.52	0	117	71-132	32.09	17.3	30	
Perfluorotridecanoic Acid (PFTA)	40.65	0.78	5.1	32.52	0	125	65-144	38.55	5.3	30	
Perfluoroundecanoic Acid (PFDA)	34.16	0.99	5.1	32.52	0	105	69-133	28.12	19.4	30	
N-ethylperfluoro-1-octanesulfonate	38.89	1.2	5.1	32.52	0	120	70-130	34.25	12.7	30	
N-Ethylperfluorooctanesulfonate	32	0.64	5.1	32.52	1.061	95.1	61-135	28.12	12.9	30	
N-Ethylperfluorooctanesulfonate	34.66	0.53	5.1	32.52	0	107	70-130	29.13	17.4	30	
N-methylperfluoro-1-octanesulfonate	42.1	0.81	5.1	32.52	0	129	70-130	35.33	17.5	30	
N-Methylperfluorooctanesulfonate	38.1	0.65	5.1	32.52	0	117	65-136	30.78	21.3	30	
N-Methylperfluorooctanesulfonate	30.83	0.49	5.1	32.52	0	94.8	68-141	27.47	11.5	30	
Hexafluoropropylene oxide dimer	37.07	1.2	5.1	32.52	0	114	70-130	32.19	14.1	30	
4,8-Dioxa-3H-perfluorononanoic Acid	25.46	0.57	5.1	30.59	0	83.2	70-130	22.57	12.1	30	
11Cl-Pf3OUdS	30.27	0.47	5.1	30.59	0	98.9	70-130	24.25	22.1	30	
9Cl-PF3ONS	31.68	0.46	5.1	30.28	0	105	70-130	26.65	17.2	30	
Surr: 13C2-FtS 4:2	409	0	0	151.9	0	269	50-150	430.2	5.04	30	S
Surr: 13C2-FtS 6:2	289.7	0	0	154.5	0	188	50-150	292.3	0.895	30	S
Surr: 13C2-FtS 8:2	230.5	0	0	155.8	0	148	50-150	237.9	3.16	30	
Surr: 13C2-PFDA	139	0	0	162.6	0	85.5	50-150	144.2	3.63	30	
Surr: 13C2-PFDoA	121.9	0	0	162.6	0	75	50-150	117.5	3.63	30	
Surr: 13C2-PFHxA	94.58	0	0	162.6	0	58.2	50-150	99.18	4.75	30	
Surr: 13C2-PFHxDA	110.7	0	0	162.6	0	68.1	50-150	110.6	0.0868	30	
Surr: 13C2-PFTeA	98.41	0	0	162.6	0	60.5	50-150	98.54	0.134	30	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod									
Surr: 13C2-PFUnA	150.5	0	0	162.6	0	92.5	50-150	152.3	1.19	30	
Surr: 13C3-HFPO-DA	73.66	0	0	162.6	0	45.3	50-150	78.4	6.24	30	S
Surr: 13C3-PFBS	90.75	0	0	151.2	0	60	50-150	93.17	2.64	30	
Surr: 13C4-PFBA	92.7	0	0	162.6	0	57	50-150	93.4	0.748	30	
Surr: 13C4-PFHpA	108	0	0	162.6	0	66.4	50-150	96.87	10.8	30	
Surr: 13C4-PFOA	120.9	0	0	162.6	0	74.4	50-150	120.3	0.533	30	
Surr: 13C4-PFOS	105	0	0	155.3	0	67.6	50-150	111.8	6.2	30	
Surr: 13C5-PFNA	129.3	0	0	162.6	0	79.5	50-150	133.7	3.35	30	
Surr: 13C5-PFPeA	79.27	0	0	162.6	0	48.8	50-150	81.17	2.37	30	S
Surr: 13C8-FOSA	110.9	0	0	162.6	0	68.2	50-150	112.4	1.32	30	
Surr: 18O2-PFHxS	103.2	0	0	153.7	0	67.2	50-150	109.4	5.8	30	
Surr: d5-N-EtFOSA	94.37	0	0	162.6	0	58	50-150	92.4	2.11	30	
Surr: d5-N-EtFOSAA	145.9	0	0	162.6	0	89.7	50-150	145.3	0.38	30	
Surr: d9-N-EtFOSE	100.5	0	0	162.6	0	61.8	50-150	102.9	2.28	30	
Surr: d3-N-MeFOSA	101.9	0	0	162.6	0	62.7	50-150	105.3	3.25	30	
Surr: d3-N-MeFOSAA	134.6	0	0	162.6	0	82.8	50-150	134.5	0.113	30	
Surr: d7-N-MeFOSE	109.8	0	0	162.6	0	67.5	50-150	113.8	3.57	30	

MSD		Sample ID: 21081217-06AMSD				Units: ng/L		Analysis Date: 8/19/2021 12:03 PM			
Client ID:		Run ID: LCMS1_210819A		SeqNo: 7678858		Prep Date: 8/18/2021		DF: 10			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (l	504.4	9.1	20	30.18	443.3	202	65-140	310.2	47.7	30	SRO

The following samples were analyzed in this batch: 21081410-01A



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

Chain of Custody Form

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

Page 1 of 1

COC ID: 229890

ALS Project Manager: JN

ALS Work Order #: 21081410

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	ALS 2024	Project Name	WRP	A	PFAS 537 Modified											
Work Order		Project Number	55929.007-FB	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	Address	8040 Excelsior Drive	E												
	Suite 303		Suite 303	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	asmillere@gnfnet.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	8-13-21	10:15	Water	-	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign Cliff Wright CEO		Shipment Method FedEx		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: Cliff Wright	Date: 8-13-21	Time: 13:30	Received by: FedEx	Notes:							
Relinquished by: FedEx	Date: 8/14/21	Time: 1000	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
Logged by (Laboratory):	Date: 8/16/21	Time: 1509	Checked by (Laboratory):	IR3	4.30e	<input type="checkbox"/> Level II Std QO	<input type="checkbox"/> TRRP CheckList				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035				<input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV							
				<input type="checkbox"/> Level IV SW646/CLP							
				<input type="checkbox"/> Other							

Sample Receipt Checklist

Client Name: **GANNETT FLEMING - WI**

Date/Time Received: **14-Aug-21 10:00**

Work Order: **21081410**

Received by: **LYS**

Checklist completed by *Lydia Sweet* 16-Aug-21
eSignature Date

Reviewed by: *Jadi Blawie* 16-Aug-21
eSignature 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):

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

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:



VIA Federal Express

August 23, 2021

File #55929.007

██████████
5551 South Lowes Creek Road
Eau Claire, WI 54701

Dear Neighbor of WRR Environmental Services:

On August 13, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5551 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-10. The water sample collected from your home in August 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 August 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.

August 23, 2021

-2-

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,

A handwritten signature in black ink that reads "James Hager". The signature is written in a cursive style with a large initial "J" and "H".

Jim Hager

President – WRR Environmental Services Co., Inc.

Enc.

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



23-Aug-2021

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

Re: **WRR 55929.007**

Work Order: **21081406**

Dear Anthony,

ALS Environmental received 1 sample on 14-Aug-2021 10:00 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,

A handwritten signature in cursive script that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081406

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21081406-01	PW-10	Drinking Wat		8/13/2021 09:20	8/14/2021 10:00	<input type="checkbox"/>

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: 21081406

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

<u>Units Reported</u>	<u>Description</u>
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081406

Case Narrative

Samples for the above noted Work Order were received on 08/14/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

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

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

Extractable Organics:

Batch 182190, Method E537 Mod, Sample LCS-182190: The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: FtS 10:2

No other deviations or anomalies were noted.

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-10
Collection Date: 8/13/2021 09:20 AM

Work Order: 21081406
Lab ID: 21081406-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED			Method: E537 MOD		Prep: E537 Mod / 8/18/21		Analyst: AK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.88	4.7	ng/L	1	8/18/2021 19:02
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.63	4.7	ng/L	1	8/18/2021 19:02
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	4.7	ng/L	1	8/18/2021 19:02
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.85	4.7	ng/L	1	8/18/2021 19:02
Perfluorobutanesulfonic Acid (PFBS)	U		0.33	4.7	ng/L	1	8/18/2021 19:02
Perfluorobutanoic Acid (PFBA)	U		2.5	4.7	ng/L	1	8/18/2021 19:02
Perfluorodecanesulfonic Acid (PFDS)	U		1.3	4.7	ng/L	1	8/18/2021 19:02
Perfluorodecanoic Acid (PFDA)	U		1.2	4.7	ng/L	1	8/18/2021 19:02
Perfluorododecanesulfonic Acid (PFDoS)	U		1.4	4.7	ng/L	1	8/18/2021 19:02
Perfluorododecanoic Acid (PFDoA)	U		1.3	4.7	ng/L	1	8/18/2021 19:02
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.53	4.7	ng/L	1	8/18/2021 19:02
Perfluoroheptanoic Acid (PFHpA)	U		0.42	4.7	ng/L	1	8/18/2021 19:02
Perfluorohexadecanoic Acid (PFHxDA)	U		0.36	4.7	ng/L	1	8/18/2021 19:02
Perfluorohexanesulfonic Acid (PFHxS)	U		0.35	4.7	ng/L	1	8/18/2021 19:02
Perfluorohexanoic Acid (PFHxA)	U		1.1	4.7	ng/L	1	8/18/2021 19:02
Perfluorononanesulfonic Acid (PFNS)	U		0.47	4.7	ng/L	1	8/18/2021 19:02
Perfluorononanoic Acid (PFNA)	U		0.82	4.7	ng/L	1	8/18/2021 19:02
Perfluorooctadecanoic Acid (PFODA)	U		0.61	4.7	ng/L	1	8/18/2021 19:02
Perfluorooctanesulfonamide (PFOSA)	U		0.67	4.7	ng/L	1	8/18/2021 19:02
Perfluorooctanesulfonic Acid (PFOS)	U		0.84	1.9	ng/L	1	8/18/2021 19:02
Perfluorooctanoic Acid (PFOA)	U		0.59	1.9	ng/L	1	8/18/2021 19:02
Perfluoropentanesulfonic Acid (PFPeS)	U		0.52	4.7	ng/L	1	8/18/2021 19:02
Perfluoropentanoic Acid (PFPeA)	U		1.2	4.7	ng/L	1	8/18/2021 19:02
Perfluorotetradecanoic Acid (PFTeA)	U		2.5	4.7	ng/L	1	8/18/2021 19:02
Perfluorotridecanoic Acid (PFTriA)	U		0.73	4.7	ng/L	1	8/18/2021 19:02
Perfluoroundecanoic Acid (PFUnA)	U		0.92	4.7	ng/L	1	8/18/2021 19:02
N-ethylperfluoro-1-octanesulfonamide	U		1.1	4.7	ng/L	1	8/18/2021 19:02
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.59	4.7	ng/L	1	8/18/2021 19:02
N-Ethylperfluorooctanesulfonamidoethanol	U		0.49	4.7	ng/L	1	8/18/2021 19:02
N-methylperfluoro-1-octanesulfonamide	U		0.75	4.7	ng/L	1	8/18/2021 19:02

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

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-10
Collection Date: 8/13/2021 09:20 AM

Work Order: 21081406
Lab ID: 21081406-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.61	4.7	ng/L	1	8/18/2021 19:02
N-Methylperfluorooctanesulfonamidoethanol	U		0.46	4.7	ng/L	1	8/18/2021 19:02
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.1	4.7	ng/L	1	8/18/2021 19:02
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.53	4.7	ng/L	1	8/18/2021 19:02
11Cl-Pf3OUdS	U		0.44	4.7	ng/L	1	8/18/2021 19:02
9Cl-PF3ONS	U		0.42	4.7	ng/L	1	8/18/2021 19:02
Surr: 13C2-FtS 4:2	86.0			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-FtS 6:2	79.6			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-FtS 8:2	79.4			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-PFDA	76.3			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-PFDoA	76.3			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-PFHxA	76.1			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-PFHxDA	61.0			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-PFTeA	66.3			50-150	%REC	1	8/18/2021 19:02
Surr: 13C2-PFUnA	76.4			50-150	%REC	1	8/18/2021 19:02
Surr: 13C3-HFPO-DA	58.9			50-150	%REC	1	8/18/2021 19:02
Surr: 13C3-PFBS	69.5			50-150	%REC	1	8/18/2021 19:02
Surr: 13C4-PFBA	73.8			50-150	%REC	1	8/18/2021 19:02
Surr: 13C4-PFHpA	70.9			50-150	%REC	1	8/18/2021 19:02
Surr: 13C4-PFOA	79.5			50-150	%REC	1	8/18/2021 19:02
Surr: 13C4-PFOS	71.3			50-150	%REC	1	8/18/2021 19:02
Surr: 13C5-PFNA	86.7			50-150	%REC	1	8/18/2021 19:02
Surr: 13C5-PFPeA	72.8			50-150	%REC	1	8/18/2021 19:02
Surr: 13C8-FOSA	65.0			50-150	%REC	1	8/18/2021 19:02
Surr: 18O2-PFHxS	71.8			50-150	%REC	1	8/18/2021 19:02
Surr: d5-N-EtFOSA	61.0			50-150	%REC	1	8/18/2021 19:02
Surr: d5-N-EtFOSAA	66.0			50-150	%REC	1	8/18/2021 19:02
Surr: d9-N-EtFOSE	63.2			50-150	%REC	1	8/18/2021 19:02
Surr: d3-N-MeFOSA	60.9			50-150	%REC	1	8/18/2021 19:02
Surr: d3-N-MeFOSAA	62.9			50-150	%REC	1	8/18/2021 19:02
Surr: d7-N-MeFOSE	65.9			50-150	%REC	1	8/18/2021 19:02

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

Client: Gannett Fleming, Inc.
 Work Order: 21081406
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **182190** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK		Sample ID: MBLK-182190-182190				Units: ng/L		Analysis Date: 8/18/2021 04:57 PM			
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678474		Prep Date: 8/18/2021		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 Acid	U	1.4	5.0								
Perfluorododecanoic Acid (PFDA)	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFHx)	U	0.44	5.0								
Perfluorohexadecanoic Acid (PFHx)	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx)	U	1.2	5.0								
Perfluoronanesulfonic Acid	U	0.5	5.0								
Perfluoronanoic Acid (PFNA)	U	0.87	5.0								
Perfluorooctadecanoic Acid (PFDA)	U	0.65	5.0								
Perfluorooctanesulfonamide (PFOS)	U	0.71	5.0								
Perfluorooctanesulfonic Acid (PFOS)	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA)	U	0.63	2.0								
Perfluoropentanesulfonic Acid	U	0.56	5.0								
Perfluoropentanoic Acid (PFPeA)	U	1.3	5.0								
Perfluorotetradecanoic Acid (PFTrDA)	U	2.6	5.0								
Perfluorotridecanoic Acid (PFTTrDA)	U	0.77	5.0								
Perfluoroundecanoic Acid (PFUdA)	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfonate	U	1.2	5.0								
N-Ethylperfluorooctanesulfonate	U	0.63	5.0								
N-Ethylperfluorooctanesulfonate	U	0.52	5.0								
N-methylperfluoro-1-octanesulfonate	U	0.79	5.0								
N-Methylperfluorooctanesulfonate	U	0.64	5.0								
N-Methylperfluorooctanesulfonate	U	0.48	5.0								
Hexafluoropropylene oxide dimer	U	1.2	5.0								
4,8-Dioxo-3H-perfluorononanoic acid	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	93.04	0	0	149.4	0	62.3	50-150	0			
Surr: 13C2-FtS 6:2	114	0	0	152	0	75	50-150	0			
Surr: 13C2-FtS 8:2	114.4	0	0	153.3	0	74.6	50-150	0			
Surr: 13C2-PFDA	124.7	0	0	160	0	77.9	50-150	0			
Surr: 13C2-PFDoA	87.14	0	0	160	0	54.5	50-150	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21081406
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
<i>Surr: 13C2-PFHxA</i>	<i>106.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFHxDA</i>	<i>106.5</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFTeA</i>	<i>94.43</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>59</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFUnA</i>	<i>139</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>86.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>99.67</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>62.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>86.02</i>	<i>0</i>	<i>0</i>	<i>148.8</i>	<i>0</i>	<i>57.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>102.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>123.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>77.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>114.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>109.8</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>71.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>108.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>67.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>97.39</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>60.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>102.2</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>77.65</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>51.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>85.18</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>53.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>116.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>72.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>90.56</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>56.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>83.68</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>52.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>106.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>98.57</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>61.6</i>	<i>50-150</i>	<i>0</i>	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081406
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **182190** Instrument ID **LCMS1** Method: **E537 Mod**

