April 6, 2021

Mr. Brian Jankauskas, P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau A
625 Broadway
12th Floor
Albany, NY 12233-7015

Subject: **Groundwater Sampling Data for PFAS**
Main Plant Site – Well MW-OB30
Former Ciba-Geigy/Hercules Facility, Glens Falls, New York
NYSDEC Site No.: 557011

Dear Mr. Jankauskas:

This letter transmits the results of groundwater samples that were collected and analyzed in accordance with the *PFAS Groundwater Sampling Work Plan* ("Work Plan") for the above-referenced site. The Work Plan was submitted to New York State Department of Environmental Conservation (NYSDEC) on September 1, 2020 by EHS Support LLC ("EHS Support"), on behalf of Ashland LLC (previously acquired Hercules Incorporated) and BASF Corporation (previously acquired Ciba Corporation) (collectively "the Parties") and was approved by NYSDEC on September 30, 2020.

Antea® Group ("Antea") of White Plains, New York, was contracted to collect groundwater samples pursuant to the Work Plan and per- and polyfluoroalkyl substances (PFAS) sampling guidance issued by NYSDEC.[1] Antea collected two groundwater samples from well MW-OB30 on October 28, 2020 for the analysis of PFAS, consisting of one primary sample and one duplicate sample. The samples were collected using low-flow sampling techniques and a peristaltic pump, with sample handling procedures and precautions specific to PFAS sample collection. The field sampling log is provided as **Enclosure 1**. The location of well MW-OB30 is illustrated on **Figure 1**.

In addition to the duplicate groundwater sample, quality assurance/quality control (QA/QC) procedures included the collection of a matrix spike/matrix spike duplicate sample pair and an equipment blank water sample. The primary groundwater sample and QA/QC samples were shipped on ice and under Chain-of-Custody documentation to Eurofins TestAmerica laboratory in Sacramento, California ("Eurofins"). Eurofins has the relevant analytical method certification, and the method detection limits (MDLs) requested by the NYSDEC were met, including:

- PFAS Target Analytes – Modified (Low Level) EPA Method 537 with a minimum MDL of 2 nanograms per liter (ng/L [parts per trillion - ppt]) for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA)

[1] On January 17, 2020, the NYSDEC issued a guidance document entitled Guidelines for Sampling and Analysis of PFAS Under NYSDEC's Part 375 Remedial Programs. A revised version of this guidance document was issued by NYSDEC in October 2020.

The sample results are summarized in the attached **Table 1**. There were no PFAS detections in the equipment blank sample. The Eurofins laboratory report is provided in **Enclosure 2**. Full Category B (Level IV) data validation was performed by EHS Support following NYSDEC protocols, and findings were reported in a data usability summary report (DUSR) (**Enclosure 3**). The data were found to be valid and usable. The electronic data deliverables (EDDs) are being uploaded to the NYSDEC EQuIS™ EDD system.

The October 2020 sample results showed concentrations of 10 and 13 ppt PFOS (for the primary and duplicate samples, respectively) and 5 ppt PFOA at well MW-OB30. These concentrations are near or below the maximum contaminant levels (MCLs) of 10 ppt in drinking water that were adopted by New York State in July 2020. The comparison to drinking water MCLs is for reference only, as the use of groundwater at this Site is prevented by Deed Notice.

For the following reasons, the Parties propose no further groundwater sampling or analysis for PFAS at well MW-OB30:

- There are no suspected sources of PFAS associated with former operations at the Site.
- PFOS concentrations in 2020 were lower than the detection of PFOS in 2018 at this well (i.e., an estimated concentration of 180 ppt PFOS).[2]
- Overburden groundwater in the vicinity of well MW-OB30 is within the capture zone of the French Drain.[3]
- Groundwater from the vicinity of well MW-OB30 represents a small fraction of the groundwater captured by the French Drain, which totals on the order of 50,000 gallons per day.
- The October 2020 sample results show that the total PFAS concentration in groundwater at well MW-OB30 is below 500 ppt, and the concentration of other individual PFAS constituents (other than PFOA and PFOS) are below 100 ppt. As indicated in the NYSDEC PFAS sampling guidance, an exceedance of these thresholds may have warranted further assessment.
- Use of groundwater at this Site is precluded by Deed Notice.

Please contact me at 608-558-6795 regarding any questions.

I, Cassie R. Johnson, P.E., certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this *Groundwater Sampling Data for PFAS* letter dated April 2021 for the Former Ciba-Geigy facility located in Glens Falls, New York, was prepared in accordance with all applicable statutes and regulations and with DER *Technical Guidance for Site Investigation and Remediation* (DER-10).

Regards,

Cassie R. Johnson, P.E.
Wisconsin Professional Engineer No. E-39526
EHS Support LLC

[2] This PFOS sample result from 2018 was assigned a J qualifier by the laboratory, indicating that the result was estimated.

[3] EHS Support LLC. 2019. Revised Remedy Optimization Report. Former Ciba-Geigy Facility, Glens Falls, NY. March.