LCS		Sample ID: LCS-182190-182190				Units: ng/L			Analysis Date: 8/18/2021 05:07 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678475		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	39.54	0.94	5.0	29.9	0	132	63-143	0			
Fluorotelomer Sulphonic Acid	36.45	0.66	5.0	30.3	0	120	64-140	0			
Fluorotelomer Sulphonic Acid	36.22	1.1	5.0	30.7	0	118	67-138	0			
Fluorotelomer Sulphonic Acid	50.64	0.9	5.0	30.8	0	164	40-160	0			S
Perfluorobutanoic Acid (PFBA)	33.55	2.6	5.0	32	0	105	73-129	0			
Perfluorodecanesulfonic Acid	32.15	1.4	5.0	30.8	0	104	53-142	0			
Perfluorodecanoic Acid (PFDA)	32.1	1.2	5.0	32	0	100	71-129	0			
Perfluorododecanesulfonic Acid	26.32	1.4	5.0	31	0	84.9	69-134	0			
Perfluorododecanoic Acid (PFDA)	29.46	1.4	5.0	32	0	92.1	72-134	0			
Perfluoroheptanesulfonic Acid	38.34	0.57	5.0	30.5	0	126	69-134	0			
Perfluoroheptanoic Acid (PFHpA)	38.44	0.44	5.0	32	0	120	72-130	0			
Perfluorohexadecanoic Acid (PFHxDA)	39.34	0.38	5.0	32	0	123	70-130	0			
Perfluorohexanesulfonic Acid	32.38	0.37	5.0	29.1	0	111	68-131	0			
Perfluorohexanoic Acid (PFHxA)	33.47	1.2	5.0	32	0	105	72-129	0			
Perfluoronanesulfonic Acid	35.34	0.5	5.0	30.7	0	115	69-127	0			
Perfluorononanoic Acid (PFNA)	32.2	0.87	5.0	32	0	101	69-130	0			
Perfluorooctanesulfonamide (PFOSA)	39.06	0.71	5.0	32	0	122	67-137	0			
Perfluorooctanesulfonic Acid (PFOS)	31.08	0.89	2.0	29.7	0	105	65-140	0			
Perfluorooctanoic Acid (PFOA)	26.18	0.63	2.0	32	0	81.8	71-133	0			
Perfluoropentanesulfonic Acid	32.31	0.56	5.0	30	0	108	71-127	0			
Perfluoropentanoic Acid (PFPeA)	39.4	1.3	5.0	32	0	123	72-129	0			
Perfluorotetradecanoic Acid (PFTrDA)	36.89	2.6	5.0	32	0	115	71-132	0			
Perfluorotridecanoic Acid (PFTeA)	44.96	0.77	5.0	32	0	140	65-144	0			
Perfluoroundecanoic Acid (PFUnA)	32.31	0.97	5.0	32	0	101	69-133	0			
N-Ethylperfluorooctanesulfonamide	30.37	0.63	5.0	32	0	94.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	35.06	0.52	5.0	32	0	110	70-130	0			
N-Methylperfluorooctanesulfonamide	37.4	0.64	5.0	32	0	117	65-136	0			
N-Methylperfluorooctanesulfonamide	35.33	0.48	5.0	32	0	110	68-141	0			
Hexafluoropropylene oxide dimer	39.41	1.2	5.0	32	0	123	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	29.65	0.56	5.0	30.1	0	98.5	70-130	0			
11Cl-Pf3OUdS	28.96	0.47	5.0	30.1	0	96.2	70-130	0			
9Cl-PF3ONS	30.51	0.45	5.0	29.8	0	102	70-130	0			
Surr: 13C2-FtS 4:2	96.75	0	0	149.4	0	64.7	50-150	0			
Surr: 13C2-FtS 6:2	116.6	0	0	152	0	76.7	50-150	0			
Surr: 13C2-FtS 8:2	113.9	0	0	153.3	0	74.3	50-150	0			
Surr: 13C2-PFDA	135.5	0	0	160	0	84.7	50-150	0			
Surr: 13C2-PFDoA	111.7	0	0	160	0	69.8	50-150	0			
Surr: 13C2-PFHxA	119.1	0	0	160	0	74.4	50-150	0			
Surr: 13C2-PFHxDA	108.3	0	0	160	0	67.7	50-150	0			
Surr: 13C2-PFTeA	104.6	0	0	160	0	65.4	50-150	0			
Surr: 13C2-PFUnA	155.9	0	0	160	0	97.5	50-150	0			
Surr: 13C3-HFPO-DA	98.46	0	0	160	0	61.5	50-150	0			
Surr: 13C3-PFBS	88.94	0	0	148.8	0	59.8	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081406
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C4-PFBA	120.9	0	0	160	0	75.6	50-150	0	
Surr: 13C4-PFHpA	119.1	0	0	160	0	74.4	50-150	0	
Surr: 13C4-PFOA	145.2	0	0	160	0	90.8	50-150	0	
Surr: 13C4-PFOS	120.9	0	0	152.8	0	79.1	50-150	0	
Surr: 13C5-PFNA	123.6	0	0	160	0	77.2	50-150	0	
Surr: 13C5-PFPeA	98.57	0	0	160	0	61.6	50-150	0	
Surr: 13C8-FOSA	105.4	0	0	160	0	65.9	50-150	0	
Surr: 18O2-PFHxS	102.8	0	0	151.2	0	68	50-150	0	
Surr: d5-N-EtFOSA	84.23	0	0	160	0	52.6	50-150	0	
Surr: d5-N-EtFOSAA	120.9	0	0	160	0	75.6	50-150	0	
Surr: d9-N-EtFOSE	100.6	0	0	160	0	62.9	50-150	0	
Surr: d3-N-MeFOSA	101.5	0	0	160	0	63.5	50-150	0	
Surr: d3-N-MeFOSAA	105	0	0	160	0	65.7	50-150	0	
Surr: d7-N-MeFOSE	110.1	0	0	160	0	68.8	50-150	0	

LCS		Sample ID: LCS-182190-182190			Units: ng/L		Analysis Date: 8/19/2021 11:42 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678856		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanesulfonic Acid (	35.59	0.35	5.0	28.3	0	126	72-130	0			
Perfluorooctadecanoic Acid (P	39.69	0.65	5.0	32	0	124	70-130	0			
N-Ethylperfluorooctanesulfona	37.92	0.52	5.0	32	0	119	70-130	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081406
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MS		Sample ID: 21081217-06AMS				Units: ng/L		Analysis Date: 8/18/2021 05:18 PM			
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678476		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	30.34	0.92	4.9	29.43	0	103	63-143	0			
Fluorotelomer Sulphonic Acid	32.83	0.65	4.9	29.82	2.223	103	64-140	0			
Fluorotelomer Sulphonic Acid	29.75	1.1	4.9	30.22	0.3387	97.3	67-138	0			
Fluorotelomer Sulphonic Acid	24.29	0.89	4.9	30.32	0	80.1	40-160	0			
Perfluorobutanesulfonic Acid	59.37	0.35	4.9	27.85	31.12	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	36.64	2.6	4.9	31.5	22.05	46.3	73-129	0			S
Perfluorodecanesulfonic Acid	29.55	1.3	4.9	30.32	0	97.5	53-142	0			
Perfluorodecanoic Acid (PFDA)	27.21	1.2	4.9	31.5	0.5387	84.7	71-129	0			
Perfluorododecanesulfonic Acid	22.32	1.4	4.9	30.51	0	73.1	69-134	0			
Perfluorododecanoic Acid (PFDA)	26	1.4	4.9	31.5	0	82.5	72-134	0			
Perfluoroheptanesulfonic Acid	41.17	0.56	4.9	30.02	10.21	103	69-134	0			
Perfluoroheptanoic Acid (PFH7)	42.35	0.43	4.9	31.5	12.74	94	72-130	0			
Perfluorohexadecanoic Acid (PFH16)	30.53	0.38	4.9	31.5	0	96.9	70-130	0			
Perfluorohexanesulfonic Acid	64.25	0.36	4.9	28.64	42.25	76.8	68-131	0			
Perfluorohexanoic Acid (PFH6)	36.98	1.2	4.9	31.5	11.81	79.9	72-129	0			
Perfluoronanesulfonic Acid	29.48	0.49	4.9	30.22	0	97.6	69-127	0			
Perfluorononanoic Acid (PFNA)	26.92	0.86	4.9	31.5	1.152	81.8	69-130	0			
Perfluorooctadecanoic Acid (PFDA)	31.3	0.64	4.9	31.5	0	99.4	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	32	0.7	4.9	31.5	0	102	67-137	0			
Perfluorooctanoic Acid (PFOA)	41.8	0.62	2.0	31.5	26.64	48.1	71-133	0			S
Perfluoropentanesulfonic Acid	44.37	0.55	4.9	29.53	16.47	94.5	71-127	0			
Perfluoropentanoic Acid (PFPeA)	36.74	1.3	4.9	31.5	11.03	81.7	72-129	0			
Perfluorotetradecanoic Acid (PFDA)	32.09	2.6	4.9	31.5	0	102	71-132	0			
Perfluorotridecanoic Acid (PFTA)	38.55	0.76	4.9	31.5	0	122	65-144	0			
Perfluoroundecanoic Acid (PFDA)	28.12	0.96	4.9	31.5	0	89.3	69-133	0			
N-ethylperfluoro-1-octanesulfonate	34.25	1.1	4.9	31.5	0	109	70-130	0			
N-Ethylperfluorooctanesulfonate	28.12	0.62	4.9	31.5	1.061	85.9	61-135	0			
N-Ethylperfluorooctanesulfonate	29.13	0.51	4.9	31.5	0	92.5	70-130	0			
N-methylperfluoro-1-octanesulfonate	35.33	0.78	4.9	31.5	0	112	70-130	0			
N-Methylperfluorooctanesulfonate	30.78	0.63	4.9	31.5	0	97.7	65-136	0			
N-Methylperfluorooctanesulfonate	27.47	0.48	4.9	31.5	0	87.2	68-141	0			
Hexafluoropropylene oxide dimer	32.19	1.2	4.9	31.5	0	102	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	22.57	0.55	4.9	29.63	0	76.2	70-130	0			
11Cl-Pf3OUdS	24.25	0.46	4.9	29.63	0	81.8	70-130	0			
9Cl-PF3ONS	26.65	0.44	4.9	29.33	0	90.9	70-130	0			
Surr: 13C2-FtS 4:2	430.2	0	0	147.1	0	292	50-150	0			S
Surr: 13C2-FtS 6:2	292.3	0	0	149.6	0	195	50-150	0			S
Surr: 13C2-FtS 8:2	237.9	0	0	150.9	0	158	50-150	0			S
Surr: 13C2-PFDA	144.2	0	0	157.5	0	91.5	50-150	0			
Surr: 13C2-PFDoA	117.5	0	0	157.5	0	74.6	50-150	0			
Surr: 13C2-PFHxA	99.18	0	0	157.5	0	63	50-150	0			
Surr: 13C2-PFHxDA	110.6	0	0	157.5	0	70.2	50-150	0			
Surr: 13C2-PFTeA	98.54	0	0	157.5	0	62.6	50-150	0			

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

Client: Gannett Fleming, Inc.

Work Order: 21081406

Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C2-PFUnA	152.3	0	0	157.5	0	96.7	50-150	0	
Surr: 13C3-HFPO-DA	78.4	0	0	157.5	0	49.8	50-150	0	S
Surr: 13C3-PFBS	93.17	0	0	146.5	0	63.6	50-150	0	
Surr: 13C4-PFBA	93.4	0	0	157.5	0	59.3	50-150	0	
Surr: 13C4-PFHpA	96.87	0	0	157.5	0	61.5	50-150	0	
Surr: 13C4-PFOA	120.3	0	0	157.5	0	76.4	50-150	0	
Surr: 13C4-PFOS	111.8	0	0	150.4	0	74.3	50-150	0	
Surr: 13C5-PFNA	133.7	0	0	157.5	0	84.9	50-150	0	
Surr: 13C5-PFPeA	81.17	0	0	157.5	0	51.5	50-150	0	
Surr: 13C8-FOSA	112.4	0	0	157.5	0	71.3	50-150	0	
Surr: 18O2-PFHxS	109.4	0	0	148.8	0	73.5	50-150	0	
Surr: d5-N-EtFOSA	92.4	0	0	157.5	0	58.7	50-150	0	
Surr: d5-N-EtFOSAA	145.3	0	0	157.5	0	92.3	50-150	0	
Surr: d9-N-EtFOSE	102.9	0	0	157.5	0	65.3	50-150	0	
Surr: d3-N-MeFOSA	105.3	0	0	157.5	0	66.9	50-150	0	
Surr: d3-N-MeFOSAA	134.5	0	0	157.5	0	85.4	50-150	0	
Surr: d7-N-MeFOSE	113.8	0	0	157.5	0	72.3	50-150	0	

MS		Sample ID: 21081217-06AMS			Units: ng/L		Analysis Date: 8/19/2021 11:53 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678857		Prep Date: 8/18/2021		DF: 10		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (I	310.2	8.8	20	29.23	443.3	-455	65-140	0			SO

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

Client: Gannett Fleming, Inc.
 Work Order: 21081406
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MSD		Sample ID: 21081217-06AMSD				Units: ng/L			Analysis Date: 8/18/2021 05:28 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678477		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.66	0.95	5.1	30.39	0	114	63-143	30.34	13.3	30	
Fluorotelomer Sulphonic Acid	38.17	0.67	5.1	30.79	2.223	117	64-140	32.83	15	30	
Fluorotelomer Sulphonic Acid	35.23	1.1	5.1	31.2	0.3387	112	67-138	29.75	16.9	30	
Fluorotelomer Sulphonic Acid	26.61	0.92	5.1	31.3	0	85	40-160	24.29	9.13	30	
Perfluorobutanesulfonic Acid	65.04	0.36	5.1	28.76	31.12	118	72-130	59.37	9.12	30	
Perfluorobutanoic Acid (PFBA)	38.63	2.6	5.1	32.52	22.05	51	73-129	36.64	5.29	30	S
Perfluorodecanesulfonic Acid	31.45	1.4	5.1	31.3	0	100	53-142	29.55	6.24	30	
Perfluorodecanoic Acid (PFDA)	33.05	1.3	5.1	32.52	0.5387	100	71-129	27.21	19.4	30	
Perfluorododecanesulfonic Acid	28.64	1.5	5.1	31.5	0	90.9	69-134	22.32	24.8	30	
Perfluorododecanoic Acid (PFDA)	29.7	1.5	5.1	32.52	0	91.3	72-134	26	13.3	30	
Perfluoroheptanesulfonic Acid	47.71	0.58	5.1	31	10.21	121	69-134	41.17	14.7	30	
Perfluoroheptanoic Acid (PFHx)	44.73	0.45	5.1	32.52	12.74	98.4	72-130	42.35	5.49	30	
Perfluorohexadecanoic Acid (PFHx)	35.76	0.39	5.1	32.52	0	110	70-130	30.53	15.8	30	
Perfluorohexanesulfonic Acid	70.46	0.37	5.1	29.57	42.25	95.4	68-131	64.25	9.22	30	
Perfluorohexanoic Acid (PFHx)	43.16	1.2	5.1	32.52	11.81	96.4	72-129	36.98	15.4	30	
Perfluoronanesulfonic Acid	36.06	0.5	5.1	31.2	0	116	69-127	29.48	20.1	30	
Perfluorononanoic Acid (PFNA)	32.02	0.88	5.1	32.52	1.152	94.9	69-130	26.92	17.3	30	
Perfluorooctadecanoic Acid (PFDA)	33.24	0.66	5.1	32.52	0	102	70-130	31.3	5.99	30	
Perfluorooctanesulfonamide (PFOS)	36.37	0.72	5.1	32.52	0	112	67-137	32	12.8	30	
Perfluorooctanoic Acid (PFOA)	45.07	0.64	2.0	32.52	26.64	56.7	71-133	41.8	7.53	30	S
Perfluoropentanesulfonic Acid	51.02	0.57	5.1	30.49	16.47	113	71-127	44.37	14	30	
Perfluoropentanoic Acid (PFPeA)	41.83	1.3	5.1	32.52	11.03	94.7	72-129	36.74	12.9	30	
Perfluorotetradecanoic Acid (PFDA)	38.19	2.7	5.1	32.52	0	117	71-132	32.09	17.3	30	
Perfluorotridecanoic Acid (PFTA)	40.65	0.78	5.1	32.52	0	125	65-144	38.55	5.3	30	
Perfluoroundecanoic Acid (PFDA)	34.16	0.99	5.1	32.52	0	105	69-133	28.12	19.4	30	
N-ethylperfluoro-1-octanesulfonate	38.89	1.2	5.1	32.52	0	120	70-130	34.25	12.7	30	
N-Ethylperfluorooctanesulfonate	32	0.64	5.1	32.52	1.061	95.1	61-135	28.12	12.9	30	
N-Ethylperfluorooctanesulfonate	34.66	0.53	5.1	32.52	0	107	70-130	29.13	17.4	30	
N-methylperfluoro-1-octanesulfonate	42.1	0.81	5.1	32.52	0	129	70-130	35.33	17.5	30	
N-Methylperfluorooctanesulfonate	38.1	0.65	5.1	32.52	0	117	65-136	30.78	21.3	30	
N-Methylperfluorooctanesulfonate	30.83	0.49	5.1	32.52	0	94.8	68-141	27.47	11.5	30	
Hexafluoropropylene oxide dimer	37.07	1.2	5.1	32.52	0	114	70-130	32.19	14.1	30	
4,8-Dioxa-3H-perfluorononanoic Acid	25.46	0.57	5.1	30.59	0	83.2	70-130	22.57	12.1	30	
11Cl-Pf3OUdS	30.27	0.47	5.1	30.59	0	98.9	70-130	24.25	22.1	30	
9Cl-PF3ONS	31.68	0.46	5.1	30.28	0	105	70-130	26.65	17.2	30	
Surr: 13C2-FtS 4:2	409	0	0	151.9	0	269	50-150	430.2	5.04	30	S
Surr: 13C2-FtS 6:2	289.7	0	0	154.5	0	188	50-150	292.3	0.895	30	S
Surr: 13C2-FtS 8:2	230.5	0	0	155.8	0	148	50-150	237.9	3.16	30	
Surr: 13C2-PFDA	139	0	0	162.6	0	85.5	50-150	144.2	3.63	30	
Surr: 13C2-PFDoA	121.9	0	0	162.6	0	75	50-150	117.5	3.63	30	
Surr: 13C2-PFHxA	94.58	0	0	162.6	0	58.2	50-150	99.18	4.75	30	
Surr: 13C2-PFHxDA	110.7	0	0	162.6	0	68.1	50-150	110.6	0.0868	30	
Surr: 13C2-PFTeA	98.41	0	0	162.6	0	60.5	50-150	98.54	0.134	30	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081406
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod									
Surr: 13C2-PFUnA	150.5	0	0	162.6	0	92.5	50-150	152.3	1.19	30	
Surr: 13C3-HFPO-DA	73.66	0	0	162.6	0	45.3	50-150	78.4	6.24	30	S
Surr: 13C3-PFBS	90.75	0	0	151.2	0	60	50-150	93.17	2.64	30	
Surr: 13C4-PFBA	92.7	0	0	162.6	0	57	50-150	93.4	0.748	30	
Surr: 13C4-PFHpA	108	0	0	162.6	0	66.4	50-150	96.87	10.8	30	
Surr: 13C4-PFOA	120.9	0	0	162.6	0	74.4	50-150	120.3	0.533	30	
Surr: 13C4-PFOS	105	0	0	155.3	0	67.6	50-150	111.8	6.2	30	
Surr: 13C5-PFNA	129.3	0	0	162.6	0	79.5	50-150	133.7	3.35	30	
Surr: 13C5-PFPeA	79.27	0	0	162.6	0	48.8	50-150	81.17	2.37	30	S
Surr: 13C8-FOSA	110.9	0	0	162.6	0	68.2	50-150	112.4	1.32	30	
Surr: 18O2-PFHxS	103.2	0	0	153.7	0	67.2	50-150	109.4	5.8	30	
Surr: d5-N-EtFOSA	94.37	0	0	162.6	0	58	50-150	92.4	2.11	30	
Surr: d5-N-EtFOSAA	145.9	0	0	162.6	0	89.7	50-150	145.3	0.38	30	
Surr: d9-N-EtFOSE	100.5	0	0	162.6	0	61.8	50-150	102.9	2.28	30	
Surr: d3-N-MeFOSA	101.9	0	0	162.6	0	62.7	50-150	105.3	3.25	30	
Surr: d3-N-MeFOSAA	134.6	0	0	162.6	0	82.8	50-150	134.5	0.113	30	
Surr: d7-N-MeFOSE	109.8	0	0	162.6	0	67.5	50-150	113.8	3.57	30	

MSD		Sample ID: 21081217-06AMSD				Units: ng/L		Analysis Date: 8/19/2021 12:03 PM			
Client ID:		Run ID: LCMS1_210819A		SeqNo: 7678858		Prep Date: 8/18/2021		DF: 10			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (l	504.4	9.1	20	30.18	443.3	202	65-140	310.2	47.7	30	SRO

The following samples were analyzed in this batch: 21081406-01A



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Dollard, MI
+1 616 399 6070

Chain of Custody Form

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

Page 1 of 1

COC ID: 229892

ALS Project Manager: JWP

ALS Work Order #: 210814016

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	<u>ALS 2021</u>	Project Name	<u>WPK</u>	A	<u>RFAS 537M modified</u>											
Work Order		Project Number	<u>55929.057 - PW10</u>	B												
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C												
Send Report To	<u>Tony Miller</u>	Invoice Attn	Accounts Payable	D												
Address	8040 Excelsior Drive	Address	8040 Excelsior Drive	E												
	Suite 303		Suite 303	F												
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G												
Phone	(608) 838-1500	Phone	(608) 838-1500	H												
Fax		Fax		I												
e-Mail Address	<u>awm@vegfnet.com</u>	e-Mail Address		J												

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	<u>PW-10</u>	<u>8-13-21</u>	<u>0920</u>	<u>TD</u>	<u>-</u>	<u>2</u>	<u>X</u>										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign <u>Cliff Wright aw</u>		Shipment Method <u>FedEx</u>		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour				Results Due Date:											
Relinquished by: <u>aw</u>		Date: <u>8-13-21</u>	Time: <u>13:30</u>	Received by: <u>FedEx</u>		Notes:													
Relinquished by: <u>FedEx</u>		Date: <u>8/14/21</u>	Time: <u>1000</u>	Received by (Laboratory): <u>[Signature]</u>		Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)											
Logged by (Laboratory): <u>[Signature]</u>		Date: <u>8/16/21</u>	Time: <u>1501</u>	Checked by (Laboratory):		<u>IR3</u>	<u>4.3°C</u>	<input type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist										
Preservative Key:		1-HCl		2-HNO ₃		3-H ₂ SO ₄		4-NaOH		5-Na ₂ S ₂ O 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.

Sample Receipt Checklist

Client Name: **GANNETT FLEMING - WI**

Date/Time Received: **14-Aug-21 10:00**

Work Order: **21081406**

Received by: **LYS**

Checklist completed by *Lydia Sweet* 16-Aug-21
eSignature Date

Reviewed by: *Jodi Blawie* 16-Aug-21
eSignature 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):

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

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:



23-Aug-2021

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

Re: **WRR 55929.007**

Work Order: **21081410**

Dear Anthony,

ALS Environmental received 1 sample on 14-Aug-2021 10:00 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,

A handwritten signature in cursive script that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081410

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21081410-01	Field Blank	Drinking Wat		8/13/2021 10:15	8/14/2021 10:00	<input type="checkbox"/>

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: 21081410

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

<u>Units Reported</u>	<u>Description</u>
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081410

Case Narrative

Samples for the above noted Work Order were received on 08/14/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

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

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

Extractable Organics:

Batch 182190, Method E537 Mod, Sample LCS-182190: The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: FtS 10:2

No other deviations or anomalies were noted.

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 8/13/2021 10:15 AM

Work Order: 21081410
Lab ID: 21081410-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED			Method: E537 MOD	Prep: E537 Mod / 8/18/21	Analyst: AK		
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.87	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.62	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.84	4.6	ng/L	1	8/18/2021 19:44
Perfluorobutanesulfonic Acid (PFBS)	U		0.33	4.6	ng/L	1	8/18/2021 19:44
Perfluorobutanoic Acid (PFBA)	U		2.4	4.6	ng/L	1	8/18/2021 19:44
Perfluorodecanesulfonic Acid (PFDS)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluorodecanoic Acid (PFDA)	U		1.2	4.6	ng/L	1	8/18/2021 19:44
Perfluorododecanesulfonic Acid (PFDoS)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluorododecanoic Acid (PFDoA)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.53	4.6	ng/L	1	8/18/2021 19:44
Perfluoroheptanoic Acid (PFHpA)	U		0.41	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexadecanoic Acid (PFHxDA)	U		0.35	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexanesulfonic Acid (PFHxS)	U		0.34	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexanoic Acid (PFHxA)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
Perfluorononanesulfonic Acid (PFNS)	U		0.46	4.6	ng/L	1	8/18/2021 19:44
Perfluorononanoic Acid (PFNA)	U		0.81	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctadecanoic Acid (PFODA)	U		0.60	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctanesulfonamide (PFOSA)	U		0.66	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctanesulfonic Acid (PFOS)	U		0.83	1.9	ng/L	1	8/18/2021 19:44
Perfluorooctanoic Acid (PFOA)	U		0.59	1.9	ng/L	1	8/18/2021 19:44
Perfluoropentanesulfonic Acid (PFPeS)	U		0.52	4.6	ng/L	1	8/18/2021 19:44
Perfluoropentanoic Acid (PFPeA)	U		1.2	4.6	ng/L	1	8/18/2021 19:44
Perfluorotetradecanoic Acid (PFTeA)	U		2.5	4.6	ng/L	1	8/18/2021 19:44
Perfluorotridecanoic Acid (PFTriA)	U		0.72	4.6	ng/L	1	8/18/2021 19:44
Perfluoroundecanoic Acid (PFUnA)	U		0.91	4.6	ng/L	1	8/18/2021 19:44
N-ethylperfluoro-1-octanesulfonamide	U		1.1	4.6	ng/L	1	8/18/2021 19:44
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.58	4.6	ng/L	1	8/18/2021 19:44
N-Ethylperfluorooctanesulfonamidoethanol	U		0.48	4.6	ng/L	1	8/18/2021 19:44
N-methylperfluoro-1-octanesulfonamide	U		0.74	4.6	ng/L	1	8/18/2021 19:44

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

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 8/13/2021 10:15 AM

Work Order: 21081410
Lab ID: 21081410-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.60	4.6	ng/L	1	8/18/2021 19:44
N-Methylperfluorooctanesulfonamidoethanol	U		0.45	4.6	ng/L	1	8/18/2021 19:44
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.52	4.6	ng/L	1	8/18/2021 19:44
11Cl-Pf3OUdS	U		0.43	4.6	ng/L	1	8/18/2021 19:44
9Cl-PF3ONS	U		0.42	4.6	ng/L	1	8/18/2021 19:44
Surr: 13C2-FtS 4:2	79.2			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-FtS 6:2	96.4			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-FtS 8:2	104			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFDA	92.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFDoA	60.9			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFHxA	74.2			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFHxDA	74.6			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFTeA	76.5			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFUnA	103			50-150	%REC	1	8/18/2021 19:44
Surr: 13C3-HFPO-DA	75.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C3-PFBS	72.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFBA	72.3			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFHpA	105			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFOA	85.9			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFOS	81.1			50-150	%REC	1	8/18/2021 19:44
Surr: 13C5-PFNA	82.3			50-150	%REC	1	8/18/2021 19:44
Surr: 13C5-PFPeA	75.6			50-150	%REC	1	8/18/2021 19:44
Surr: 13C8-FOSA	87.8			50-150	%REC	1	8/18/2021 19:44
Surr: 18O2-PFHxS	61.9			50-150	%REC	1	8/18/2021 19:44
Surr: d5-N-EtFOSA	67.2			50-150	%REC	1	8/18/2021 19:44
Surr: d5-N-EtFOSAA	98.5			50-150	%REC	1	8/18/2021 19:44
Surr: d9-N-EtFOSE	73.4			50-150	%REC	1	8/18/2021 19:44
Surr: d3-N-MeFOSA	94.6			50-150	%REC	1	8/18/2021 19:44
Surr: d3-N-MeFOSAA	89.4			50-150	%REC	1	8/18/2021 19:44
Surr: d7-N-MeFOSE	65.6			50-150	%REC	1	8/18/2021 19:44

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **182190** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK		Sample ID: MBLK-182190-182190			Units: ng/L		Analysis Date: 8/18/2021 04:57 PM				
Client ID:		Run ID: LCMS1_210818B			SeqNo: 7678474		Prep Date: 8/18/2021		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 Acid	U	1.4	5.0								
Perfluorododecanoic Acid (PFDA)	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFHx)	U	0.44	5.0								
Perfluorohexadecanoic Acid (PFHx)	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx)	U	1.2	5.0								
Perfluoronanesulfonic Acid	U	0.5	5.0								
Perfluoronanoic Acid (PFNA)	U	0.87	5.0								
Perfluorooctadecanoic Acid (PFDA)	U	0.65	5.0								
Perfluorooctanesulfonamide (PFOS)	U	0.71	5.0								
Perfluorooctanesulfonic Acid (PFOS)	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA)	U	0.63	2.0								
Perfluoropentanesulfonic Acid	U	0.56	5.0								
Perfluoropentanoic Acid (PFPeA)	U	1.3	5.0								
Perfluorotetradecanoic Acid (PFDA)	U	2.6	5.0								
Perfluorotridecanoic Acid (PFTA)	U	0.77	5.0								
Perfluoroundecanoic Acid (PFUdA)	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfonate	U	1.2	5.0								
N-Ethylperfluorooctanesulfonate	U	0.63	5.0								
N-Ethylperfluorooctanesulfonate	U	0.52	5.0								
N-methylperfluoro-1-octanesulfonate	U	0.79	5.0								
N-Methylperfluorooctanesulfonate	U	0.64	5.0								
N-Methylperfluorooctanesulfonate	U	0.48	5.0								
Hexafluoropropylene oxide dimer	U	1.2	5.0								
4,8-Dioxa-3H-perfluorononanoic acid	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	93.04	0	0	149.4	0	62.3	50-150	0			
Surr: 13C2-FtS 6:2	114	0	0	152	0	75	50-150	0			
Surr: 13C2-FtS 8:2	114.4	0	0	153.3	0	74.6	50-150	0			
Surr: 13C2-PFDA	124.7	0	0	160	0	77.9	50-150	0			
Surr: 13C2-PFDoA	87.14	0	0	160	0	54.5	50-150	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21081410
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
<i>Surr: 13C2-PFHxA</i>	<i>106.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFHxDA</i>	<i>106.5</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFTeA</i>	<i>94.43</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>59</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFUnA</i>	<i>139</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>86.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>99.67</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>62.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>86.02</i>	<i>0</i>	<i>0</i>	<i>148.8</i>	<i>0</i>	<i>57.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>102.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>123.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>77.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>114.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>109.8</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>71.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>108.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>67.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>97.39</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>60.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>102.2</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>77.65</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>51.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>85.18</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>53.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>116.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>72.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>90.56</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>56.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>83.68</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>52.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>106.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>98.57</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>61.6</i>	<i>50-150</i>	<i>0</i>	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

LCS		Sample ID: LCS-182190-182190				Units: ng/L			Analysis Date: 8/18/2021 05:07 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678475		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	39.54	0.94	5.0	29.9	0	132	63-143	0			
Fluorotelomer Sulphonic Acid	36.45	0.66	5.0	30.3	0	120	64-140	0			
Fluorotelomer Sulphonic Acid	36.22	1.1	5.0	30.7	0	118	67-138	0			
Fluorotelomer Sulphonic Acid	50.64	0.9	5.0	30.8	0	164	40-160	0			S
Perfluorobutanoic Acid (PFBA)	33.55	2.6	5.0	32	0	105	73-129	0			
Perfluorodecanesulfonic Acid	32.15	1.4	5.0	30.8	0	104	53-142	0			
Perfluorodecanoic Acid (PFDA)	32.1	1.2	5.0	32	0	100	71-129	0			
Perfluorododecanesulfonic Acid	26.32	1.4	5.0	31	0	84.9	69-134	0			
Perfluorododecanoic Acid (PFDA)	29.46	1.4	5.0	32	0	92.1	72-134	0			
Perfluoroheptanesulfonic Acid	38.34	0.57	5.0	30.5	0	126	69-134	0			
Perfluoroheptanoic Acid (PFHpA)	38.44	0.44	5.0	32	0	120	72-130	0			
Perfluorohexadecanoic Acid (PFHxDA)	39.34	0.38	5.0	32	0	123	70-130	0			
Perfluorohexanesulfonic Acid	32.38	0.37	5.0	29.1	0	111	68-131	0			
Perfluorohexanoic Acid (PFHxA)	33.47	1.2	5.0	32	0	105	72-129	0			
Perfluoronanesulfonic Acid	35.34	0.5	5.0	30.7	0	115	69-127	0			
Perfluorononanoic Acid (PFNA)	32.2	0.87	5.0	32	0	101	69-130	0			
Perfluorooctanesulfonamide (PFOSA)	39.06	0.71	5.0	32	0	122	67-137	0			
Perfluorooctanesulfonic Acid	31.08	0.89	2.0	29.7	0	105	65-140	0			
Perfluorooctanoic Acid (PFOA)	26.18	0.63	2.0	32	0	81.8	71-133	0			
Perfluoropentanesulfonic Acid	32.31	0.56	5.0	30	0	108	71-127	0			
Perfluoropentanoic Acid (PFPeA)	39.4	1.3	5.0	32	0	123	72-129	0			
Perfluorotetradecanoic Acid (PFTrDA)	36.89	2.6	5.0	32	0	115	71-132	0			
Perfluorotridecanoic Acid (PFTeA)	44.96	0.77	5.0	32	0	140	65-144	0			
Perfluoroundecanoic Acid (PFUnA)	32.31	0.97	5.0	32	0	101	69-133	0			
N-Ethylperfluorooctanesulfonamide	30.37	0.63	5.0	32	0	94.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	35.06	0.52	5.0	32	0	110	70-130	0			
N-Methylperfluorooctanesulfonamide	37.4	0.64	5.0	32	0	117	65-136	0			
N-Methylperfluorooctanesulfonamide	35.33	0.48	5.0	32	0	110	68-141	0			
Hexafluoropropylene oxide dimer	39.41	1.2	5.0	32	0	123	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	29.65	0.56	5.0	30.1	0	98.5	70-130	0			
11Cl-Pf3OUdS	28.96	0.47	5.0	30.1	0	96.2	70-130	0			
9Cl-PF3ONS	30.51	0.45	5.0	29.8	0	102	70-130	0			
Surr: 13C2-FtS 4:2	96.75	0	0	149.4	0	64.7	50-150	0			
Surr: 13C2-FtS 6:2	116.6	0	0	152	0	76.7	50-150	0			
Surr: 13C2-FtS 8:2	113.9	0	0	153.3	0	74.3	50-150	0			
Surr: 13C2-PFDA	135.5	0	0	160	0	84.7	50-150	0			
Surr: 13C2-PFDoA	111.7	0	0	160	0	69.8	50-150	0			
Surr: 13C2-PFHxA	119.1	0	0	160	0	74.4	50-150	0			
Surr: 13C2-PFHxDA	108.3	0	0	160	0	67.7	50-150	0			
Surr: 13C2-PFTeA	104.6	0	0	160	0	65.4	50-150	0			
Surr: 13C2-PFUnA	155.9	0	0	160	0	97.5	50-150	0			
Surr: 13C3-HFPO-DA	98.46	0	0	160	0	61.5	50-150	0			
Surr: 13C3-PFBS	88.94	0	0	148.8	0	59.8	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C4-PFBA	120.9	0	0	160	0	75.6	50-150	0	
Surr: 13C4-PFHpA	119.1	0	0	160	0	74.4	50-150	0	
Surr: 13C4-PFOA	145.2	0	0	160	0	90.8	50-150	0	
Surr: 13C4-PFOS	120.9	0	0	152.8	0	79.1	50-150	0	
Surr: 13C5-PFNA	123.6	0	0	160	0	77.2	50-150	0	
Surr: 13C5-PFPeA	98.57	0	0	160	0	61.6	50-150	0	
Surr: 13C8-FOSA	105.4	0	0	160	0	65.9	50-150	0	
Surr: 18O2-PFHxS	102.8	0	0	151.2	0	68	50-150	0	
Surr: d5-N-EtFOSA	84.23	0	0	160	0	52.6	50-150	0	
Surr: d5-N-EtFOSAA	120.9	0	0	160	0	75.6	50-150	0	
Surr: d9-N-EtFOSE	100.6	0	0	160	0	62.9	50-150	0	
Surr: d3-N-MeFOSA	101.5	0	0	160	0	63.5	50-150	0	
Surr: d3-N-MeFOSAA	105	0	0	160	0	65.7	50-150	0	
Surr: d7-N-MeFOSE	110.1	0	0	160	0	68.8	50-150	0	