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cc: Eamonn O'Neil, NYSDOH
James Vondracek, Ashland LLC
Stephen Havlik, BASF Corporation
Laura McMahon, BASF Corporation
James Breza, EHS Support
Kristin VanLandingham, EHS Support
Elena Dadukova, EHS Support
Christopher Meyer, Antea Group
Cody Hume, Antea Group
Bob O'Neill, Brown and Caldwell
Jeff Caputi, Brown and Caldwell

Table

Table 1
Summary of Laboratory Analytical Results
Former Ciba-Geigy/Hercules Facility, Glens Falls, NY

Location ID Sample Date Chemical	CAS	Unit	New York State Drinking Water MCL [1]	MW-OB30 10/28/2020 Result	Qual	DUP-01 10/28/2020 Result	Qual
PFAS							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	µg/L	--	0.0063		0.0065	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	µg/L	--	0.0019	U	0.0019	U
N-Ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	2991-50-6	µg/L	--	0.0047	U	0.0047	U
N-Methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	2355-31-9	µg/L	--	0.0047	U	0.0047	U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	µg/L	--	0.0019	U	0.00097	J
Perfluorobutanoic acid (PFBA)	375-22-4	µg/L	--	0.0037	J	0.0035	J
Perfluorodecanesulfonic acid (PFDS) (free acid)	335-77-3	µg/L	--	0.0019	U	0.0019	U
Perfluorodecanoic acid (PFDA)	335-76-2	µg/L	--	0.0019	U	0.0019	U
Perfluorododecanoic acid (PFDoDA or PFDoA)	307-55-1	µg/L	--	0.0019	U	0.0019	U
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8	µg/L	--	0.0019	U	0.0019	U
Perfluoroheptanoic acid (PFHpA)	375-85-9	µg/L	--	0.001	J	0.00098	J
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	µg/L	--	0.0017	J	0.0016	J
Perfluorohexanoic acid (PFHxA)	307-24-4	µg/L	--	0.0013	J	0.0013	J
Perfluorononanoic acid (PFNA)	375-95-1	µg/L	--	0.00046	J	0.00043	J
Perfluorooctane sulfonamide (FOSA or PFOSA)	754-91-6	µg/L	--	0.0019	U	0.0019	U
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	µg/L	0.01	0.01		0.013	
Perfluorooctanoic acid (PFOA)	335-67-1	µg/L	0.01	0.0051		0.0052	
Perfluoropentanoic acid (PFPeA)	2706-90-3	µg/L	--	0.0013	J	0.0014	J
Perfluorotetradecanoic acid (PFTA)	376-06-7	µg/L	--	0.0019	U	0.0019	U
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	µg/L	--	0.0019	U	0.0019	U
Perfluoroundecanoic acid (PFUnDA or PFUnA)	2058-94-8	µg/L	--	0.0019	U	0.0019	U

Notes:
1 - dashed cells indicate not applicable

Definitions:
µg/L = micrograms per liter
CAS = Chemical Abstracts Service
MCL = maximum contaminant level
PFAS = per- and polyfluoroalkyl substances

Qualifiers:
J = Result is less than the reporting limit (RL) but greater than or equal to the method detection limit (MDL) and the concentration is an approximate value.
U = Indicates the analyte was analyzed for but not detected.

Figure

A B C D E F G H I

1 2 3 4 5

RIV

GLENS FALLS FEEDER CANAL

24' ACCESS ROAD

CAMU

MW-24
MW-OB1R
MW-OB2
MW-OB15
MW-OB5
MW-OB24
MW-OB13
MW-OB27
MH-6
CP-3
CP-2
CP-1
SUMP C
CP-4
CP-5
CP-6
MW-OB16
MH-5
BP-1
BP-4
BP-2
BP-3
BP-6
BP-7
MW-31
IP-4
IP-5
MW-OB14
MW-OB26
SUMP B
BP-5
BP-8
MW-OB34
MW-OB33
MW-OB25
MH-4
MH-3
BP-9
AP-5
AP-1
AP-2
AP-4
AP-3
SUMP A
MW-OB32
MW-OB31
MW-OB30
MH-2
AP-7
AP-6
MW-28
MW-26
MH-1
WP-CC-21
MW-OB7
MW-9
WP-CC-17
MW-OB9
WP-CC-12
WP-O-50
MW-OB8

Former Building 8

Former Building 56

Hudson River

Legend

- Overburden Well
- Manhole
- Sump
- Location to be Gauged and Sampled
- Alpha-Numeric Grid Location Lines
- Groundwater Extraction System French Drain
- Corrective Action Management Unit (CAMU)
- Railroad
- Fence
- Weir Brook
- Old Weir Brook

NOTE:

CONCRETE SLABS REMAIN AT LOCATION OF FORMER BUILDINGS 56, 41, AND 45. THE SLAB AT THE LOCATION OF BUILDING 8 HAS BEEN REMOVED.

N

200 100 0 200

Scale In Feet

EHS Support	FORMER CIBA-GEIGY / HERCULES SITE GLENS FALLS, NY	PFAS SAMPLING LOCATION	FIGURE 1

J:\EHSS_GIS\C16262_GlensFallsHudsonRiver\01_ANALYSIS\20180709_EmergingContSampFigure 1 - PFAS Sampling Location.mxd

Printed 8/13/2020 8:17:40 AM by Mick Osburn

Enclosure 1 Field Sampling Log

(Just Sampled PFAS)

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Haley Brown		Well ID:	MW-0830	
Date:	10/28/20		Original Install Depth:	18.25	feet
Weather:	Rainy 40s		Screen Length:	12	feet
Time In:	0920	Time Out: 1145	Well Diameter:	2"	inches

		10/26	10/28
Depth to Water (from TOC):	(feet)	10.41	10.44
Depth to Water (From TOC) With Pump in place:	(feet)		10.44
Total Depth (from TOC):	(feet)		18.55
Length of Water Column :	(feet)		8.11

WELL INFORMATION

Well Type: Flushmount ☐ Stick-Up ☒

Well Locked: Yes ☒ No ☐

Measuring Point Marked: Yes ☒ No ☐

Well Condition: Good ☒ Poor ☐

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.32
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	1.30

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Pump Size: 1/4" x 3/8" Depth of Pump Intake: 14.50

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ Tygon/Silicone N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 PC1HMAV9

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☒ No ☐

Final Depth to Water (prior to turning off pump): 18.46

Barometric Pressure (At time of sampling) in mm/Hg:

FIELD PARAMETER READINGS:

Time	0942	0944	0946	0948	0950	0952	0957	1002	1007	1012	1017	1022	1027	1032
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	11.50	11.68	11.82	11.99	12.15	12.74	13.46	13.84	14.39	14.73	15.25	15.61	15.96	16.30
Temperature (°C)	9.97	9.94	9.94	9.95	9.99	10.02	9.93	9.90	9.83	9.96	9.92	9.87	9.70	9.70
pH	7.85	10.13	10.09	10.07	11.91	12.34	12.80	12.42	11.84	11.33	10.60	10.50	10.47	10.42
Conductivity (mS/cm)	1.14	1.13	1.13	1.13	1.13	1.15	1.13	1.13	1.12	1.12	1.12	1.12	1.12	1.11
Dissolved Oxygen (mg/L)	0.0	0.60	0.89	1.09	1.20	1.33	1.62	1.90	1.94	1.94	2.18	2.30	2.35	2.37
Turbidity (NTU)	1.5	1.9	2.1	2.0	2.5	2.2	2.2	2.3	3.2	2.2	5.4	7.4	7.4	7.4
ORP (mV)	76	66	46	26	0	-15	-32	-34	-23	-21	-22	-4	-17	-15

SAMPLE INFORMATION

Sample List: PFAS

Diss. Chromium & [redacted] ☒ N/A

Diss. Hexavalent Chromium ☒

Total Cyanide ☒

Free Cyanide ☐

Total Dissolved Solids ☐

Hardness ☐

VOCs (Dichlorobenzenes) ☐

+PFAS

Sample ID:	MW-0830_20201028
Start Time:	1035
End Time:	1105
MS/MSD: Yes ☒ No ☐	
Duplicate: Yes ☒ No ☐	
Total Bottles:	
Sampled By:	HB

Duplicate ID:	DUP-01_20201028
Sample Time:	[redacted]
Total Bottles:	8
Sampled By:	HB
MS/MSD ID:	MW-0830_20201028
Sample Time:	1055
Total Bottles:	8
Sampled By:	HB

Observations (water color, clarity, etc.):

@1008 put pump intake @ approx 6" off Bottom

-After 7/8 PFAS Bottles DTW 18.33 dropped to 18.45 for final Bottle Sampled, Slight brown color in Bottle

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Enclosure 2 Laboratory Report

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-177378-1
Client Project/Site: Hercules Glens Falls 4Q20

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
11/10/2020 3:16:16 PM

Eddie Barnett, Project Manager I
(912)250-0280
Eddie.Barnett@Eurofinset.com

Table of Contents

Definitions/Glossary

Client: Ashland LLC
Job ID: 480-177378-1
Project/Site: Hercules Glens Falls 4Q20

Qualifiers

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-177378-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 4Q20

Report Number: 480-177378-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 10/31/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.4º C.

PERFLUORINATED HYDROCARBONS

Samples MW-OB30_20201028 (480-177378-1), DUP-01_20201028 (480-177378-2) and EB_20201028 (480-177378-3) were analyzed for Perfluorinated Hydrocarbons in accordance with EPA Method 537. The samples were prepared on 11/03/2020 and analyzed on 11/08/2020.

Perfluorododecanoic acid (PFDoA) recovered high for the MS of sample MW-OB30_20201028MS (480-177378-1) in batch 320-429544. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to the QC report for details.

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

Detection Summary

Client: Ashland LLC
Job ID: 480-177378-1
Project/Site: Hercules Glens Falls 4Q20

Client Sample ID: MW-OB30_20201028 — Lab Sample ID: 480-177378-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.7	J	4.7	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.3	J	1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.3	J	1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.0	J	1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.1		1.9	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.46	J	1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.4	J I	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.7	J	1.9	0.53	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	10		1.9	0.50	ng/L	1		537 (modified)	Total/NA
6:2 FTS	6.3		4.7	2.3	ng/L	1		537 (modified)	Total/NA

Client Sample ID: DUP-01_20201028 — Lab Sample ID: 480-177378-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.5	J	4.7	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.4	J	1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.3	J	1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.98	J	1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.2		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.43	J	1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.97	J	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.6	J	1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	13		1.9	0.51	ng/L	1		537 (modified)	Total/NA
6:2 FTS	6.5		4.7	2.4	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EB_20201028 — Lab Sample ID: 480-177378-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client: Ashland LLC
Project/Site: Hercules Glens Falls 4Q20

Job ID: 480-177378-1

Client Sample ID: MW-OB30_20201028
Date Collected: 10/28/20 10:35
Date Received: 10/31/20 08:00

Lab Sample ID: 480-177378-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.7**	**J**	4.7	2.2	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluoropentanoic acid (PFPeA)	**1.3**	**J**	1.9	0.46	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorohexanoic acid (PFHxA)	**1.3**	**J**	1.9	0.54	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluoroheptanoic acid (PFHpA)	**1.0**	**J**	1.9	0.23	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorooctanoic acid (PFOA)	**5.1**		1.9	0.79	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorononanoic acid (PFNA)	**0.46**	**J**	1.9	0.25	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.29	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.0	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorododecanoic acid (PFDoA)	1.9	U F1	1.9	0.51	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.2	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.68	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorobutanesulfonic acid (PFBS)	**1.4**	**J I**	1.9	0.19	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorohexanesulfonic acid (PFHxS)	**1.7**	**J**	1.9	0.53	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorooctanesulfonic acid (PFOS)	**10**		1.9	0.50	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.30	ng/L		11/03/20 18:56	11/08/20 01:04	1
Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.91	ng/L		11/03/20 18:56	11/08/20 01:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.7	U	4.7	1.1	ng/L		11/03/20 18:56	11/08/20 01:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.7	U	4.7	1.2	ng/L		11/03/20 18:56	11/08/20 01:04	1
6:2 FTS	**6.3**		4.7	2.3	ng/L		11/03/20 18:56	11/08/20 01:04	1
8:2 FTS	1.9	U	1.9	0.43	ng/L		11/03/20 18:56	11/08/20 01:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*45*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C5-PFPeA DNU	*96*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C2 PFHxA	*100*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C4 PFHpA	*108*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C4 PFOA	*108*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C5 PFNA	*105*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C2 PFDA	*93*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C2 PFUnA	*92*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C2 PFDoA	*108*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C2 PFTeDA	*76*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C3 PFBS	*106*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
18O2 PFHxS	*111*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C4 PFOS	*109*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
13C8 FOSA	*108*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
d3-NMeFOSAA	*104*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
d5-NEtFOSAA	*89*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
M2-6:2 FTS	*121*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*
M2-8:2 FTS	*114*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:04*	*1*