LCS		Sample ID: LCS-182190-182190			Units: ng/L		Analysis Date: 8/19/2021 11:42 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678856		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanesulfonic Acid (	35.59	0.35	5.0	28.3	0	126	72-130	0			
Perfluorooctadecanoic Acid (P	39.69	0.65	5.0	32	0	124	70-130	0			
N-Ethylperfluorooctanesulfona	37.92	0.52	5.0	32	0	119	70-130	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MS		Sample ID: 21081217-06AMS				Units: ng/L		Analysis Date: 8/18/2021 05:18 PM			
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678476		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	30.34	0.92	4.9	29.43	0	103	63-143	0			
Fluorotelomer Sulphonic Acid	32.83	0.65	4.9	29.82	2.223	103	64-140	0			
Fluorotelomer Sulphonic Acid	29.75	1.1	4.9	30.22	0.3387	97.3	67-138	0			
Fluorotelomer Sulphonic Acid	24.29	0.89	4.9	30.32	0	80.1	40-160	0			
Perfluorobutanesulfonic Acid	59.37	0.35	4.9	27.85	31.12	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	36.64	2.6	4.9	31.5	22.05	46.3	73-129	0			S
Perfluorodecanesulfonic Acid	29.55	1.3	4.9	30.32	0	97.5	53-142	0			
Perfluorodecanoic Acid (PFDA)	27.21	1.2	4.9	31.5	0.5387	84.7	71-129	0			
Perfluorododecanesulfonic Acid	22.32	1.4	4.9	30.51	0	73.1	69-134	0			
Perfluorododecanoic Acid (PFDA)	26	1.4	4.9	31.5	0	82.5	72-134	0			
Perfluoroheptanesulfonic Acid	41.17	0.56	4.9	30.02	10.21	103	69-134	0			
Perfluoroheptanoic Acid (PFHx)	42.35	0.43	4.9	31.5	12.74	94	72-130	0			
Perfluorohexadecanoic Acid (PFHx)	30.53	0.38	4.9	31.5	0	96.9	70-130	0			
Perfluorohexanesulfonic Acid	64.25	0.36	4.9	28.64	42.25	76.8	68-131	0			
Perfluorohexanoic Acid (PFHx)	36.98	1.2	4.9	31.5	11.81	79.9	72-129	0			
Perfluoronanesulfonic Acid	29.48	0.49	4.9	30.22	0	97.6	69-127	0			
Perfluorononanoic Acid (PFNA)	26.92	0.86	4.9	31.5	1.152	81.8	69-130	0			
Perfluorooctadecanoic Acid (PFDA)	31.3	0.64	4.9	31.5	0	99.4	70-130	0			
Perfluorooctanesulfonamide (PFOS)	32	0.7	4.9	31.5	0	102	67-137	0			
Perfluorooctanoic Acid (PFOA)	41.8	0.62	2.0	31.5	26.64	48.1	71-133	0			S
Perfluoropentanesulfonic Acid	44.37	0.55	4.9	29.53	16.47	94.5	71-127	0			
Perfluoropentanoic Acid (PFPeA)	36.74	1.3	4.9	31.5	11.03	81.7	72-129	0			
Perfluorotetradecanoic Acid (PFDA)	32.09	2.6	4.9	31.5	0	102	71-132	0			
Perfluorotridecanoic Acid (PFTA)	38.55	0.76	4.9	31.5	0	122	65-144	0			
Perfluoroundecanoic Acid (PFDA)	28.12	0.96	4.9	31.5	0	89.3	69-133	0			
N-ethylperfluoro-1-octanesulfonamide	34.25	1.1	4.9	31.5	0	109	70-130	0			
N-Ethylperfluorooctanesulfonamide	28.12	0.62	4.9	31.5	1.061	85.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	29.13	0.51	4.9	31.5	0	92.5	70-130	0			
N-methylperfluoro-1-octanesulfonamide	35.33	0.78	4.9	31.5	0	112	70-130	0			
N-Methylperfluorooctanesulfonamide	30.78	0.63	4.9	31.5	0	97.7	65-136	0			
N-Methylperfluorooctanesulfonamide	27.47	0.48	4.9	31.5	0	87.2	68-141	0			
Hexafluoropropylene oxide dimer	32.19	1.2	4.9	31.5	0	102	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	22.57	0.55	4.9	29.63	0	76.2	70-130	0			
11Cl-Pf3OUdS	24.25	0.46	4.9	29.63	0	81.8	70-130	0			
9Cl-PF3ONS	26.65	0.44	4.9	29.33	0	90.9	70-130	0			
Surr: 13C2-FtS 4:2	430.2	0	0	147.1	0	292	50-150	0			S
Surr: 13C2-FtS 6:2	292.3	0	0	149.6	0	195	50-150	0			S
Surr: 13C2-FtS 8:2	237.9	0	0	150.9	0	158	50-150	0			S
Surr: 13C2-PFDA	144.2	0	0	157.5	0	91.5	50-150	0			
Surr: 13C2-PFDoA	117.5	0	0	157.5	0	74.6	50-150	0			
Surr: 13C2-PFHxA	99.18	0	0	157.5	0	63	50-150	0			
Surr: 13C2-PFHxDA	110.6	0	0	157.5	0	70.2	50-150	0			
Surr: 13C2-PFTEA	98.54	0	0	157.5	0	62.6	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C2-PFUnA	152.3	0	0	157.5	0	96.7	50-150	0	
Surr: 13C3-HFPO-DA	78.4	0	0	157.5	0	49.8	50-150	0	S
Surr: 13C3-PFBS	93.17	0	0	146.5	0	63.6	50-150	0	
Surr: 13C4-PFBA	93.4	0	0	157.5	0	59.3	50-150	0	
Surr: 13C4-PFHpA	96.87	0	0	157.5	0	61.5	50-150	0	
Surr: 13C4-PFOA	120.3	0	0	157.5	0	76.4	50-150	0	
Surr: 13C4-PFOS	111.8	0	0	150.4	0	74.3	50-150	0	
Surr: 13C5-PFNA	133.7	0	0	157.5	0	84.9	50-150	0	
Surr: 13C5-PFPeA	81.17	0	0	157.5	0	51.5	50-150	0	
Surr: 13C8-FOSA	112.4	0	0	157.5	0	71.3	50-150	0	
Surr: 18O2-PFHxS	109.4	0	0	148.8	0	73.5	50-150	0	
Surr: d5-N-EtFOSA	92.4	0	0	157.5	0	58.7	50-150	0	
Surr: d5-N-EtFOSAA	145.3	0	0	157.5	0	92.3	50-150	0	
Surr: d9-N-EtFOSE	102.9	0	0	157.5	0	65.3	50-150	0	
Surr: d3-N-MeFOSA	105.3	0	0	157.5	0	66.9	50-150	0	
Surr: d3-N-MeFOSAA	134.5	0	0	157.5	0	85.4	50-150	0	
Surr: d7-N-MeFOSE	113.8	0	0	157.5	0	72.3	50-150	0	

MS		Sample ID: 21081217-06AMS			Units: ng/L		Analysis Date: 8/19/2021 11:53 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678857		Prep Date: 8/18/2021		DF: 10		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (I	310.2	8.8	20	29.23	443.3	-455	65-140	0			SO

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MSD		Sample ID: 21081217-06AMSD				Units: ng/L			Analysis Date: 8/18/2021 05:28 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678477		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.66	0.95	5.1	30.39	0	114	63-143	30.34	13.3	30	
Fluorotelomer Sulphonic Acid	38.17	0.67	5.1	30.79	2.223	117	64-140	32.83	15	30	
Fluorotelomer Sulphonic Acid	35.23	1.1	5.1	31.2	0.3387	112	67-138	29.75	16.9	30	
Fluorotelomer Sulphonic Acid	26.61	0.92	5.1	31.3	0	85	40-160	24.29	9.13	30	
Perfluorobutanesulfonic Acid	65.04	0.36	5.1	28.76	31.12	118	72-130	59.37	9.12	30	
Perfluorobutanoic Acid (PFBA)	38.63	2.6	5.1	32.52	22.05	51	73-129	36.64	5.29	30	S
Perfluorodecanesulfonic Acid	31.45	1.4	5.1	31.3	0	100	53-142	29.55	6.24	30	
Perfluorodecanoic Acid (PFDA)	33.05	1.3	5.1	32.52	0.5387	100	71-129	27.21	19.4	30	
Perfluorododecanesulfonic Acid	28.64	1.5	5.1	31.5	0	90.9	69-134	22.32	24.8	30	
Perfluorododecanoic Acid (PFDA)	29.7	1.5	5.1	32.52	0	91.3	72-134	26	13.3	30	
Perfluoroheptanesulfonic Acid	47.71	0.58	5.1	31	10.21	121	69-134	41.17	14.7	30	
Perfluoroheptanoic Acid (PFHx)	44.73	0.45	5.1	32.52	12.74	98.4	72-130	42.35	5.49	30	
Perfluorohexadecanoic Acid (PFHx)	35.76	0.39	5.1	32.52	0	110	70-130	30.53	15.8	30	
Perfluorohexanesulfonic Acid	70.46	0.37	5.1	29.57	42.25	95.4	68-131	64.25	9.22	30	
Perfluorohexanoic Acid (PFHx)	43.16	1.2	5.1	32.52	11.81	96.4	72-129	36.98	15.4	30	
Perfluorononanesulfonic Acid	36.06	0.5	5.1	31.2	0	116	69-127	29.48	20.1	30	
Perfluorononanoic Acid (PFNA)	32.02	0.88	5.1	32.52	1.152	94.9	69-130	26.92	17.3	30	
Perfluorooctadecanoic Acid (PFDA)	33.24	0.66	5.1	32.52	0	102	70-130	31.3	5.99	30	
Perfluorooctanesulfonamide (PFOS)	36.37	0.72	5.1	32.52	0	112	67-137	32	12.8	30	
Perfluorooctanoic Acid (PFOA)	45.07	0.64	2.0	32.52	26.64	56.7	71-133	41.8	7.53	30	S
Perfluoropentanesulfonic Acid	51.02	0.57	5.1	30.49	16.47	113	71-127	44.37	14	30	
Perfluoropentanoic Acid (PFPeA)	41.83	1.3	5.1	32.52	11.03	94.7	72-129	36.74	12.9	30	
Perfluorotetradecanoic Acid (PFDA)	38.19	2.7	5.1	32.52	0	117	71-132	32.09	17.3	30	
Perfluorotridecanoic Acid (PFTA)	40.65	0.78	5.1	32.52	0	125	65-144	38.55	5.3	30	
Perfluoroundecanoic Acid (PFDA)	34.16	0.99	5.1	32.52	0	105	69-133	28.12	19.4	30	
N-ethylperfluoro-1-octanesulfonate	38.89	1.2	5.1	32.52	0	120	70-130	34.25	12.7	30	
N-Ethylperfluorooctanesulfonate	32	0.64	5.1	32.52	1.061	95.1	61-135	28.12	12.9	30	
N-Ethylperfluorooctanesulfonate	34.66	0.53	5.1	32.52	0	107	70-130	29.13	17.4	30	
N-methylperfluoro-1-octanesulfonate	42.1	0.81	5.1	32.52	0	129	70-130	35.33	17.5	30	
N-Methylperfluorooctanesulfonate	38.1	0.65	5.1	32.52	0	117	65-136	30.78	21.3	30	
N-Methylperfluorooctanesulfonate	30.83	0.49	5.1	32.52	0	94.8	68-141	27.47	11.5	30	
Hexafluoropropylene oxide dimer	37.07	1.2	5.1	32.52	0	114	70-130	32.19	14.1	30	
4,8-Dioxa-3H-perfluorononanoic Acid	25.46	0.57	5.1	30.59	0	83.2	70-130	22.57	12.1	30	
11Cl-Pf3OUdS	30.27	0.47	5.1	30.59	0	98.9	70-130	24.25	22.1	30	
9Cl-PF3ONS	31.68	0.46	5.1	30.28	0	105	70-130	26.65	17.2	30	
Surr: 13C2-FtS 4:2	409	0	0	151.9	0	269	50-150	430.2	5.04	30	S
Surr: 13C2-FtS 6:2	289.7	0	0	154.5	0	188	50-150	292.3	0.895	30	S
Surr: 13C2-FtS 8:2	230.5	0	0	155.8	0	148	50-150	237.9	3.16	30	
Surr: 13C2-PFDA	139	0	0	162.6	0	85.5	50-150	144.2	3.63	30	
Surr: 13C2-PFDoA	121.9	0	0	162.6	0	75	50-150	117.5	3.63	30	
Surr: 13C2-PFHxA	94.58	0	0	162.6	0	58.2	50-150	99.18	4.75	30	
Surr: 13C2-PFHxDA	110.7	0	0	162.6	0	68.1	50-150	110.6	0.0868	30	
Surr: 13C2-PFTeA	98.41	0	0	162.6	0	60.5	50-150	98.54	0.134	30	

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

Client: Gannett Fleming, Inc.

QC BATCH REPORT

Work Order: 21081410

Project: WRR 55929.007

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod									
Surr: 13C2-PFUnA	150.5	0	0	162.6	0	92.5	50-150	152.3	1.19	30	
Surr: 13C3-HFPO-DA	73.66	0	0	162.6	0	45.3	50-150	78.4	6.24	30	S
Surr: 13C3-PFBS	90.75	0	0	151.2	0	60	50-150	93.17	2.64	30	
Surr: 13C4-PFBA	92.7	0	0	162.6	0	57	50-150	93.4	0.748	30	
Surr: 13C4-PFHpA	108	0	0	162.6	0	66.4	50-150	96.87	10.8	30	
Surr: 13C4-PFOA	120.9	0	0	162.6	0	74.4	50-150	120.3	0.533	30	
Surr: 13C4-PFOS	105	0	0	155.3	0	67.6	50-150	111.8	6.2	30	
Surr: 13C5-PFNA	129.3	0	0	162.6	0	79.5	50-150	133.7	3.35	30	
Surr: 13C5-PFPeA	79.27	0	0	162.6	0	48.8	50-150	81.17	2.37	30	S
Surr: 13C8-FOSA	110.9	0	0	162.6	0	68.2	50-150	112.4	1.32	30	
Surr: 18O2-PFHxS	103.2	0	0	153.7	0	67.2	50-150	109.4	5.8	30	
Surr: d5-N-EtFOSA	94.37	0	0	162.6	0	58	50-150	92.4	2.11	30	
Surr: d5-N-EtFOSAA	145.9	0	0	162.6	0	89.7	50-150	145.3	0.38	30	
Surr: d9-N-EtFOSE	100.5	0	0	162.6	0	61.8	50-150	102.9	2.28	30	
Surr: d3-N-MeFOSA	101.9	0	0	162.6	0	62.7	50-150	105.3	3.25	30	
Surr: d3-N-MeFOSAA	134.6	0	0	162.6	0	82.8	50-150	134.5	0.113	30	
Surr: d7-N-MeFOSE	109.8	0	0	162.6	0	67.5	50-150	113.8	3.57	30	

MSD		Sample ID: 21081217-06AMSD				Units: ng/L		Analysis Date: 8/19/2021 12:03 PM			
Client ID:		Run ID: LCMS1_210819A		SeqNo: 7678858		Prep Date: 8/18/2021		DF: 10			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (l	504.4	9.1	20	30.18	443.3	202	65-140	310.2	47.7	30	SRO

The following samples were analyzed in this batch: 21081410-01A

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

Chain of Custody Form

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

Page 1 of 1

COC ID: 229890

ALS Project Manager: JN

ALS Work Order #: 21081410

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	ALS 2024	Project Name	WRP	A	PFAS 537 Modified											
Work Order		Project Number	55929.007-FB	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	Address	8040 Excelsior Drive	E												
	Suite 303		Suite 303	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	asmillere@gnfnet.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	8-13-21	10:15	Water	-	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign Cliff Wright CEO		Shipment Method FedEx		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: Cliff Wright	Date: 8-13-21	Time: 13:30	Received by: FedEx	Notes:							
Relinquished by: FedEx	Date: 8/14/21	Time: 1000	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
Logged by (Laboratory):	Date: 8/16/21	Time: 1509	Checked by (Laboratory):	IR3	4.30e	<input type="checkbox"/> Level II Std QO	<input type="checkbox"/> TRRP CheckList				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035				<input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV							
				<input type="checkbox"/> Level IV SW646/CLP							
				<input type="checkbox"/> 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.