Client: Ashland LLC
Project/Site: Hercules Glens Falls 4Q20

Job ID: 480-177378-1

Client Sample ID: DUP-01_20201028
Date Collected: 10/28/20 00:00
Date Received: 10/31/20 08:00

Lab Sample ID: 480-177378-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.5**	**J**	4.7	2.3	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluoropentanoic acid (PFPeA)	**1.4**	**J**	1.9	0.46	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorohexanoic acid (PFHxA)	**1.3**	**J**	1.9	0.55	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluoroheptanoic acid (PFHpA)	**0.98**	**J**	1.9	0.24	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorooctanoic acid (PFOA)	**5.2**		1.9	0.80	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorononanoic acid (PFNA)	**0.43**	**J**	1.9	0.25	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.29	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.0	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.52	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.2	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.69	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorobutanesulfonic acid (PFBS)	**0.97**	**J**	1.9	0.19	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorohexanesulfonic acid (PFHxS)	**1.6**	**J**	1.9	0.54	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorooctanesulfonic acid (PFOS)	**13**		1.9	0.51	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.30	ng/L		11/03/20 18:56	11/08/20 01:31	1
Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.92	ng/L		11/03/20 18:56	11/08/20 01:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.7	U	4.7	1.1	ng/L		11/03/20 18:56	11/08/20 01:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.7	U	4.7	1.2	ng/L		11/03/20 18:56	11/08/20 01:31	1
6:2 FTS	**6.5**		4.7	2.4	ng/L		11/03/20 18:56	11/08/20 01:31	1
8:2 FTS	1.9	U	1.9	0.43	ng/L		11/03/20 18:56	11/08/20 01:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*59*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C5-PFPeA DNU	*109*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C2 PFHxA	*115*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C4 PFHpA	*118*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C4 PFOA	*126*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C5 PFNA	*122*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C2 PFDA	*107*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C2 PFUnA	*104*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C2 PFDoA	*89*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C2 PFTeDA	*65*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C3 PFBS	*115*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
18O2 PFHxS	*120*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C4 PFOS	*117*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
13C8 FOSA	*118*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
d3-NMeFOSAA	*120*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
d5-NEtFOSAA	*96*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
M2-6:2 FTS	*143*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*
M2-8:2 FTS	*132*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:31*	*1*

Client: Ashland LLC
Project/Site: Hercules Glens Falls 4Q20

Job ID: 480-177378-1

Client Sample ID: EB_20201028

Date Collected: 10/28/20 16:15
Date Received: 10/31/20 08:00

Lab Sample ID: 480-177378-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.6	U	4.6	2.2	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluoropentanoic acid (PFPeA)	1.9	U	1.9	0.45	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorohexanoic acid (PFHxA)	1.9	U	1.9	0.54	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluoroheptanoic acid (PFHpA)	1.9	U	1.9	0.23	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorooctanoic acid (PFOA)	1.9	U	1.9	0.79	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.25	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.29	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.0	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.51	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.2	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.68	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U	1.9	0.19	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorohexanesulfonic acid (PFHxS)	1.9	U	1.9	0.53	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorooctanesulfonic acid (PFOS)	1.9	U	1.9	0.50	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.30	ng/L		11/03/20 18:56	11/08/20 01:40	1
Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.91	ng/L		11/03/20 18:56	11/08/20 01:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.6	U	4.6	1.1	ng/L		11/03/20 18:56	11/08/20 01:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.6	U	4.6	1.2	ng/L		11/03/20 18:56	11/08/20 01:40	1
6:2 FTS	4.6	U	4.6	2.3	ng/L		11/03/20 18:56	11/08/20 01:40	1
8:2 FTS	1.9	U	1.9	0.43	ng/L		11/03/20 18:56	11/08/20 01:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*99*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C5-PFPeA DNU	*102*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C2 PFHxA	*96*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C4 PFHpA	*108*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C4 PFOA	*113*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C5 PFNA	*107*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C2 PFDA	*101*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C2 PFUnA	*114*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C2 PFDoA	*100*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C2 PFTeDA	*90*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C3 PFBS	*110*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
18O2 PFHxS	*114*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C4 PFOS	*111*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
13C8 FOSA	*108*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
d3-NMeFOSAA	*106*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
d5-NEtFOSAA	*100*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
M2-6:2 FTS	*113*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*
M2-8:2 FTS	*110*		*25 - 150*	*11/03/20 18:56*	*11/08/20 01:40*	*1*

Isotope Dilution Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 4Q20

Job ID: 480-177378-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
480-177378-1	MW-OB30_20201028	45	96	100	108	108	105	93	92
480-177378-1 MS	MW-OB30_20201028	48	103	108	115	116	113	111	94
480-177378-1 MSD	MW-OB30_20201028	45	100	101	110	108	105	99	102
480-177378-2	DUP-01_20201028	59	109	115	118	126	122	107	104
480-177378-3	EB_20201028	99	102	96	108	113	107	101	114
LCS 320-428275/2-A	Lab Control Sample	96	101	98	100	101	100	101	103
MB 320-428275/1-A	Method Blank	88	89	93	91	91	91	98	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
480-177378-1	MW-OB30_20201028	108	76	106	111	109	108	104	89
480-177378-1 MS	MW-OB30_20201028	97	87	119	119	119	120	114	100
480-177378-1 MSD	MW-OB30_20201028	108	95	111	115	116	115	118	98
480-177378-2	DUP-01_20201028	89	65	115	120	117	118	120	96
480-177378-3	EB_20201028	100	90	110	114	111	108	106	100
LCS 320-428275/2-A	Lab Control Sample	101	104	102	103	107	101	113	108
MB 320-428275/1-A	Method Blank	95	81	95	101	101	91	96	97

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-177378-1	MW-OB30_20201028	121	114
480-177378-1 MS	MW-OB30_20201028	121	111
480-177378-1 MSD	MW-OB30_20201028	119	128
480-177378-2	DUP-01_20201028	143	132
480-177378-3	EB_20201028	113	110
LCS 320-428275/2-A	Lab Control Sample	102	100
MB 320-428275/1-A	Method Blank	103	95

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5-PFPeA DNU
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-428275/1-A
Matrix: Water
Analysis Batch: 429544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.0	U	5.0	2.4	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluoropentanoic acid (PFPeA)	2.0	U	2.0	0.49	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorohexanoic acid (PFHxA)	2.0	U	2.0	0.58	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluoroheptanoic acid (PFHpA)	2.0	U	2.0	0.25	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorooctanoic acid (PFOA)	2.0	U	2.0	0.85	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorononanoic acid (PFNA)	2.0	U	2.0	0.27	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorodecanoic acid (PFDA)	2.0	U	2.0	0.31	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluoroundecanoic acid (PFUnA)	2.0	U	2.0	1.1	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorododecanoic acid (PFDoA)	2.0	U	2.0	0.55	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorotridecanoic acid (PFTriA)	2.0	U	2.0	1.3	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorotetradecanoic acid (PFTeA)	2.0	U	2.0	0.73	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.0	0.20	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorohexanesulfonic acid (PFHxS)	2.0	U	2.0	0.57	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.0	U	2.0	0.19	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorooctanesulfonic acid (PFOS)	2.0	U	2.0	0.54	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorodecanesulfonic acid (PFDS)	2.0	U	2.0	0.32	ng/L		11/03/20 18:56	11/08/20 00:46	1
Perfluorooctanesulfonamide (FOSA)	2.0	U	2.0	0.98	ng/L		11/03/20 18:56	11/08/20 00:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	5.0	U	5.0	1.2	ng/L		11/03/20 18:56	11/08/20 00:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	5.0	U	5.0	1.3	ng/L		11/03/20 18:56	11/08/20 00:46	1
6:2 FTS	5.0	U	5.0	2.5	ng/L		11/03/20 18:56	11/08/20 00:46	1
8:2 FTS	2.0	U	2.0	0.46	ng/L		11/03/20 18:56	11/08/20 00:46	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*88*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C5-PFPeA DNU	*89*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C2 PFHxA	*93*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C4 PFHpA	*91*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C4 PFOA	*91*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C5 PFNA	*91*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C2 PFDA	*98*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C2 PFUnA	*92*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C2 PFDoA	*95*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C2 PFTeDA	*81*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C3 PFBS	*95*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
18O2 PFHxS	*101*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C4 PFOS	*101*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
13C8 FOSA	*91*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
d3-NMeFOSAA	*96*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
d5-NEtFOSAA	*97*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
M2-6:2 FTS	*103*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*
M2-8:2 FTS	*95*		*25 - 150*	*11/03/20 18:56*	*11/08/20 00:46*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-428275/2-A
Matrix: Water
Analysis Batch: 429544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428275

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	43.9		ng/L		110	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	40.0		ng/L		100	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	43.0		ng/L		108	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	42.0		ng/L		105	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	41.7		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	40.0	43.6		ng/L		109	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	39.8		ng/L		100	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	41.0		ng/L		102	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	46.1		ng/L		115	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	39.3		ng/L		98	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	39.6		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	39.0		ng/L		110	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.0		ng/L		104	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.9		ng/L		105	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	37.7		ng/L		102	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	36.7		ng/L		95	71 - 131
Perfluorooctanesulfonamide (FOSA)	40.0	41.1		ng/L		103	73 - 133
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	41.6		ng/L		104	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	42.8		ng/L		107	76 - 136
6:2 FTS	37.9	36.5		ng/L		96	59 - 175
8:2 FTS	38.3	38.9		ng/L		102	75 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*96*		*25 - 150*
13C5-PFPeA DNU	*101*		*25 - 150*
13C2 PFHxA	*98*		*25 - 150*
13C4 PFHpA	*100*		*25 - 150*
13C4 PFOA	*101*		*25 - 150*
13C5 PFNA	*100*		*25 - 150*
13C2 PFDA	*101*		*25 - 150*
13C2 PFUnA	*103*		*25 - 150*
13C2 PFDoA	*101*		*25 - 150*
13C2 PFTeDA	*104*		*25 - 150*
13C3 PFBS	*102*		*25 - 150*
18O2 PFHxS	*103*		*25 - 150*
13C4 PFOS	*107*		*25 - 150*
13C8 FOSA	*101*		*25 - 150*
d3-NMeFOSAA	*113*		*25 - 150*
d5-NEtFOSAA	*108*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-428275/2-A
Matrix: Water
Analysis Batch: 429544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428275

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	*102*		*25 - 150*
M2-8:2 FTS	*100*		*25 - 150*