Sample Receipt Checklist

Client Name: **GANNETFLEMING - WI**

Date/Time Received: **14-Aug-21 10:00**

Work Order: **21081410**

Received by: **LYS**

Checklist completed by *Lydia Sweet* 16-Aug-21
eSignature Date

Reviewed by: *Jadi Blawie* 16-Aug-21
eSignature 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): 4.3/5.3c IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 8/16/2021 3:10:22 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:



VIA Federal Express

August 23, 2021

File #55929.007

[REDACTED]
5480 Wild Rose Lane
Eau Claire, WI 54701

Dear Neighbor of WRR Environmental Services:

On August 13, 2021, WRR Environmental Services Co., Inc.'s (WRR) environmental consultant, Gannett Fleming, Inc. (GF), collected a water sample from your home at 5480 Wild Rose Lane. 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-13. The water sample collected from your home in August 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 August 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.

August 23, 2021

-2-

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,

A handwritten signature in black ink, appearing to read "James Hager". The signature is fluid and cursive, with the first name "James" being larger and more prominent than the last name "Hager".

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

Enc.

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



23-Aug-2021

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

Re: **WRR 55929.007**

Work Order: **21081408**

Dear Anthony,

ALS Environmental received 1 sample on 14-Aug-2021 10:00 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,

A handwritten signature in cursive script that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081408

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21081408-01	PW-13	Drinking Wat		8/13/2021 10:30	8/14/2021 10:00	<input type="checkbox"/>

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: 21081408

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

<u>Units Reported</u>	<u>Description</u>
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081408

Case Narrative

Samples for the above noted Work Order were received on 08/14/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

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

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

Extractable Organics:

Batch 182190, Method E537 Mod, Sample LCS-182190: The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: FtS 10:2

No other deviations or anomalies were noted.

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-13
Collection Date: 8/13/2021 10:30 AM

Work Order: 21081408
Lab ID: 21081408-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED			Method: E537 MOD		Prep: E537 Mod / 8/18/21		Analyst: AK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.83	4.4	ng/L	1	8/18/2021 19:23
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.59	4.4	ng/L	1	8/18/2021 19:23
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.0	4.4	ng/L	1	8/18/2021 19:23
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.80	4.4	ng/L	1	8/18/2021 19:23
Perfluorobutanesulfonic Acid (PFBS)	U		0.31	4.4	ng/L	1	8/18/2021 19:23
Perfluorobutanoic Acid (PFBA)	U		2.3	4.4	ng/L	1	8/18/2021 19:23
Perfluorodecanesulfonic Acid (PFDS)	U		1.2	4.4	ng/L	1	8/18/2021 19:23
Perfluorodecanoic Acid (PFDA)	U		1.1	4.4	ng/L	1	8/18/2021 19:23
Perfluorododecanesulfonic Acid (PFDoS)	U		1.3	4.4	ng/L	1	8/18/2021 19:23
Perfluorododecanoic Acid (PFDoA)	U		1.3	4.4	ng/L	1	8/18/2021 19:23
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.50	4.4	ng/L	1	8/18/2021 19:23
Perfluoroheptanoic Acid (PFHpA)	U		0.39	4.4	ng/L	1	8/18/2021 19:23
Perfluoroheptadecanoic Acid (PFHxDA)	U		0.34	4.4	ng/L	1	8/18/2021 19:23
Perfluoroheptanesulfonic Acid (PFHxS)	U		0.33	4.4	ng/L	1	8/18/2021 19:23
Perfluoroheptanoic Acid (PFHxA)	U		1.1	4.4	ng/L	1	8/18/2021 19:23
Perfluorononanesulfonic Acid (PFNS)	U		0.44	4.4	ng/L	1	8/18/2021 19:23
Perfluorononanoic Acid (PFNA)	U		0.77	4.4	ng/L	1	8/18/2021 19:23
Perfluorooctadecanoic Acid (PFODA)	U		0.57	4.4	ng/L	1	8/18/2021 19:23
Perfluorooctanesulfonamide (PFOSA)	U		0.63	4.4	ng/L	1	8/18/2021 19:23
Perfluorooctanesulfonic Acid (PFOS)	U		0.79	1.8	ng/L	1	8/18/2021 19:23
Perfluorooctanoic Acid (PFOA)	U		0.56	1.8	ng/L	1	8/18/2021 19:23
Perfluoropentanesulfonic Acid (PFPeS)	U		0.49	4.4	ng/L	1	8/18/2021 19:23
Perfluoropentanoic Acid (PFPeA)	U		1.1	4.4	ng/L	1	8/18/2021 19:23
Perfluorotetradecanoic Acid (PFTeA)	U		2.3	4.4	ng/L	1	8/18/2021 19:23
Perfluorotridecanoic Acid (PFTriA)	U		0.68	4.4	ng/L	1	8/18/2021 19:23
Perfluoroundecanoic Acid (PFUnA)	U		0.86	4.4	ng/L	1	8/18/2021 19:23
N-ethylperfluoro-1-octanesulfonamide	U		1.0	4.4	ng/L	1	8/18/2021 19:23
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.55	4.4	ng/L	1	8/18/2021 19:23
N-Ethylperfluorooctanesulfonamidoethanol	U		0.46	4.4	ng/L	1	8/18/2021 19:23
N-methylperfluoro-1-octanesulfonamide	U		0.70	4.4	ng/L	1	8/18/2021 19:23

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

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: PW-13
Collection Date: 8/13/2021 10:30 AM

Work Order: 21081408
Lab ID: 21081408-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.57	4.4	ng/L	1	8/18/2021 19:23
N-Methylperfluorooctanesulfonamidoethanol	U		0.43	4.4	ng/L	1	8/18/2021 19:23
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.0	4.4	ng/L	1	8/18/2021 19:23
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.50	4.4	ng/L	1	8/18/2021 19:23
11Cl-Pf3OUdS	U		0.41	4.4	ng/L	1	8/18/2021 19:23
9Cl-PF3ONS	U		0.40	4.4	ng/L	1	8/18/2021 19:23
Surr: 13C2-FtS 4:2	75.7			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-FtS 6:2	82.0			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-FtS 8:2	83.0			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-PFDA	76.6			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-PFDoA	72.6			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-PFHxA	73.9			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-PFHxDA	76.3			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-PFTeA	70.5			50-150	%REC	1	8/18/2021 19:23
Surr: 13C2-PFUnA	78.8			50-150	%REC	1	8/18/2021 19:23
Surr: 13C3-HFPO-DA	67.1			50-150	%REC	1	8/18/2021 19:23
Surr: 13C3-PFBS	71.8			50-150	%REC	1	8/18/2021 19:23
Surr: 13C4-PFBA	69.0			50-150	%REC	1	8/18/2021 19:23
Surr: 13C4-PFHpA	81.5			50-150	%REC	1	8/18/2021 19:23
Surr: 13C4-PFOA	80.9			50-150	%REC	1	8/18/2021 19:23
Surr: 13C4-PFOS	69.8			50-150	%REC	1	8/18/2021 19:23
Surr: 13C5-PFNA	82.7			50-150	%REC	1	8/18/2021 19:23
Surr: 13C5-PFPeA	71.5			50-150	%REC	1	8/18/2021 19:23
Surr: 13C8-FOSA	71.5			50-150	%REC	1	8/18/2021 19:23
Surr: 18O2-PFHxS	75.3			50-150	%REC	1	8/18/2021 19:23
Surr: d5-N-EtFOSA	63.7			50-150	%REC	1	8/18/2021 19:23
Surr: d5-N-EtFOSAA	75.2			50-150	%REC	1	8/18/2021 19:23
Surr: d9-N-EtFOSE	68.5			50-150	%REC	1	8/18/2021 19:23
Surr: d3-N-MeFOSA	68.7			50-150	%REC	1	8/18/2021 19:23
Surr: d3-N-MeFOSAA	66.6			50-150	%REC	1	8/18/2021 19:23
Surr: d7-N-MeFOSE	75.7			50-150	%REC	1	8/18/2021 19:23

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

Client: Gannett Fleming, Inc.
 Work Order: 21081408
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **182190** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK		Sample ID: MBLK-182190-182190			Units: ng/L			Analysis Date: 8/18/2021 04:57 PM			
Client ID:		Run ID: LCMS1_210818B			SeqNo: 7678474			Prep Date: 8/18/2021		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 Acid	U	1.4	5.0								
Perfluorododecanoic Acid (PFDDA)	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFH7A)	U	0.44	5.0								
Perfluorohexadecanoic Acid (PFH16A)	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFH6A)	U	1.2	5.0								
Perfluoronanesulfonic Acid	U	0.5	5.0								
Perfluoronanoic Acid (PFNA)	U	0.87	5.0								
Perfluorooctadecanoic Acid (PFH18A)	U	0.65	5.0								
Perfluorooctanesulfonamide (PFOS)	U	0.71	5.0								
Perfluorooctanesulfonic Acid (PFOS)	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA)	U	0.63	2.0								
Perfluoropentanesulfonic Acid	U	0.56	5.0								
Perfluoropentanoic Acid (PFPeA)	U	1.3	5.0								
Perfluorotetradecanoic Acid (PFH14A)	U	2.6	5.0								
Perfluorotridecanoic Acid (PFH13A)	U	0.77	5.0								
Perfluoroundecanoic Acid (PFH11A)	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfonate	U	1.2	5.0								
N-Ethylperfluorooctanesulfonate	U	0.63	5.0								
N-Ethylperfluorooctanesulfonate	U	0.52	5.0								
N-methylperfluoro-1-octanesulfonate	U	0.79	5.0								
N-Methylperfluorooctanesulfonate	U	0.64	5.0								
N-Methylperfluorooctanesulfonate	U	0.48	5.0								
Hexafluoropropylene oxide dimer	U	1.2	5.0								
4,8-Dioxa-3H-perfluorononane	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	93.04	0	0	149.4	0	62.3	50-150	0			
Surr: 13C2-FtS 6:2	114	0	0	152	0	75	50-150	0			
Surr: 13C2-FtS 8:2	114.4	0	0	153.3	0	74.6	50-150	0			
Surr: 13C2-PFDA	124.7	0	0	160	0	77.9	50-150	0			
Surr: 13C2-PFDoA	87.14	0	0	160	0	54.5	50-150	0			

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

Client: Gannett Fleming, Inc.

Work Order: 21081408

Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
<i>Surr: 13C2-PFHxA</i>	<i>106.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFHxDA</i>	<i>106.5</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFTeA</i>	<i>94.43</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>59</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFUnA</i>	<i>139</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>86.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>99.67</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>62.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>86.02</i>	<i>0</i>	<i>0</i>	<i>148.8</i>	<i>0</i>	<i>57.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>102.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>123.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>77.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>114.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>109.8</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>71.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>108.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>67.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>97.39</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>60.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>102.2</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>77.65</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>51.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>85.18</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>53.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>116.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>72.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>90.56</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>56.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>83.68</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>52.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>106.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>98.57</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>61.6</i>	<i>50-150</i>	<i>0</i>	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081408
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

LCS		Sample ID: LCS-182190-182190				Units: ng/L			Analysis Date: 8/18/2021 05:07 PM		
Client ID:		Run ID: LCMS1_210818B			SeqNo: 7678475		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	39.54	0.94	5.0	29.9	0	132	63-143	0			
Fluorotelomer Sulphonic Acid	36.45	0.66	5.0	30.3	0	120	64-140	0			
Fluorotelomer Sulphonic Acid	36.22	1.1	5.0	30.7	0	118	67-138	0			
Fluorotelomer Sulphonic Acid	50.64	0.9	5.0	30.8	0	164	40-160	0			S
Perfluorobutanoic Acid (PFBA)	33.55	2.6	5.0	32	0	105	73-129	0			
Perfluorodecanesulfonic Acid	32.15	1.4	5.0	30.8	0	104	53-142	0			
Perfluorodecanoic Acid (PFDA)	32.1	1.2	5.0	32	0	100	71-129	0			
Perfluorododecanesulfonic Acid	26.32	1.4	5.0	31	0	84.9	69-134	0			
Perfluorododecanoic Acid (PFDA)	29.46	1.4	5.0	32	0	92.1	72-134	0			
Perfluoroheptanesulfonic Acid	38.34	0.57	5.0	30.5	0	126	69-134	0			
Perfluoroheptanoic Acid (PFHpA)	38.44	0.44	5.0	32	0	120	72-130	0			
Perfluorohexadecanoic Acid (PFHxDA)	39.34	0.38	5.0	32	0	123	70-130	0			
Perfluorohexanesulfonic Acid	32.38	0.37	5.0	29.1	0	111	68-131	0			
Perfluorohexanoic Acid (PFHxA)	33.47	1.2	5.0	32	0	105	72-129	0			
Perfluoronanesulfonic Acid	35.34	0.5	5.0	30.7	0	115	69-127	0			
Perfluorononanoic Acid (PFNA)	32.2	0.87	5.0	32	0	101	69-130	0			
Perfluorooctanesulfonamide (PFOSA)	39.06	0.71	5.0	32	0	122	67-137	0			
Perfluorooctanesulfonic Acid	31.08	0.89	2.0	29.7	0	105	65-140	0			
Perfluorooctanoic Acid (PFOA)	26.18	0.63	2.0	32	0	81.8	71-133	0			
Perfluoropentanesulfonic Acid	32.31	0.56	5.0	30	0	108	71-127	0			
Perfluoropentanoic Acid (PFPA)	39.4	1.3	5.0	32	0	123	72-129	0			
Perfluorotetradecanoic Acid (PFTrDA)	36.89	2.6	5.0	32	0	115	71-132	0			
Perfluorotridecanoic Acid (PFTeA)	44.96	0.77	5.0	32	0	140	65-144	0			
Perfluoroundecanoic Acid (PFUnA)	32.31	0.97	5.0	32	0	101	69-133	0			
N-Ethylperfluorooctanesulfonamide	30.37	0.63	5.0	32	0	94.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	35.06	0.52	5.0	32	0	110	70-130	0			
N-Methylperfluorooctanesulfonamide	37.4	0.64	5.0	32	0	117	65-136	0			
N-Methylperfluorooctanesulfonamide	35.33	0.48	5.0	32	0	110	68-141	0			
Hexafluoropropylene oxide dimer	39.41	1.2	5.0	32	0	123	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	29.65	0.56	5.0	30.1	0	98.5	70-130	0			
11Cl-Pf3OUdS	28.96	0.47	5.0	30.1	0	96.2	70-130	0			
9Cl-PF3ONS	30.51	0.45	5.0	29.8	0	102	70-130	0			
Surr: 13C2-FtS 4:2	96.75	0	0	149.4	0	64.7	50-150	0			
Surr: 13C2-FtS 6:2	116.6	0	0	152	0	76.7	50-150	0			
Surr: 13C2-FtS 8:2	113.9	0	0	153.3	0	74.3	50-150	0			
Surr: 13C2-PFDA	135.5	0	0	160	0	84.7	50-150	0			
Surr: 13C2-PFDoA	111.7	0	0	160	0	69.8	50-150	0			
Surr: 13C2-PFHxA	119.1	0	0	160	0	74.4	50-150	0			
Surr: 13C2-PFHxDA	108.3	0	0	160	0	67.7	50-150	0			
Surr: 13C2-PFTeA	104.6	0	0	160	0	65.4	50-150	0			
Surr: 13C2-PFUnA	155.9	0	0	160	0	97.5	50-150	0			
Surr: 13C3-HFPO-DA	98.46	0	0	160	0	61.5	50-150	0			
Surr: 13C3-PFBS	88.94	0	0	148.8	0	59.8	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081408
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QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C4-PFBA	120.9	0	0	160	0	75.6	50-150	0	
Surr: 13C4-PFHpA	119.1	0	0	160	0	74.4	50-150	0	
Surr: 13C4-PFOA	145.2	0	0	160	0	90.8	50-150	0	
Surr: 13C4-PFOS	120.9	0	0	152.8	0	79.1	50-150	0	
Surr: 13C5-PFNA	123.6	0	0	160	0	77.2	50-150	0	
Surr: 13C5-PFPeA	98.57	0	0	160	0	61.6	50-150	0	
Surr: 13C8-FOSA	105.4	0	0	160	0	65.9	50-150	0	
Surr: 18O2-PFHxS	102.8	0	0	151.2	0	68	50-150	0	
Surr: d5-N-EtFOSA	84.23	0	0	160	0	52.6	50-150	0	
Surr: d5-N-EtFOSAA	120.9	0	0	160	0	75.6	50-150	0	
Surr: d9-N-EtFOSE	100.6	0	0	160	0	62.9	50-150	0	
Surr: d3-N-MeFOSA	101.5	0	0	160	0	63.5	50-150	0	
Surr: d3-N-MeFOSAA	105	0	0	160	0	65.7	50-150	0	
Surr: d7-N-MeFOSE	110.1	0	0	160	0	68.8	50-150	0	