Lab Sample ID: 480-177378-1 MS
Matrix: Water
Analysis Batch: 429544

Client Sample ID: MW-OB30_20201028
Prep Type: Total/NA
Prep Batch: 428275

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	3.7	J	38.9	46.1		ng/L		109	76 - 136
Perfluoropentanoic acid (PFPeA)	1.3	J	38.9	40.4		ng/L		101	71 - 131
Perfluorohexanoic acid (PFHxA)	1.3	J	38.9	44.9		ng/L		112	73 - 133
Perfluoroheptanoic acid (PFHpA)	1.0	J	38.9	38.5		ng/L		96	72 - 132
Perfluorooctanoic acid (PFOA)	5.1		38.9	41.4		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	0.46	J	38.9	42.3		ng/L		108	75 - 135
Perfluorodecanoic acid (PFDA)	1.9	U	38.9	41.6		ng/L		107	76 - 136
Perfluoroundecanoic acid (PFUnA)	1.9	U	38.9	44.1		ng/L		113	68 - 128
Perfluorododecanoic acid (PFDoA)	1.9	U F1	38.9	57.3	F1	ng/L		147	71 - 131
Perfluorotridecanoic acid (PFTriA)	1.9	U	38.9	37.1		ng/L		96	71 - 131
Perfluorotetradecanoic acid (PFTeA)	1.9	U	38.9	41.0		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	1.4	J I	34.4	35.4		ng/L		99	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	1.7	J	35.4	36.4		ng/L		98	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	37.0	39.1		ng/L		106	76 - 136
Perfluorooctanesulfonic acid (PFOS)	10		36.1	46.1		ng/L		99	70 - 130
Perfluorodecanesulfonic acid (PFDS)	1.9	U	37.5	32.8		ng/L		88	71 - 131
Perfluorooctanesulfonamide (FOSA)	1.9	U	38.9	43.6		ng/L		112	73 - 133
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.7	U	38.9	42.1		ng/L		108	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.7	U	38.9	42.3		ng/L		109	76 - 136
6:2 FTS	6.3		36.8	47.1		ng/L		111	59 - 175
8:2 FTS	1.9	U	37.2	39.7		ng/L		107	75 - 135

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	*48*		*25 - 150*
13C5-PFPeA DNU	*103*		*25 - 150*
13C2 PFHxA	*108*		*25 - 150*
13C4 PFHpA	*115*		*25 - 150*
13C4 PFOA	*116*		*25 - 150*
13C5 PFNA	*113*		*25 - 150*
13C2 PFDA	*111*		*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
13C2 PFDoA	*97*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-177378-1 MS
Matrix: Water
Analysis Batch: 429544

Client Sample ID: MW-OB30_20201028
Prep Type: Total/NA
Prep Batch: 428275

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2 PFTeDA	87		25 - 150
13C3 PFBS	119		25 - 150
18O2 PFHxS	119		25 - 150
13C4 PFOS	119		25 - 150
13C8 FOSA	120		25 - 150
d3-NMeFOSAA	114		25 - 150
d5-NEtFOSAA	100		25 - 150
M2-6:2 FTS	121		25 - 150
M2-8:2 FTS	111		25 - 150

Lab Sample ID: 480-177378-1 MSD
Matrix: Water
Analysis Batch: 429544

Client Sample ID: MW-OB30_20201028
Prep Type: Total/NA
Prep Batch: 428275

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	3.7	J	38.3	44.2		ng/L		106	76 - 136	4	30
Perfluoropentanoic acid (PFPeA)	1.3	J	38.3	37.7		ng/L		95	71 - 131	7	30
Perfluorohexanoic acid (PFHxA)	1.3	J	38.3	42.5		ng/L		107	73 - 133	6	30
Perfluoroheptanoic acid (PFHpA)	1.0	J	38.3	40.6		ng/L		103	72 - 132	5	30
Perfluorooctanoic acid (PFOA)	5.1		38.3	41.6		ng/L		95	70 - 130	0	30
Perfluorononanoic acid (PFNA)	0.46	J	38.3	43.2		ng/L		112	75 - 135	2	30
Perfluorodecanoic acid (PFDA)	1.9	U	38.3	41.0		ng/L		107	76 - 136	2	30
Perfluoroundecanoic acid (PFUnA)	1.9	U	38.3	43.5		ng/L		114	68 - 128	1	30
Perfluorododecanoic acid (PFDoA)	1.9	U F1	38.3	43.8		ng/L		114	71 - 131	27	30
Perfluorotridecanoic acid (PFTriA)	1.9	U	38.3	33.4		ng/L		87	71 - 131	10	30
Perfluorotetradecanoic acid (PFTeA)	1.9	U	38.3	39.7		ng/L		104	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	1.4	J I	33.9	39.7		ng/L		113	67 - 127	11	30
Perfluorohexanesulfonic acid (PFHxS)	1.7	J	34.9	35.5		ng/L		97	59 - 119	2	30
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	36.5	38.3		ng/L		105	76 - 136	2	30
Perfluorooctanesulfonic acid (PFOS)	10		35.6	51.6		ng/L		116	70 - 130	11	30
Perfluorodecanesulfonic acid (PFDS)	1.9	U	36.9	34.7		ng/L		94	71 - 131	6	30
Perfluorooctanesulfonamide (FOSA)	1.9	U	38.3	43.7		ng/L		114	73 - 133	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.7	U	38.3	39.0		ng/L		102	76 - 136	8	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.7	U	38.3	42.1		ng/L		110	76 - 136	0	30
6:2 FTS	6.3		36.3	50.8		ng/L		123	59 - 175	7	30
8:2 FTS	1.9	U	36.7	37.9		ng/L		103	75 - 135	5	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA	45		25 - 150
13C5-PFPeA DNU	100		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-177378-1 MSD
Matrix: Water
Analysis Batch: 429544