LCS		Sample ID: LCS-182190-182190			Units: ng/L		Analysis Date: 8/19/2021 11:42 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678856		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanesulfonic Acid (	35.59	0.35	5.0	28.3	0	126	72-130	0			
Perfluorooctadecanoic Acid (P	39.69	0.65	5.0	32	0	124	70-130	0			
N-Ethylperfluorooctanesulfona	37.92	0.52	5.0	32	0	119	70-130	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081408
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MS		Sample ID: 21081217-06AMS				Units: ng/L		Analysis Date: 8/18/2021 05:18 PM			
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678476		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	30.34	0.92	4.9	29.43	0	103	63-143	0			
Fluorotelomer Sulphonic Acid	32.83	0.65	4.9	29.82	2.223	103	64-140	0			
Fluorotelomer Sulphonic Acid	29.75	1.1	4.9	30.22	0.3387	97.3	67-138	0			
Fluorotelomer Sulphonic Acid	24.29	0.89	4.9	30.32	0	80.1	40-160	0			
Perfluorobutanesulfonic Acid	59.37	0.35	4.9	27.85	31.12	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	36.64	2.6	4.9	31.5	22.05	46.3	73-129	0			S
Perfluorodecanesulfonic Acid	29.55	1.3	4.9	30.32	0	97.5	53-142	0			
Perfluorodecanoic Acid (PFDA)	27.21	1.2	4.9	31.5	0.5387	84.7	71-129	0			
Perfluorododecanesulfonic Acid	22.32	1.4	4.9	30.51	0	73.1	69-134	0			
Perfluorododecanoic Acid (PFDA)	26	1.4	4.9	31.5	0	82.5	72-134	0			
Perfluoroheptanesulfonic Acid	41.17	0.56	4.9	30.02	10.21	103	69-134	0			
Perfluoroheptanoic Acid (PFH7)	42.35	0.43	4.9	31.5	12.74	94	72-130	0			
Perfluorohexadecanoic Acid (PFH16)	30.53	0.38	4.9	31.5	0	96.9	70-130	0			
Perfluorohexanesulfonic Acid	64.25	0.36	4.9	28.64	42.25	76.8	68-131	0			
Perfluorohexanoic Acid (PFH6)	36.98	1.2	4.9	31.5	11.81	79.9	72-129	0			
Perfluoronanesulfonic Acid	29.48	0.49	4.9	30.22	0	97.6	69-127	0			
Perfluorononanoic Acid (PFNA)	26.92	0.86	4.9	31.5	1.152	81.8	69-130	0			
Perfluorooctadecanoic Acid (PFDA)	31.3	0.64	4.9	31.5	0	99.4	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	32	0.7	4.9	31.5	0	102	67-137	0			
Perfluorooctanoic Acid (PFOA)	41.8	0.62	2.0	31.5	26.64	48.1	71-133	0			S
Perfluoropentanesulfonic Acid	44.37	0.55	4.9	29.53	16.47	94.5	71-127	0			
Perfluoropentanoic Acid (PFPeA)	36.74	1.3	4.9	31.5	11.03	81.7	72-129	0			
Perfluorotetradecanoic Acid (PFDA)	32.09	2.6	4.9	31.5	0	102	71-132	0			
Perfluorotridecanoic Acid (PFTA)	38.55	0.76	4.9	31.5	0	122	65-144	0			
Perfluoroundecanoic Acid (PFDA)	28.12	0.96	4.9	31.5	0	89.3	69-133	0			
N-ethylperfluoro-1-octanesulfonate	34.25	1.1	4.9	31.5	0	109	70-130	0			
N-Ethylperfluorooctanesulfonate	28.12	0.62	4.9	31.5	1.061	85.9	61-135	0			
N-Ethylperfluorooctanesulfonate	29.13	0.51	4.9	31.5	0	92.5	70-130	0			
N-methylperfluoro-1-octanesulfonate	35.33	0.78	4.9	31.5	0	112	70-130	0			
N-Methylperfluorooctanesulfonate	30.78	0.63	4.9	31.5	0	97.7	65-136	0			
N-Methylperfluorooctanesulfonate	27.47	0.48	4.9	31.5	0	87.2	68-141	0			
Hexafluoropropylene oxide dimer	32.19	1.2	4.9	31.5	0	102	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	22.57	0.55	4.9	29.63	0	76.2	70-130	0			
11Cl-Pf3OUdS	24.25	0.46	4.9	29.63	0	81.8	70-130	0			
9Cl-PF3ONS	26.65	0.44	4.9	29.33	0	90.9	70-130	0			
Surr: 13C2-FtS 4:2	430.2	0	0	147.1	0	292	50-150	0			S
Surr: 13C2-FtS 6:2	292.3	0	0	149.6	0	195	50-150	0			S
Surr: 13C2-FtS 8:2	237.9	0	0	150.9	0	158	50-150	0			S
Surr: 13C2-PFDA	144.2	0	0	157.5	0	91.5	50-150	0			
Surr: 13C2-PFDoA	117.5	0	0	157.5	0	74.6	50-150	0			
Surr: 13C2-PFHxA	99.18	0	0	157.5	0	63	50-150	0			
Surr: 13C2-PFHxDA	110.6	0	0	157.5	0	70.2	50-150	0			
Surr: 13C2-PFTeA	98.54	0	0	157.5	0	62.6	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081408
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C2-PFUnA	152.3	0	0	157.5	0	96.7	50-150	0	
Surr: 13C3-HFPO-DA	78.4	0	0	157.5	0	49.8	50-150	0	S
Surr: 13C3-PFBS	93.17	0	0	146.5	0	63.6	50-150	0	
Surr: 13C4-PFBA	93.4	0	0	157.5	0	59.3	50-150	0	
Surr: 13C4-PFHpA	96.87	0	0	157.5	0	61.5	50-150	0	
Surr: 13C4-PFOA	120.3	0	0	157.5	0	76.4	50-150	0	
Surr: 13C4-PFOS	111.8	0	0	150.4	0	74.3	50-150	0	
Surr: 13C5-PFNA	133.7	0	0	157.5	0	84.9	50-150	0	
Surr: 13C5-PFPeA	81.17	0	0	157.5	0	51.5	50-150	0	
Surr: 13C8-FOSA	112.4	0	0	157.5	0	71.3	50-150	0	
Surr: 18O2-PFHxS	109.4	0	0	148.8	0	73.5	50-150	0	
Surr: d5-N-EtFOSA	92.4	0	0	157.5	0	58.7	50-150	0	
Surr: d5-N-EtFOSAA	145.3	0	0	157.5	0	92.3	50-150	0	
Surr: d9-N-EtFOSE	102.9	0	0	157.5	0	65.3	50-150	0	
Surr: d3-N-MeFOSA	105.3	0	0	157.5	0	66.9	50-150	0	
Surr: d3-N-MeFOSAA	134.5	0	0	157.5	0	85.4	50-150	0	
Surr: d7-N-MeFOSE	113.8	0	0	157.5	0	72.3	50-150	0	

MS		Sample ID: 21081217-06AMS			Units: ng/L		Analysis Date: 8/19/2021 11:53 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678857		Prep Date: 8/18/2021		DF: 10		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (I	310.2	8.8	20	29.23	443.3	-455	65-140	0			SO

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

Client: Gannett Fleming, Inc.
 Work Order: 21081408
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MSD		Sample ID: 21081217-06AMSD				Units: ng/L			Analysis Date: 8/18/2021 05:28 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678477		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.66	0.95	5.1	30.39	0	114	63-143	30.34	13.3	30	
Fluorotelomer Sulphonic Acid	38.17	0.67	5.1	30.79	2.223	117	64-140	32.83	15	30	
Fluorotelomer Sulphonic Acid	35.23	1.1	5.1	31.2	0.3387	112	67-138	29.75	16.9	30	
Fluorotelomer Sulphonic Acid	26.61	0.92	5.1	31.3	0	85	40-160	24.29	9.13	30	
Perfluorobutanesulfonic Acid	65.04	0.36	5.1	28.76	31.12	118	72-130	59.37	9.12	30	
Perfluorobutanoic Acid (PFBA)	38.63	2.6	5.1	32.52	22.05	51	73-129	36.64	5.29	30	S
Perfluorodecanesulfonic Acid	31.45	1.4	5.1	31.3	0	100	53-142	29.55	6.24	30	
Perfluorodecanoic Acid (PFDA)	33.05	1.3	5.1	32.52	0.5387	100	71-129	27.21	19.4	30	
Perfluorododecanesulfonic Acid	28.64	1.5	5.1	31.5	0	90.9	69-134	22.32	24.8	30	
Perfluorododecanoic Acid (PFDA)	29.7	1.5	5.1	32.52	0	91.3	72-134	26	13.3	30	
Perfluoroheptanesulfonic Acid	47.71	0.58	5.1	31	10.21	121	69-134	41.17	14.7	30	
Perfluoroheptanoic Acid (PFHx)	44.73	0.45	5.1	32.52	12.74	98.4	72-130	42.35	5.49	30	
Perfluorohexadecanoic Acid (PFHx)	35.76	0.39	5.1	32.52	0	110	70-130	30.53	15.8	30	
Perfluorohexanesulfonic Acid	70.46	0.37	5.1	29.57	42.25	95.4	68-131	64.25	9.22	30	
Perfluorohexanoic Acid (PFHx)	43.16	1.2	5.1	32.52	11.81	96.4	72-129	36.98	15.4	30	
Perfluorononanesulfonic Acid	36.06	0.5	5.1	31.2	0	116	69-127	29.48	20.1	30	
Perfluorononanoic Acid (PFNA)	32.02	0.88	5.1	32.52	1.152	94.9	69-130	26.92	17.3	30	
Perfluorooctadecanoic Acid (PFDA)	33.24	0.66	5.1	32.52	0	102	70-130	31.3	5.99	30	
Perfluorooctanesulfonamide (PFOS)	36.37	0.72	5.1	32.52	0	112	67-137	32	12.8	30	
Perfluorooctanoic Acid (PFOA)	45.07	0.64	2.0	32.52	26.64	56.7	71-133	41.8	7.53	30	S
Perfluoropentanesulfonic Acid	51.02	0.57	5.1	30.49	16.47	113	71-127	44.37	14	30	
Perfluoropentanoic Acid (PFPeA)	41.83	1.3	5.1	32.52	11.03	94.7	72-129	36.74	12.9	30	
Perfluorotetradecanoic Acid (PFDA)	38.19	2.7	5.1	32.52	0	117	71-132	32.09	17.3	30	
Perfluorotridecanoic Acid (PFTA)	40.65	0.78	5.1	32.52	0	125	65-144	38.55	5.3	30	
Perfluoroundecanoic Acid (PFDA)	34.16	0.99	5.1	32.52	0	105	69-133	28.12	19.4	30	
N-ethylperfluoro-1-octanesulfonate	38.89	1.2	5.1	32.52	0	120	70-130	34.25	12.7	30	
N-Ethylperfluorooctanesulfonate	32	0.64	5.1	32.52	1.061	95.1	61-135	28.12	12.9	30	
N-Ethylperfluorooctanesulfonate	34.66	0.53	5.1	32.52	0	107	70-130	29.13	17.4	30	
N-methylperfluoro-1-octanesulfonate	42.1	0.81	5.1	32.52	0	129	70-130	35.33	17.5	30	
N-Methylperfluorooctanesulfonate	38.1	0.65	5.1	32.52	0	117	65-136	30.78	21.3	30	
N-Methylperfluorooctanesulfonate	30.83	0.49	5.1	32.52	0	94.8	68-141	27.47	11.5	30	
Hexafluoropropylene oxide dimer	37.07	1.2	5.1	32.52	0	114	70-130	32.19	14.1	30	
4,8-Dioxa-3H-perfluorononanoic Acid	25.46	0.57	5.1	30.59	0	83.2	70-130	22.57	12.1	30	
11Cl-Pf3OUdS	30.27	0.47	5.1	30.59	0	98.9	70-130	24.25	22.1	30	
9Cl-PF3ONS	31.68	0.46	5.1	30.28	0	105	70-130	26.65	17.2	30	
Surr: 13C2-FtS 4:2	409	0	0	151.9	0	269	50-150	430.2	5.04	30	S
Surr: 13C2-FtS 6:2	289.7	0	0	154.5	0	188	50-150	292.3	0.895	30	S
Surr: 13C2-FtS 8:2	230.5	0	0	155.8	0	148	50-150	237.9	3.16	30	
Surr: 13C2-PFDA	139	0	0	162.6	0	85.5	50-150	144.2	3.63	30	
Surr: 13C2-PFDoA	121.9	0	0	162.6	0	75	50-150	117.5	3.63	30	
Surr: 13C2-PFHxA	94.58	0	0	162.6	0	58.2	50-150	99.18	4.75	30	
Surr: 13C2-PFHxDA	110.7	0	0	162.6	0	68.1	50-150	110.6	0.0868	30	
Surr: 13C2-PFTeA	98.41	0	0	162.6	0	60.5	50-150	98.54	0.134	30	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081408
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod									
Surr: 13C2-PFUnA	150.5	0	0	162.6	0	92.5	50-150	152.3	1.19	30	
Surr: 13C3-HFPO-DA	73.66	0	0	162.6	0	45.3	50-150	78.4	6.24	30	S
Surr: 13C3-PFBS	90.75	0	0	151.2	0	60	50-150	93.17	2.64	30	
Surr: 13C4-PFBA	92.7	0	0	162.6	0	57	50-150	93.4	0.748	30	
Surr: 13C4-PFHpA	108	0	0	162.6	0	66.4	50-150	96.87	10.8	30	
Surr: 13C4-PFOA	120.9	0	0	162.6	0	74.4	50-150	120.3	0.533	30	
Surr: 13C4-PFOS	105	0	0	155.3	0	67.6	50-150	111.8	6.2	30	
Surr: 13C5-PFNA	129.3	0	0	162.6	0	79.5	50-150	133.7	3.35	30	
Surr: 13C5-PFPeA	79.27	0	0	162.6	0	48.8	50-150	81.17	2.37	30	S
Surr: 13C8-FOSA	110.9	0	0	162.6	0	68.2	50-150	112.4	1.32	30	
Surr: 18O2-PFHxS	103.2	0	0	153.7	0	67.2	50-150	109.4	5.8	30	
Surr: d5-N-EtFOSA	94.37	0	0	162.6	0	58	50-150	92.4	2.11	30	
Surr: d5-N-EtFOSAA	145.9	0	0	162.6	0	89.7	50-150	145.3	0.38	30	
Surr: d9-N-EtFOSE	100.5	0	0	162.6	0	61.8	50-150	102.9	2.28	30	
Surr: d3-N-MeFOSA	101.9	0	0	162.6	0	62.7	50-150	105.3	3.25	30	
Surr: d3-N-MeFOSAA	134.6	0	0	162.6	0	82.8	50-150	134.5	0.113	30	
Surr: d7-N-MeFOSE	109.8	0	0	162.6	0	67.5	50-150	113.8	3.57	30	

MSD		Sample ID: 21081217-06AMSD				Units: ng/L		Analysis Date: 8/19/2021 12:03 PM			
Client ID:		Run ID: LCMS1_210819A		SeqNo: 7678858		Prep Date: 8/18/2021		DF: 10			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (l	504.4	9.1	20	30.18	443.3	202	65-140	310.2	47.7	30	SRO

The following samples were analyzed in this batch: 21081408-01A



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

Chain of Custody Form

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

Page 1 of 1

COC ID: 229894

ALS Project Manager: *JM*

ALS Work Order #: 21081408

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	<i>ALS 2021</i>	Project Name	<i>WFR</i>	A	<i>PFAS 537 Modified</i>											
Work Order		Project Number	<i>95929.007-PW13</i>	B												
Company Name	Gannett Fleming, Inc	Bill To Company	Gannett Fleming, Inc	C												
Send Report To	<i>Tony Mider</i>	Invoice Attn	Accounts Payable	D												
Address	8040 Excelsior Drive	Address	8040 Excelsior Drive	E												
	Suite 303		Suite 303	F												
City/State/Zip	Madison, WI 53717-1338	City/State/Zip	Madison, WI 53717-1338	G												
Phone	(608) 336-1500	Phone	(608) 336-1500	H												
Fax		Fax		I												
e-Mail Address	<i>aw.mider@gft.com</i>	e-Mail Address		J												

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	<i>PW-13</i>	<i>8.13.21</i>	<i>1030</i>	<i>DVO</i>	<i>-</i>	<i>2</i>	<i>X</i>										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign <i>Cliff Wright</i>		Shipment Method <i>FedEx</i>		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: <i>CW</i>	Date: <i>8.13.21</i>	Time: <i>1300</i>	Received by: <i>FedEx</i>	Notes:							
Relinquished by: <i>FedEx</i>	Date: <i>8/14/21</i>	Time: <i>1000</i>	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
Logged by (Laboratory): <i>A</i>	Date: <i>8/16/21</i>	Time: <i>1506</i>	Checked by (Laboratory):	<i>IR3</i>	<i>4.30C</i>	<input type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP CheckList	<input type="checkbox"/> Level III Std QC/Raw Data	<input type="checkbox"/> TRRP Level IV	<input type="checkbox"/> Level IV SW846/CLP	<input type="checkbox"/> Other:
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O 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.

Sample Receipt Checklist

Client Name: **GANNETT FLEMING - WI**

Date/Time Received: **14-Aug-21 10:00**

Work Order: **21081408**

Received by: **LYS**

Checklist completed by *Lydia Sweet* 16-Aug-21
eSignature Date

Reviewed by: *Jodi Blawie* 16-Aug-21
eSignature 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):

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

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:



23-Aug-2021

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

Re: **WRR 55929.007**

Work Order: **21081410**

Dear Anthony,

ALS Environmental received 1 sample on 14-Aug-2021 10:00 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,

A handwritten signature in cursive script that reads "Jodi Blouw".

Electronically approved by: Jodi Blouw

Jodi Blouw

Report of Laboratory Analysis

Certificate No: WI: 399084510

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

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081410

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21081410-01	Field Blank	Drinking Wat		8/13/2021 10:15	8/14/2021 10:00	<input type="checkbox"/>

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
WorkOrder: 21081410

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

<u>Units Reported</u>	<u>Description</u>
ng/L	Nanograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Work Order: 21081410

Case Narrative

Samples for the above noted Work Order were received on 08/14/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

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

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

Extractable Organics:

Batch 182190, Method E537 Mod, Sample LCS-182190: The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: FtS 10:2

No other deviations or anomalies were noted.

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 8/13/2021 10:15 AM

Work Order: 21081410
Lab ID: 21081410-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY EPA 537 MODIFIED			Method: E537 MOD		Prep: E537 Mod / 8/18/21		Analyst: AK
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		0.87	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		0.62	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
Fluorotelomer Sulphonic Acid 10:2 (FtS 10:2)	U		0.84	4.6	ng/L	1	8/18/2021 19:44
Perfluorobutanesulfonic Acid (PFBS)	U		0.33	4.6	ng/L	1	8/18/2021 19:44
Perfluorobutanoic Acid (PFBA)	U		2.4	4.6	ng/L	1	8/18/2021 19:44
Perfluorodecanesulfonic Acid (PFDS)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluorodecanoic Acid (PFDA)	U		1.2	4.6	ng/L	1	8/18/2021 19:44
Perfluorododecanesulfonic Acid (PFDoS)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluorododecanoic Acid (PFDoA)	U		1.3	4.6	ng/L	1	8/18/2021 19:44
Perfluoroheptanesulfonic Acid (PFHpS)	U		0.53	4.6	ng/L	1	8/18/2021 19:44
Perfluoroheptanoic Acid (PFHpA)	U		0.41	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexadecanoic Acid (PFHxDA)	U		0.35	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexanesulfonic Acid (PFHxS)	U		0.34	4.6	ng/L	1	8/18/2021 19:44
Perfluorohexanoic Acid (PFHxA)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
Perfluorononanesulfonic Acid (PFNS)	U		0.46	4.6	ng/L	1	8/18/2021 19:44
Perfluorononanoic Acid (PFNA)	U		0.81	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctadecanoic Acid (PFODA)	U		0.60	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctanesulfonamide (PFOSA)	U		0.66	4.6	ng/L	1	8/18/2021 19:44
Perfluorooctanesulfonic Acid (PFOS)	U		0.83	1.9	ng/L	1	8/18/2021 19:44
Perfluorooctanoic Acid (PFOA)	U		0.59	1.9	ng/L	1	8/18/2021 19:44
Perfluoropentanesulfonic Acid (PFPeS)	U		0.52	4.6	ng/L	1	8/18/2021 19:44
Perfluoropentanoic Acid (PFPeA)	U		1.2	4.6	ng/L	1	8/18/2021 19:44
Perfluorotetradecanoic Acid (PFTeA)	U		2.5	4.6	ng/L	1	8/18/2021 19:44
Perfluorotridecanoic Acid (PFTriA)	U		0.72	4.6	ng/L	1	8/18/2021 19:44
Perfluoroundecanoic Acid (PFUnA)	U		0.91	4.6	ng/L	1	8/18/2021 19:44
N-ethylperfluoro-1-octanesulfonamide	U		1.1	4.6	ng/L	1	8/18/2021 19:44
N-Ethylperfluorooctanesulfonamidoacetic Acid	U		0.58	4.6	ng/L	1	8/18/2021 19:44
N-Ethylperfluorooctanesulfonamidoethanol	U		0.48	4.6	ng/L	1	8/18/2021 19:44
N-methylperfluoro-1-octanesulfonamide	U		0.74	4.6	ng/L	1	8/18/2021 19:44

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

ALS Group, USA

Date: 23-Aug-21

Client: Gannett Fleming, Inc.
Project: WRR 55929.007
Sample ID: Field Blank
Collection Date: 8/13/2021 10:15 AM

Work Order: 21081410
Lab ID: 21081410-01
Matrix: DRINKING WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
N-Methylperfluorooctanesulfonamidoacetic Acid	U		0.60	4.6	ng/L	1	8/18/2021 19:44
N-Methylperfluorooctanesulfonamidoethanol	U		0.45	4.6	ng/L	1	8/18/2021 19:44
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		1.1	4.6	ng/L	1	8/18/2021 19:44
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		0.52	4.6	ng/L	1	8/18/2021 19:44
11Cl-Pf3OUdS	U		0.43	4.6	ng/L	1	8/18/2021 19:44
9Cl-PF3ONS	U		0.42	4.6	ng/L	1	8/18/2021 19:44
Surr: 13C2-FtS 4:2	79.2			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-FtS 6:2	96.4			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-FtS 8:2	104			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFDA	92.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFDoA	60.9			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFHxA	74.2			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFHxDA	74.6			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFTeA	76.5			50-150	%REC	1	8/18/2021 19:44
Surr: 13C2-PFUnA	103			50-150	%REC	1	8/18/2021 19:44
Surr: 13C3-HFPO-DA	75.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C3-PFBS	72.7			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFBA	72.3			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFHpA	105			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFOA	85.9			50-150	%REC	1	8/18/2021 19:44
Surr: 13C4-PFOS	81.1			50-150	%REC	1	8/18/2021 19:44
Surr: 13C5-PFNA	82.3			50-150	%REC	1	8/18/2021 19:44
Surr: 13C5-PFPeA	75.6			50-150	%REC	1	8/18/2021 19:44
Surr: 13C8-FOSA	87.8			50-150	%REC	1	8/18/2021 19:44
Surr: 18O2-PFHxS	61.9			50-150	%REC	1	8/18/2021 19:44
Surr: d5-N-EtFOSA	67.2			50-150	%REC	1	8/18/2021 19:44
Surr: d5-N-EtFOSAA	98.5			50-150	%REC	1	8/18/2021 19:44
Surr: d9-N-EtFOSE	73.4			50-150	%REC	1	8/18/2021 19:44
Surr: d3-N-MeFOSA	94.6			50-150	%REC	1	8/18/2021 19:44
Surr: d3-N-MeFOSAA	89.4			50-150	%REC	1	8/18/2021 19:44
Surr: d7-N-MeFOSE	65.6			50-150	%REC	1	8/18/2021 19:44

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: **182190** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK		Sample ID: MBLK-182190-182190			Units: ng/L			Analysis Date: 8/18/2021 04:57 PM			
Client ID:		Run ID: LCMS1_210818B			SeqNo: 7678474		Prep Date: 8/18/2021		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 Acid	U	1.4	5.0								
Perfluorododecanoic Acid (PFDA)	U	1.4	5.0								
Perfluoroheptanesulfonic Acid	U	0.57	5.0								
Perfluoroheptanoic Acid (PFHx)	U	0.44	5.0								
Perfluorohexadecanoic Acid (PFHx)	U	0.38	5.0								
Perfluorohexanesulfonic Acid	U	0.37	5.0								
Perfluorohexanoic Acid (PFHx)	U	1.2	5.0								
Perfluoronanesulfonic Acid	U	0.5	5.0								
Perfluoronanoic Acid (PFNA)	U	0.87	5.0								
Perfluorooctadecanoic Acid (PFDA)	U	0.65	5.0								
Perfluorooctanesulfonamide (PFOS)	U	0.71	5.0								
Perfluorooctanesulfonic Acid (PFOS)	U	0.89	2.0								
Perfluorooctanoic Acid (PFOA)	U	0.63	2.0								
Perfluoropentanesulfonic Acid	U	0.56	5.0								
Perfluoropentanoic Acid (PFPeA)	U	1.3	5.0								
Perfluorotetradecanoic Acid (PFTrA)	U	2.6	5.0								
Perfluorotridecanoic Acid (PFTeA)	U	0.77	5.0								
Perfluoroundecanoic Acid (PFUdA)	U	0.97	5.0								
N-ethylperfluoro-1-octanesulfonate	U	1.2	5.0								
N-Ethylperfluorooctanesulfonate	U	0.63	5.0								
N-Ethylperfluorooctanesulfonate	U	0.52	5.0								
N-methylperfluoro-1-octanesulfonate	U	0.79	5.0								
N-Methylperfluorooctanesulfonate	U	0.64	5.0								
N-Methylperfluorooctanesulfonate	U	0.48	5.0								
Hexafluoropropylene oxide dimer	UI	1.2	5.0								
4,8-Dioxa-3H-perfluorononane	U	0.56	5.0								
11Cl-Pf3OUdS	U	0.47	5.0								
9Cl-PF3ONS	U	0.45	5.0								
Surr: 13C2-FtS 4:2	93.04	0	0	149.4	0	62.3	50-150	0			
Surr: 13C2-FtS 6:2	114	0	0	152	0	75	50-150	0			
Surr: 13C2-FtS 8:2	114.4	0	0	153.3	0	74.6	50-150	0			
Surr: 13C2-PFDA	124.7	0	0	160	0	77.9	50-150	0			
Surr: 13C2-PFDoA	87.14	0	0	160	0	54.5	50-150	0			

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

Client: Gannett Fleming, Inc.
Work Order: 21081410
Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
<i>Surr: 13C2-PFHxA</i>	<i>106.7</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.7</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFHxDA</i>	<i>106.5</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFTeA</i>	<i>94.43</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>59</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C2-PFUnA</i>	<i>139</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>86.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>99.67</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>62.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C3-PFBS</i>	<i>86.02</i>	<i>0</i>	<i>0</i>	<i>148.8</i>	<i>0</i>	<i>57.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFBA</i>	<i>102.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFHpA</i>	<i>123.3</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>77.1</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOA</i>	<i>114.8</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>71.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C4-PFOS</i>	<i>109.8</i>	<i>0</i>	<i>0</i>	<i>152.8</i>	<i>0</i>	<i>71.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFNA</i>	<i>108.4</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>67.8</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C5-PFPeA</i>	<i>97.39</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>60.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>102.2</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>63.9</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: 18O2-PFHxS</i>	<i>77.65</i>	<i>0</i>	<i>0</i>	<i>151.2</i>	<i>0</i>	<i>51.4</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSA</i>	<i>85.18</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>53.2</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>116.1</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>72.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d9-N-EtFOSE</i>	<i>90.56</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>56.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSA</i>	<i>83.68</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>52.3</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>106.6</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>66.6</i>	<i>50-150</i>	<i>0</i>	
<i>Surr: d7-N-MeFOSE</i>	<i>98.57</i>	<i>0</i>	<i>0</i>	<i>160</i>	<i>0</i>	<i>61.6</i>	<i>50-150</i>	<i>0</i>	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

LCS		Sample ID: LCS-182190-182190				Units: ng/L			Analysis Date: 8/18/2021 05:07 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678475		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	39.54	0.94	5.0	29.9	0	132	63-143	0			
Fluorotelomer Sulphonic Acid	36.45	0.66	5.0	30.3	0	120	64-140	0			
Fluorotelomer Sulphonic Acid	36.22	1.1	5.0	30.7	0	118	67-138	0			
Fluorotelomer Sulphonic Acid	50.64	0.9	5.0	30.8	0	164	40-160	0			S
Perfluorobutanoic Acid (PFBA)	33.55	2.6	5.0	32	0	105	73-129	0			
Perfluorodecanesulfonic Acid	32.15	1.4	5.0	30.8	0	104	53-142	0			
Perfluorodecanoic Acid (PFDA)	32.1	1.2	5.0	32	0	100	71-129	0			
Perfluorododecanesulfonic Acid	26.32	1.4	5.0	31	0	84.9	69-134	0			
Perfluorododecanoic Acid (PFDA)	29.46	1.4	5.0	32	0	92.1	72-134	0			
Perfluoroheptanesulfonic Acid	38.34	0.57	5.0	30.5	0	126	69-134	0			
Perfluoroheptanoic Acid (PFHpA)	38.44	0.44	5.0	32	0	120	72-130	0			
Perfluorohexadecanoic Acid (PFHxDA)	39.34	0.38	5.0	32	0	123	70-130	0			
Perfluorohexanesulfonic Acid	32.38	0.37	5.0	29.1	0	111	68-131	0			
Perfluorohexanoic Acid (PFHxA)	33.47	1.2	5.0	32	0	105	72-129	0			
Perfluoronanesulfonic Acid	35.34	0.5	5.0	30.7	0	115	69-127	0			
Perfluorononanoic Acid (PFNA)	32.2	0.87	5.0	32	0	101	69-130	0			
Perfluorooctanesulfonamide (PFOSA)	39.06	0.71	5.0	32	0	122	67-137	0			
Perfluorooctanesulfonic Acid	31.08	0.89	2.0	29.7	0	105	65-140	0			
Perfluorooctanoic Acid (PFOA)	26.18	0.63	2.0	32	0	81.8	71-133	0			
Perfluoropentanesulfonic Acid	32.31	0.56	5.0	30	0	108	71-127	0			
Perfluoropentanoic Acid (PFPeA)	39.4	1.3	5.0	32	0	123	72-129	0			
Perfluorotetradecanoic Acid (PFTrDA)	36.89	2.6	5.0	32	0	115	71-132	0			
Perfluorotridecanoic Acid (PFTeA)	44.96	0.77	5.0	32	0	140	65-144	0			
Perfluoroundecanoic Acid (PFUnA)	32.31	0.97	5.0	32	0	101	69-133	0			
N-Ethylperfluorooctanesulfonamide	30.37	0.63	5.0	32	0	94.9	61-135	0			
N-Ethylperfluorooctanesulfonamide	35.06	0.52	5.0	32	0	110	70-130	0			
N-Methylperfluorooctanesulfonamide	37.4	0.64	5.0	32	0	117	65-136	0			
N-Methylperfluorooctanesulfonamide	35.33	0.48	5.0	32	0	110	68-141	0			
Hexafluoropropylene oxide dimer	39.41	1.2	5.0	32	0	123	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	29.65	0.56	5.0	30.1	0	98.5	70-130	0			
11Cl-Pf3OUdS	28.96	0.47	5.0	30.1	0	96.2	70-130	0			
9Cl-PF3ONS	30.51	0.45	5.0	29.8	0	102	70-130	0			
Surr: 13C2-FtS 4:2	96.75	0	0	149.4	0	64.7	50-150	0			
Surr: 13C2-FtS 6:2	116.6	0	0	152	0	76.7	50-150	0			
Surr: 13C2-FtS 8:2	113.9	0	0	153.3	0	74.3	50-150	0			
Surr: 13C2-PFDA	135.5	0	0	160	0	84.7	50-150	0			
Surr: 13C2-PFDoA	111.7	0	0	160	0	69.8	50-150	0			
Surr: 13C2-PFHxA	119.1	0	0	160	0	74.4	50-150	0			
Surr: 13C2-PFHxDA	108.3	0	0	160	0	67.7	50-150	0			
Surr: 13C2-PFTeA	104.6	0	0	160	0	65.4	50-150	0			
Surr: 13C2-PFUnA	155.9	0	0	160	0	97.5	50-150	0			
Surr: 13C3-HFPO-DA	98.46	0	0	160	0	61.5	50-150	0			
Surr: 13C3-PFBS	88.94	0	0	148.8	0	59.8	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C4-PFBA	120.9	0	0	160	0	75.6	50-150	0	
Surr: 13C4-PFHpA	119.1	0	0	160	0	74.4	50-150	0	
Surr: 13C4-PFOA	145.2	0	0	160	0	90.8	50-150	0	
Surr: 13C4-PFOS	120.9	0	0	152.8	0	79.1	50-150	0	
Surr: 13C5-PFNA	123.6	0	0	160	0	77.2	50-150	0	
Surr: 13C5-PFPeA	98.57	0	0	160	0	61.6	50-150	0	
Surr: 13C8-FOSA	105.4	0	0	160	0	65.9	50-150	0	
Surr: 18O2-PFHxS	102.8	0	0	151.2	0	68	50-150	0	
Surr: d5-N-EtFOSA	84.23	0	0	160	0	52.6	50-150	0	
Surr: d5-N-EtFOSAA	120.9	0	0	160	0	75.6	50-150	0	
Surr: d9-N-EtFOSE	100.6	0	0	160	0	62.9	50-150	0	
Surr: d3-N-MeFOSA	101.5	0	0	160	0	63.5	50-150	0	
Surr: d3-N-MeFOSAA	105	0	0	160	0	65.7	50-150	0	
Surr: d7-N-MeFOSE	110.1	0	0	160	0	68.8	50-150	0	