Client Sample ID: MW-OB30_20201028
Prep Type: Total/NA
Prep Batch: 428275

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C2 PFHxA	101		25 - 150
13C4 PFHpA	110		25 - 150
13C4 PFOA	108		25 - 150
13C5 PFNA	105		25 - 150
13C2 PFDA	99		25 - 150
13C2 PFUnA	102		25 - 150
13C2 PFDoA	108		25 - 150
13C2 PFTeDA	95		25 - 150
13C3 PFBS	111		25 - 150
18O2 PFHxS	115		25 - 150
13C4 PFOS	116		25 - 150
13C8 FOSA	115		25 - 150
d3-NMeFOSAA	118		25 - 150
d5-NEtFOSAA	98		25 - 150
M2-6:2 FTS	119		25 - 150
M2-8:2 FTS	128		25 - 150

QC Association Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 4Q20

Job ID: 480-177378-1

LCMS

Prep Batch: 428275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-177378-1	MW-OB30_20201028	Total/NA	Water	3535	
480-177378-2	DUP-01_20201028	Total/NA	Water	3535	
480-177378-3	EB_20201028	Total/NA	Water	3535	
MB 320-428275/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-428275/2-A	Lab Control Sample	Total/NA	Water	3535	
480-177378-1 MS	MW-OB30_20201028	Total/NA	Water	3535	
480-177378-1 MSD	MW-OB30_20201028	Total/NA	Water	3535	

Analysis Batch: 429544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-177378-1	MW-OB30_20201028	Total/NA	Water	537 (modified)	428275
480-177378-2	DUP-01_20201028	Total/NA	Water	537 (modified)	428275
480-177378-3	EB_20201028	Total/NA	Water	537 (modified)	428275
MB 320-428275/1-A	Method Blank	Total/NA	Water	537 (modified)	428275
LCS 320-428275/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	428275
480-177378-1 MS	MW-OB30_20201028	Total/NA	Water	537 (modified)	428275
480-177378-1 MSD	MW-OB30_20201028	Total/NA	Water	537 (modified)	428275

Lab Chronicle

Client: Ashland LLC
Project/Site: Hercules Glens Falls 4Q20

Job ID: 480-177378-1

Client Sample ID: MW-OB30_20201028

Lab Sample ID: 480-177378-1

Date Collected: 10/28/20 10:35

Matrix: Water

Date Received: 10/31/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			428275	11/03/20 18:56	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	429544	11/08/20 01:04	K1S	TAL SAC

Client Sample ID: DUP-01_20201028

Lab Sample ID: 480-177378-2

Date Collected: 10/28/20 00:00

Matrix: Water

Date Received: 10/31/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			428275	11/03/20 18:56	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	429544	11/08/20 01:31	K1S	TAL SAC

Client Sample ID: EB_20201028

Lab Sample ID: 480-177378-3

Date Collected: 10/28/20 16:15

Matrix: Water

Date Received: 10/31/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			428275	11/03/20 18:56	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	429544	11/08/20 01:40	K1S	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Ashland LLC
Job ID: 480-177378-1
Project/Site: Hercules Glens Falls 4Q20

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-21
Arkansas DEQ	State	88-0691	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20 *
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	08-03-23
Nevada	State	CA000442021-1	07-31-21
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-20
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

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

Method Summary

Client: Ashland LLC
Job ID: 480-177378-1
Project/Site: Hercules Glens Falls 4Q20

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 4Q20

Job ID: 480-177378-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-177378-1	MW-OB30_20201028	Water	10/28/20 10:35	10/31/20 08:00	
480-177378-2	DUP-01_20201028	Water	10/28/20 00:00	10/31/20 08:00	
480-177378-3	EB_20201028	Water	10/28/20 16:15	10/31/20 08:00	

680 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Albany

Chain of Custody Record

eurofins | Environment Testing America

#224

Client Information	Sampler: Garrett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 680-118978-45375.1
Client Contact: Mr. Jim Vondracek	Phone: 860 992 2636	E-Mail: Eddie.Barnett@Eurofinset.com		Page: Page 1 of 1
Company: Ashland LLC				Job #:
Address: 5200 Blazer Parkway DS-4	Due Date Requested:			
City: Dublin	TAT Requested (days):			
State, Zip: OH, 43017				
Phone: 614-790-6146(Tel)	PO #: FY2021 PO Pending			
Email: jevondracek@ashland.com	WO #: Task 400			
Project Name: Hercules Glens Falls PFAS	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
K - EDTA
L - EDA
Other:

480-177378 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (24 Analytes)	Total Number of containe	Special Instructions/Note:
			Preservation Code:				N		
MW-OB30_20201028	10/28/20	1035	6	Water	N	Y	X	6	MS/MSD not Field Filter
DUP-01_20201028	10/28/20	—	G	Water	N	N	X	2	
EB_20201028	10/28/20	1615	C	Water	N	N	X		
				Water					
				Water					
				Water					

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/30/20 1445	Antea		10/30/20 1445	Eurofins
2	Relinquished by:	10/30/20 1700	Eurofins	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/31/20 800	Company TAT

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.1 #1

Ver: 01/16/2019

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-59838.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Eddie.Barnett@Eurofinset.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-177378-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 11/6/2020			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls 4Q20	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/3535_PFC PFAS, Standard List (24 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-OB30_20201028 (480-177378-1)	10/28/20	10:35 Eastern		Water			X	2	
MW-OB30_20201028 (480-177378-1MS)	10/28/20	10:35 Eastern	MS	Water			X	2	
MW-OB30_20201028 (480-177378-1MSD)	10/28/20	10:35 Eastern	MSD	Water			X	2	
DUP-01_20201028 (480-177378-2)	10/28/20	Eastern		Water			X	2	
EB_20201028 (480-177378-3)	10/28/20	16:15 Eastern		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	11/2/20 1700		[signature]	11/03/20 940	eta SAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: 1207833 | Cooler Temperature(s) °C and Other Remarks: 1.0

Ver: 01/16/2019

eurofins | Environment Testing TestAmerica

Sacramento Sample Receiving Notes

480-177378 Field Sheet

Job: _____

Tracking # : 1Z 88 3862 1733

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: IR-01 Corr. Factor: (+ / -) 0 °C

Ice ✓ Wet ✓ Gel _____ Other _____

Cooler Custody Seal: 1207833

Cooler ID: –

Temp Observed: 1.0 °C Corrected: 1.0 °C

From: Temp Blank ☐ Sample ☐

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐

Initials: MAN Date: 11/03/20

Unpacking/Labeling The Samples	Yes	No	NA
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: [illegible] Date: 11/03/20

Notes: _____

Trizma Lot #(s): _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☐	☐	☑
Log Release checked in TALS?	☐	☐	☑

Initials: [illegible] Date: 11/03/20

WK3-24C

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-177378-1

Login Number: 177378
List Number: 2
Creator: Stopa, Erik S

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-177378-1

Login Number: 177378
List Number: 3
Creator: Saephan, Kae C

List Source: Eurofins TestAmerica, Sacramento
List Creation: 11/03/20 02:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1207833
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	ob: 1.0c corr: 1.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Enclosure 3 DUSR

EHS Validation Report Number: 326

Former Ciba Geigy Facility
Queensbury, New York

Analyses performed by Eurofins TestAmerica, Sacramento, California

Sample Delivery Group (SDG): 480-177378
Analyses: PFAS
Review Level: DUSR

EHS Support

Report Date:
January 4, 2021

Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed for PFAS by Environmental Protection Agency (EPA) Method 537 Modified. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	PFAS Analysis
480-177378-1	480-177378-1	MW-OB30_20201028	Water	10/28/2020	X
480-177378-1	480-177378-2	DUP-01_20201028	Water	10/28/2020	X
480-177378-1	480-177378-3	EB_20201028	Water	10/28/2020	X

1 Introduction

Data were reviewed in accordance with TestAmerica Laboratories, Inc. Standard Operating Procedure (SOP) WS-LC-0025 “Per- and Polyfluorinated Substances (PFAS) in Water, Soils, Sediments and Tissue” Rev 3.3 12/03/2018. United States EPA (Environmental Protection Agency) Method 537 “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/ Tandem Mass Spectrometry (LC/MS/MS)” was referenced as needed, as were the Department of Defense (DoD) Department of Energy (DOE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories Version 5.2, 2018, National Functional Guidelines for High Resolution Superfund Methods Data Review, April 2016 and EPA Region 2 validation SOPs for high resolution methods. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC (quality control) is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

JN There is presumptive evidence for the presence of the material at an estimated value.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

Samples were received in good condition and properly preserved. The chain of custody was properly completed.

3 Assessment Summary and Data Usability

In this SDG, no QC (quality control) excursions encountered led to rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC variances and data qualification.

4 Per- and Polyfluorinated Alkyl Substances (PFAS) Analysis

4.1 Preservation and Holding Times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the table below.

Method	Matrix	Preservation	Holding Time
SOP WS-LC-0025 for Method 537 Modified	Water	≤10 °C from time of collection, ≤6 °C from time of laboratory receipt	28 days

4.2 Calibration

Acceptance criteria were met:

- The initial calibration RSD (relative standard deviation) values, and/or the coefficient values, were acceptable.
- The CCV %D (continuing calibration verification percent difference) results were within limits.

4.3 Blanks

Acceptance criteria were met; no detections were reported in the method blank nor the equipment blank associated with the samples in this data set.

4.4 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

Matrix spike recoveries and/or relative percent difference (RPD) values outside control limits are presented in the following table.

Sample ID	Analyte	Recovery		MS/MSD RPD
		MS	MSD	
480-177378-1	Perfluorododecanoic acid	> UL	Acceptable	Acceptable

RPD Relative Percent Difference
UL Upper Control Limit

As a consequence of this excursion, the listed result has been qualified as per the following table. In this instance, no qualification resulted because the result for the relevant PFAS analyte was non-detect in the unspiked parent sample.

Quality Control Nonconformance	Sample Result	Sample Result Qualification
Recovery > Upper control limit (UL)	Non-detect	No Action
	Detect	J
Recovery < Lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
Recovery < 10%	Non-detect	R
	Detect	J
MS/MSD RPD > Upper control limit (UL)	Non-detect	UJ
	Detect	J

4.6 Isotope Dilution Analytes

Acceptance criteria were met. Recoveries of isotope dilution analytes were within acceptance limits.

4.7 Compound Identification

The perfluorobutanesulfonic acid (PFBS) result in sample 480-177378-1 has been flagged by the laboratory as an estimated maximum possible concentration (EMPC). No other issues were evident in the chromatograms.

Peaks are identified as specific PFAS analytes if they meet certain criteria, including ion abundance criteria. When all criteria are met, the analyte of interest is quantitated and reported without flags. When peaks meet most criteria for positive identification, but do not meet ion abundance criteria, there is uncertainty in the quantitation of those analytes. The associated signals (that fail to meet ion abundance criteria) are quantitated; the resultant concentrations may include concentrations of interfering compounds. Those results are consequently reported by the laboratory as estimated maximum possible concentrations. Reported EMPC values for field samples are qualified as non-detect.

Sample Field ID	Sample Lab ID	Analyte	Reported EMPC Concentration
MW-OB30_20201028	480-177378-1	Perfluorobutanesulfonic acid (PFBS)	1.4 J

4.8 Field Duplicates

Acceptance criteria, shown in the table below, were met. One parent sample – field duplicate pair was included in this sample delivery group.

Quality control nonconformance	Sample Result	Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - or - -RPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or- -absolute difference > 3x the RL (soil/ sediment)	Non-detect	UJ
	Detect	J

4.9 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support