LCS		Sample ID: LCS-182190-182190			Units: ng/L		Analysis Date: 8/19/2021 11:42 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678856		Prep Date: 8/18/2021		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanesulfonic Acid (	35.59	0.35	5.0	28.3	0	126	72-130	0			
Perfluorooctadecanoic Acid (P	39.69	0.65	5.0	32	0	124	70-130	0			
N-Ethylperfluorooctanesulfona	37.92	0.52	5.0	32	0	119	70-130	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MS		Sample ID: 21081217-06AMS				Units: ng/L		Analysis Date: 8/18/2021 05:18 PM			
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678476		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	30.34	0.92	4.9	29.43	0	103	63-143	0			
Fluorotelomer Sulphonic Acid	32.83	0.65	4.9	29.82	2.223	103	64-140	0			
Fluorotelomer Sulphonic Acid	29.75	1.1	4.9	30.22	0.3387	97.3	67-138	0			
Fluorotelomer Sulphonic Acid	24.29	0.89	4.9	30.32	0	80.1	40-160	0			
Perfluorobutanesulfonic Acid	59.37	0.35	4.9	27.85	31.12	101	72-130	0			
Perfluorobutanoic Acid (PFBA)	36.64	2.6	4.9	31.5	22.05	46.3	73-129	0			S
Perfluorodecanesulfonic Acid	29.55	1.3	4.9	30.32	0	97.5	53-142	0			
Perfluorodecanoic Acid (PFDA)	27.21	1.2	4.9	31.5	0.5387	84.7	71-129	0			
Perfluorododecanesulfonic Acid	22.32	1.4	4.9	30.51	0	73.1	69-134	0			
Perfluorododecanoic Acid (PFDA)	26	1.4	4.9	31.5	0	82.5	72-134	0			
Perfluoroheptanesulfonic Acid	41.17	0.56	4.9	30.02	10.21	103	69-134	0			
Perfluoroheptanoic Acid (PFH7)	42.35	0.43	4.9	31.5	12.74	94	72-130	0			
Perfluorohexadecanoic Acid (PFH16)	30.53	0.38	4.9	31.5	0	96.9	70-130	0			
Perfluorohexanesulfonic Acid	64.25	0.36	4.9	28.64	42.25	76.8	68-131	0			
Perfluorohexanoic Acid (PFH6)	36.98	1.2	4.9	31.5	11.81	79.9	72-129	0			
Perfluoronanesulfonic Acid	29.48	0.49	4.9	30.22	0	97.6	69-127	0			
Perfluorononanoic Acid (PFNA)	26.92	0.86	4.9	31.5	1.152	81.8	69-130	0			
Perfluorooctadecanoic Acid (PFDA)	31.3	0.64	4.9	31.5	0	99.4	70-130	0			
Perfluorooctanesulfonamide (PFOS)	32	0.7	4.9	31.5	0	102	67-137	0			
Perfluorooctanoic Acid (PFOA)	41.8	0.62	2.0	31.5	26.64	48.1	71-133	0			S
Perfluoropentanesulfonic Acid	44.37	0.55	4.9	29.53	16.47	94.5	71-127	0			
Perfluoropentanoic Acid (PFPeA)	36.74	1.3	4.9	31.5	11.03	81.7	72-129	0			
Perfluorotetradecanoic Acid (PFDA)	32.09	2.6	4.9	31.5	0	102	71-132	0			
Perfluorotridecanoic Acid (PFTA)	38.55	0.76	4.9	31.5	0	122	65-144	0			
Perfluoroundecanoic Acid (PFDA)	28.12	0.96	4.9	31.5	0	89.3	69-133	0			
N-ethylperfluoro-1-octanesulfonate	34.25	1.1	4.9	31.5	0	109	70-130	0			
N-Ethylperfluorooctanesulfonate	28.12	0.62	4.9	31.5	1.061	85.9	61-135	0			
N-Ethylperfluorooctanesulfonate	29.13	0.51	4.9	31.5	0	92.5	70-130	0			
N-methylperfluoro-1-octanesulfonate	35.33	0.78	4.9	31.5	0	112	70-130	0			
N-Methylperfluorooctanesulfonate	30.78	0.63	4.9	31.5	0	97.7	65-136	0			
N-Methylperfluorooctanesulfonate	27.47	0.48	4.9	31.5	0	87.2	68-141	0			
Hexafluoropropylene oxide dimer	32.19	1.2	4.9	31.5	0	102	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid	22.57	0.55	4.9	29.63	0	76.2	70-130	0			
11Cl-Pf3OUdS	24.25	0.46	4.9	29.63	0	81.8	70-130	0			
9Cl-PF3ONS	26.65	0.44	4.9	29.33	0	90.9	70-130	0			
Surr: 13C2-FtS 4:2	430.2	0	0	147.1	0	292	50-150	0			S
Surr: 13C2-FtS 6:2	292.3	0	0	149.6	0	195	50-150	0			S
Surr: 13C2-FtS 8:2	237.9	0	0	150.9	0	158	50-150	0			S
Surr: 13C2-PFDA	144.2	0	0	157.5	0	91.5	50-150	0			
Surr: 13C2-PFDoA	117.5	0	0	157.5	0	74.6	50-150	0			
Surr: 13C2-PFHxA	99.18	0	0	157.5	0	63	50-150	0			
Surr: 13C2-PFHxDA	110.6	0	0	157.5	0	70.2	50-150	0			
Surr: 13C2-PFTeA	98.54	0	0	157.5	0	62.6	50-150	0			

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod							
Surr: 13C2-PFUnA	152.3	0	0	157.5	0	96.7	50-150	0	
Surr: 13C3-HFPO-DA	78.4	0	0	157.5	0	49.8	50-150	0	S
Surr: 13C3-PFBS	93.17	0	0	146.5	0	63.6	50-150	0	
Surr: 13C4-PFBA	93.4	0	0	157.5	0	59.3	50-150	0	
Surr: 13C4-PFHpA	96.87	0	0	157.5	0	61.5	50-150	0	
Surr: 13C4-PFOA	120.3	0	0	157.5	0	76.4	50-150	0	
Surr: 13C4-PFOS	111.8	0	0	150.4	0	74.3	50-150	0	
Surr: 13C5-PFNA	133.7	0	0	157.5	0	84.9	50-150	0	
Surr: 13C5-PFPeA	81.17	0	0	157.5	0	51.5	50-150	0	
Surr: 13C8-FOSA	112.4	0	0	157.5	0	71.3	50-150	0	
Surr: 18O2-PFHxS	109.4	0	0	148.8	0	73.5	50-150	0	
Surr: d5-N-EtFOSA	92.4	0	0	157.5	0	58.7	50-150	0	
Surr: d5-N-EtFOSAA	145.3	0	0	157.5	0	92.3	50-150	0	
Surr: d9-N-EtFOSE	102.9	0	0	157.5	0	65.3	50-150	0	
Surr: d3-N-MeFOSA	105.3	0	0	157.5	0	66.9	50-150	0	
Surr: d3-N-MeFOSAA	134.5	0	0	157.5	0	85.4	50-150	0	
Surr: d7-N-MeFOSE	113.8	0	0	157.5	0	72.3	50-150	0	

MS		Sample ID: 21081217-06AMS			Units: ng/L		Analysis Date: 8/19/2021 11:53 AM				
Client ID:		Run ID: LCMS1_210819A			SeqNo: 7678857		Prep Date: 8/18/2021		DF: 10		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (I	310.2	8.8	20	29.23	443.3	-455	65-140	0			SO

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190 Instrument ID LCMS1 Method: E537 Mod

MSD		Sample ID: 21081217-06AMSD				Units: ng/L			Analysis Date: 8/18/2021 05:28 PM		
Client ID:		Run ID: LCMS1_210818B				SeqNo: 7678477		Prep Date: 8/18/2021		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid	34.66	0.95	5.1	30.39	0	114	63-143	30.34	13.3	30	
Fluorotelomer Sulphonic Acid	38.17	0.67	5.1	30.79	2.223	117	64-140	32.83	15	30	
Fluorotelomer Sulphonic Acid	35.23	1.1	5.1	31.2	0.3387	112	67-138	29.75	16.9	30	
Fluorotelomer Sulphonic Acid	26.61	0.92	5.1	31.3	0	85	40-160	24.29	9.13	30	
Perfluorobutanesulfonic Acid	65.04	0.36	5.1	28.76	31.12	118	72-130	59.37	9.12	30	
Perfluorobutanoic Acid (PFBA)	38.63	2.6	5.1	32.52	22.05	51	73-129	36.64	5.29	30	S
Perfluorodecanesulfonic Acid	31.45	1.4	5.1	31.3	0	100	53-142	29.55	6.24	30	
Perfluorodecanoic Acid (PFDA)	33.05	1.3	5.1	32.52	0.5387	100	71-129	27.21	19.4	30	
Perfluorododecanesulfonic Acid	28.64	1.5	5.1	31.5	0	90.9	69-134	22.32	24.8	30	
Perfluorododecanoic Acid (PFDA)	29.7	1.5	5.1	32.52	0	91.3	72-134	26	13.3	30	
Perfluoroheptanesulfonic Acid	47.71	0.58	5.1	31	10.21	121	69-134	41.17	14.7	30	
Perfluoroheptanoic Acid (PFHx)	44.73	0.45	5.1	32.52	12.74	98.4	72-130	42.35	5.49	30	
Perfluorohexadecanoic Acid (PFHx)	35.76	0.39	5.1	32.52	0	110	70-130	30.53	15.8	30	
Perfluorohexanesulfonic Acid	70.46	0.37	5.1	29.57	42.25	95.4	68-131	64.25	9.22	30	
Perfluorohexanoic Acid (PFHx)	43.16	1.2	5.1	32.52	11.81	96.4	72-129	36.98	15.4	30	
Perfluorononanesulfonic Acid	36.06	0.5	5.1	31.2	0	116	69-127	29.48	20.1	30	
Perfluorononanoic Acid (PFNA)	32.02	0.88	5.1	32.52	1.152	94.9	69-130	26.92	17.3	30	
Perfluorooctadecanoic Acid (PFDA)	33.24	0.66	5.1	32.52	0	102	70-130	31.3	5.99	30	
Perfluorooctanesulfonamide (PFOS)	36.37	0.72	5.1	32.52	0	112	67-137	32	12.8	30	
Perfluorooctanoic Acid (PFOA)	45.07	0.64	2.0	32.52	26.64	56.7	71-133	41.8	7.53	30	S
Perfluoropentanesulfonic Acid	51.02	0.57	5.1	30.49	16.47	113	71-127	44.37	14	30	
Perfluoropentanoic Acid (PFPeA)	41.83	1.3	5.1	32.52	11.03	94.7	72-129	36.74	12.9	30	
Perfluorotetradecanoic Acid (PFDA)	38.19	2.7	5.1	32.52	0	117	71-132	32.09	17.3	30	
Perfluorotridecanoic Acid (PFTA)	40.65	0.78	5.1	32.52	0	125	65-144	38.55	5.3	30	
Perfluoroundecanoic Acid (PFDA)	34.16	0.99	5.1	32.52	0	105	69-133	28.12	19.4	30	
N-ethylperfluoro-1-octanesulfonate	38.89	1.2	5.1	32.52	0	120	70-130	34.25	12.7	30	
N-Ethylperfluorooctanesulfonate	32	0.64	5.1	32.52	1.061	95.1	61-135	28.12	12.9	30	
N-Ethylperfluorooctanesulfonate	34.66	0.53	5.1	32.52	0	107	70-130	29.13	17.4	30	
N-methylperfluoro-1-octanesulfonate	42.1	0.81	5.1	32.52	0	129	70-130	35.33	17.5	30	
N-Methylperfluorooctanesulfonate	38.1	0.65	5.1	32.52	0	117	65-136	30.78	21.3	30	
N-Methylperfluorooctanesulfonate	30.83	0.49	5.1	32.52	0	94.8	68-141	27.47	11.5	30	
Hexafluoropropylene oxide dimer	37.07	1.2	5.1	32.52	0	114	70-130	32.19	14.1	30	
4,8-Dioxo-3H-perfluorononanoic acid	25.46	0.57	5.1	30.59	0	83.2	70-130	22.57	12.1	30	
11Cl-Pf3OUdS	30.27	0.47	5.1	30.59	0	98.9	70-130	24.25	22.1	30	
9Cl-PF3ONS	31.68	0.46	5.1	30.28	0	105	70-130	26.65	17.2	30	
Surr: 13C2-FtS 4:2	409	0	0	151.9	0	269	50-150	430.2	5.04	30	S
Surr: 13C2-FtS 6:2	289.7	0	0	154.5	0	188	50-150	292.3	0.895	30	S
Surr: 13C2-FtS 8:2	230.5	0	0	155.8	0	148	50-150	237.9	3.16	30	
Surr: 13C2-PFDA	139	0	0	162.6	0	85.5	50-150	144.2	3.63	30	
Surr: 13C2-PFDoA	121.9	0	0	162.6	0	75	50-150	117.5	3.63	30	
Surr: 13C2-PFHxA	94.58	0	0	162.6	0	58.2	50-150	99.18	4.75	30	
Surr: 13C2-PFHxDA	110.7	0	0	162.6	0	68.1	50-150	110.6	0.0868	30	
Surr: 13C2-PFTeA	98.41	0	0	162.6	0	60.5	50-150	98.54	0.134	30	

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

Client: Gannett Fleming, Inc.
 Work Order: 21081410
 Project: WRR 55929.007

QC BATCH REPORT

Batch ID: 182190	Instrument ID LCMS1	Method: E537 Mod									
Surr: 13C2-PFUnA	150.5	0	0	162.6	0	92.5	50-150	152.3	1.19	30	
Surr: 13C3-HFPO-DA	73.66	0	0	162.6	0	45.3	50-150	78.4	6.24	30	S
Surr: 13C3-PFBS	90.75	0	0	151.2	0	60	50-150	93.17	2.64	30	
Surr: 13C4-PFBA	92.7	0	0	162.6	0	57	50-150	93.4	0.748	30	
Surr: 13C4-PFHpA	108	0	0	162.6	0	66.4	50-150	96.87	10.8	30	
Surr: 13C4-PFOA	120.9	0	0	162.6	0	74.4	50-150	120.3	0.533	30	
Surr: 13C4-PFOS	105	0	0	155.3	0	67.6	50-150	111.8	6.2	30	
Surr: 13C5-PFNA	129.3	0	0	162.6	0	79.5	50-150	133.7	3.35	30	
Surr: 13C5-PFPeA	79.27	0	0	162.6	0	48.8	50-150	81.17	2.37	30	S
Surr: 13C8-FOSA	110.9	0	0	162.6	0	68.2	50-150	112.4	1.32	30	
Surr: 18O2-PFHxS	103.2	0	0	153.7	0	67.2	50-150	109.4	5.8	30	
Surr: d5-N-EtFOSA	94.37	0	0	162.6	0	58	50-150	92.4	2.11	30	
Surr: d5-N-EtFOSAA	145.9	0	0	162.6	0	89.7	50-150	145.3	0.38	30	
Surr: d9-N-EtFOSE	100.5	0	0	162.6	0	61.8	50-150	102.9	2.28	30	
Surr: d3-N-MeFOSA	101.9	0	0	162.6	0	62.7	50-150	105.3	3.25	30	
Surr: d3-N-MeFOSAA	134.6	0	0	162.6	0	82.8	50-150	134.5	0.113	30	
Surr: d7-N-MeFOSE	109.8	0	0	162.6	0	67.5	50-150	113.8	3.57	30	

MSD		Sample ID: 21081217-06AMSD				Units: ng/L		Analysis Date: 8/19/2021 12:03 PM			
Client ID:		Run ID: LCMS1_210819A		SeqNo: 7678858		Prep Date: 8/18/2021		DF: 10			
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanesulfonic Acid (l	504.4	9.1	20	30.18	443.3	202	65-140	310.2	47.7	30	SRO

The following samples were analyzed in this batch: 21081410-01A



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

Chain of Custody Form

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

Page 1 of 1

COC ID: 229890

ALS Project Manager: JN

ALS Work Order #: 21081410

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	ALS 2024	Project Name	WRP	A	PFAS 537 Modified											
Work Order		Project Number	55929.007-FB	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	Address	8040 Excelsior Drive	E												
	Suite 303		Suite 303	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	8-13-21	10:15	Water	-	2	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign Cliff Wright CEO		Shipment Method FedEx		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour				Results Due Date:			
Relinquished by: Cliff Wright	Date: 8-13-21	Time: 13:30	Received by: FedEx	Notes:							
Relinquished by: FedEx	Date: 8/14/21	Time: 1000	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)					
Logged by (Laboratory):	Date: 8/16/21	Time: 1509	Checked by (Laboratory):	IR3	4.30e	<input type="checkbox"/> Level II Std QO	<input type="checkbox"/> TRRP Checklist				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035						<input type="checkbox"/> Level III Std QC/Raw Data	<input type="checkbox"/> TRRP Level IV				
						<input type="checkbox"/> Level IV SW646/CLP					
						<input type="checkbox"/> 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.

Sample Receipt Checklist

Client Name: **GANNETT FLEMING - WI**

Date/Time Received: **14-Aug-21 10:00**

Work Order: **21081410**

Received by: **LYS**

Checklist completed by *Lydia Sweet* 16-Aug-21
eSignature Date

Reviewed by: *Jadi Blawie* 16-Aug-21
eSignature 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):

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

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: