

Alyssa Sellwood, PE
Complex Sites Project Manager – Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
101 South Webster Street
P.O. Box 7921
Madison, WI 53707

Arcadis U.S., Inc.
126 North Jefferson Street
Milwaukee, Wisconsin 53202
www.arcadis.com

Date:
December 8, 2020

Subject:

Sample Results Notification, Tyco Fire Technology Center PFAS, 2700 Industrial Parkway South, Marinette, Wisconsin
BRRTS Activity#: 02-38-580694

Tyco Environmental Assessment
Call Line:
(800) 314-1381

Responsible Party:
Tyco Fire Products LP
2700 Industrial Parkway S
Marinette, WI 54143

Dear Ms. Sellwood:

Site Name:
Tyco Fire Technology
Center

On behalf of Tyco Fire Products LP (Tyco), Arcadis is providing this *Sample Results Notification* for off-site investigation activities related to the Tyco Fire Technology Center PFAS site located at 2700 Industrial Parkway South in Marinette, Wisconsin (Site).

BRRTS No.:
02-38-580694

This *Sample Results Notification* is being provided to satisfy NR716.14(2) for groundwater samples that were collected from Ditch B as part of a pre-design investigation for a source-control solution. Arcadis collected 30 groundwater samples from Ditch B on November 5 and 6, 2020 consistent with our previously submitted *Pre-Design Investigation Work Plan*. We recorded the sample location, date, and other information and had the sample tested at an accredited, independent laboratory. That testing is now complete, and the results are summarized in the attached table with sample locations depicted in the attached figure.

The results are generally consistent with those from the October 10, 2020 sampling event and will support our effort to move from interim measures toward a permanent source-control solution.

Groundwater samples were taken in the same locations as the surface water samples upstream and downstream from the existing Ditch B treatment system but from beneath the bottom of the ditch. Also consistent with the previously shared surface water results, the groundwater results in this area also show elevated levels of PFAS.

Owners of each parcel that was accessed to collect the samples were notified of their results in a letter received December 8, 2020. Those letters are provided as a separate attachment for your convenience.

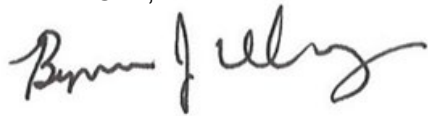
Alyssa Sellwood
Wisconsin Department of Natural Resources
December 8, 2020

These results will be combined with other previously collected and future planned sampling results and evaluated comprehensively in a future submittal.

Please do not hesitate to call us if you have any questions.

Sincerely,

Arcadis U.S., Inc.

A handwritten signature in black ink, appearing to read "Benjamin J. Verburg". The signature is fluid and cursive, with the first name being the most prominent.

Benjamin J. Verburg, P.E.
Principal Engineer

Copies:

David Neste
Bridget Kelly
Jeff Danko
Scott Wahl

Attachments:

Summary Results Table
Sample Locations Figure
Laboratory Reports
Owner Notification Letters (separate electronic file)

Table 1 - Groundwater Sample Results

Chemical Name	Location			GW-L01	GW-L02	GW-L03	GW-L04	GW-L05	GW-L05	GW-L06
	ES	PAL	Units	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 FD	11/5/2020 N
PFOA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	9.8	8.9	1800 D	8.5	11	9.2	6.1
PFOS	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	0.99 J	0.66 J	95	< 1.8 U	1.5 J	1.6 J	1.8 J
PFBS	450000	90000	ng/l	< 1.9 U	3.4	5.5	0.65 J	0.93 J	0.84 J	0.26 J
PFHpA	--	--	ng/l	1.2 J	15	96	2.7	3.9	3.3	1.2 J
PFHxS	40	4	ng/l	0.62 J	0.54 J	46	1.5 J	1.1 J	0.86 J	< 1.9 U
PFNA	30	3	ng/l	0.47 J	0.35 J	64	0.64 J	0.97 J	0.60 J	1.7 J
PFDA	300	60	ng/l	< 1.9 U	< 1.9 U	3.9	< 1.8 U	0.43 J	< 1.9 U	< 1.9 U
PFDoA	500	100	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFHxA	150000	30000	ng/l	2.4	25	230	4.7	5.6	4.6	1.6 J
PFTeA	10000	2000	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFTriA	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFUnA	3000	600	ng/l	< 1.9 U	< 1.9 U	1.3 J	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
NEtFOSAA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 4.7 U	< 4.7 U	2.5 J	< 4.4 U	< 5.0 U	< 4.7 U	< 4.8 U
NMeFOSAA	--	--	ng/l	< 4.7 U	< 4.7 U	< 5.9 U	< 4.4 U	< 5.0 U	< 4.7 U	< 4.8 U
PFBA	10000	2000	ng/l	3.4 J	12	63	7.0	10	9.5	2.3 J
PFPeA	--	--	ng/l	2.9	23	200	6.0	6.7	6.3	2.2
PFHxDA	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 UJ-	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFODA	400000	80000	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFPeS	--	--	ng/l	< 1.9 U	0.63 J	5.4	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFHpS	--	--	ng/l	< 1.9 U	< 1.9 U	1.8 J	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFNS	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFDS	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
PFDoS	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
FOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.9 U	9.5	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
NEtFOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
NMeFOSA	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
NMeFOSE	--	--	ng/l	< 3.8 U	< 3.7 U	< 4.7 U	< 3.5 U	< 4.0 U	< 3.7 U	< 3.8 U
NEtFOSE	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
4:2 FTS	--	--	ng/l	< 1.9 U	< 1.9 U	21	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
6:2 FTS	--	--	ng/l	< 4.7 U	< 4.7 U	1100 D	5.2	< 5.0 U	5.4	17
8:2 FTS	--	--	ng/l	< 1.9 U	0.43 J	85	< 1.8 U	< 2.0 U	< 1.9 U	1.6 J
10:2 FTS	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
DONA	3000	600	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
GenX	300	30	ng/l	< 3.8 U	< 3.7 U	< 4.7 U	< 3.5 U	< 4.0 U	< 3.7 U	< 3.8 U
F-53B Major	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
F-53B Minor	--	--	ng/l	< 1.9 U	< 1.9 U	< 2.3 U	< 1.8 U	< 2.0 U	< 1.9 U	< 1.9 U
Alkalinity	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Alkalinity, Carbonate	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids	--	--	mg/l	240	1000	1900	1400	91 J	24 J	130
Iron, Total Recoverable	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Dissolved Inorganic Carbon	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon 2	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA

Table 1 - Groundwater Sample Results

Chemical Name	Location			GW-L07	GW-L08	GW-L09	GW-L10	GW-M01	GW-M01	GW-M02
	ES	PAL	Units	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 FD	11/5/2020 N
PFOA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	97	21	11	6.1	15	15	42
PFOS	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	3.1	5.8	7.1	4.0 JN	5.5	5.5	5.3
PFBS	450000	90000	ng/l	1.1 J	0.48 J	0.92 J	1.3 J	1.1 J	1.1 J	< 2.0 UB
PFHpA	--	--	ng/l	13	2.0	2.8	5.3	9.0	8.9	4.3
PFHxS	40	4	ng/l	4.3	0.77 J	1.9 J	1.2 J	1.7 J	1.8 J	2.7
PFNA	30	3	ng/l	3.2	1.7	1.1 J	1.1 J	1.2 J	1.0 J	2.4
PFDA	300	60	ng/l	< 1.9 U	0.37 J	0.57 J	0.37 J	0.41 J	0.47 J	0.69 J
PFDoA	500	100	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFHxA	150000	30000	ng/l	33	4.7	4.4	6.5	12	11	8.4
PFTeA	10000	2000	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFTriA	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFUnA	3000	600	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
NEtFOSAA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 4.7 U	< 4.3 U	< 4.9 U	< 5.8 U	< 4.8 U	< 5.2 U	< 5.0 U
NMeFOSAA	--	--	ng/l	< 4.7 U	< 4.3 U	< 4.9 U	< 5.8 U	< 4.8 U	< 5.2 U	< 5.0 U
PFBA	10000	2000	ng/l	13	3.4 J	6.8	9.3	11	11	4.8 J
PFPeA	--	--	ng/l	36	4.0	5.0	8.1	15	15	8.4
PFHxDA	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFODA	400000	80000	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFPeS	--	--	ng/l	0.53 J	< 1.7 U	0.35 J	< 2.3 U	0.44 J	0.40 J	0.32 J
PFHpS	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFNS	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFDS	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
PFDoS	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
FOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	1.3 J	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	1.4 J
NEtFOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
NMeFOSA	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
NMeFOSE	--	--	ng/l	< 3.7 U	< 3.4 U	< 3.9 U	< 4.6 U	< 3.8 U	< 4.2 U	< 4.0 U
NEtFOSE	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
4:2 FTS	--	--	ng/l	2.9	0.23 J	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	0.45 J
6:2 FTS	--	--	ng/l	130	14	4.0 J	4.0 J	5.1	6.6	12
8:2 FTS	--	--	ng/l	1.8 J	7.3	3.3	1.2 J	6.8	7.3	10
10:2 FTS	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
DONA	3000	600	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
GenX	300	30	ng/l	< 3.7 U	< 3.4 U	< 3.9 U	< 4.6 U	< 3.8 U	< 4.2 U	< 4.0 U
F-53B Major	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
F-53B Minor	--	--	ng/l	< 1.9 U	< 1.7 U	< 2.0 U	< 2.3 U	< 1.9 U	< 2.1 U	< 2.0 U
Alkalinity	--	--	mg/l	NA	NA	NA	170	200	NA	NA
Alkalinity, Bicarbonate	--	--	mg/l	NA	NA	NA	170	180	NA	NA
Alkalinity, Carbonate	--	--	mg/l	NA	NA	NA	< 5.0 U	14	NA	NA
Total Suspended Solids	--	--	mg/l	25	110	240	110	77 J	170 J	600
Iron, Total Recoverable	--	--	mg/l	NA	NA	NA	6.1	0.22	NA	NA
Iron, Dissolved	--	--	mg/l	NA	NA	NA	11	13	NA	NA
Dissolved Inorganic Carbon	--	--	mg/l	NA	NA	NA	13	12	NA	NA
Total Organic Carbon 2	--	--	mg/l	NA	NA	NA	14	14	NA	NA

Table 1 - Groundwater Sample Results

Chemical Name	Location			GW-M03	GW-M04	GW-M05	GW-M06	GW-M07	GW-M08	GW-M09
	ES	PAL	Units	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N	11/5/2020 N
PFOA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	5400 D	1000 D	120	970 D	5200 D	130	74
PFOS	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	210	140	42	11	470 D	22 JN	42
PFBS	450000	90000	ng/l	20	3.4	< 1.9 UB	5.8	7.4	1.4 J	2.9
PFHpA	--	--	ng/l	260	38	8.8	68	550 D	41	53
PFHxS	40	4	ng/l	140	30	7.6	69	240	12	5.2
PFNA	30	3	ng/l	92	18	11	12	240	6.5	13
PFDA	300	60	ng/l	2.8	3.7	4.0	0.32 J	21	1.3 JN	13
PFDoA	500	100	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
PFHxA	150000	30000	ng/l	630 D	94	15	170	1100 D	75	110
PFTeA	10000	2000	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	1.0 J	< 1.9 U
PFTriA	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
PFUnA	3000	600	ng/l	< 2.0 U	< 1.9 U	7.9 JN	< 1.9 U	27	< 2.3 U	< 1.9 U
NEtFOSAA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	10	11	10	< 4.8 U	18	< 5.6 U	< 4.8 U
NMeFOSAA	--	--	ng/l	< 4.9 U	< 4.7 U	< 4.7 U	< 4.8 U	< 5.3 U	< 5.6 U	< 4.8 U
PFBA	10000	2000	ng/l	110	24	8.7	38	250	33	59
PFPeA	--	--	ng/l	380	60	14	120	1200 D	110	170
PFHxDA	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
PFODA	400000	80000	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
PFPeS	--	--	ng/l	30	3.9	0.59 J	6.1	11	0.88 J	0.70 J
PFHpS	--	--	ng/l	7.6	2.8	0.51 J	0.83 J	6.0	< 2.3 U	< 1.9 U
PFNS	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
PFDS	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
PFDoS	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
FOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	39	42	68	< 1.9 U	210	2.3	16
NEtFOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
NMeFOSA	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
NMeFOSE	--	--	ng/l	< 4.0 U	< 3.8 U	< 3.7 U	< 3.9 U	< 4.2 U	< 4.5 U	< 3.9 U
NEtFOSE	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
4:2 FTS	--	--	ng/l	120	16	2.1	29	120	3.3	0.60 J
6:2 FTS	--	--	ng/l	2300 D	520 D	140	1200 D	4700 D	280	200
8:2 FTS	--	--	ng/l	38	92	180	3.7	850 D	39	330
10:2 FTS	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	9.4	< 2.3 U	< 1.9 U
DONA	3000	600	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
GenX	300	30	ng/l	< 4.0 U	< 3.8 U	< 3.7 U	< 3.9 U	< 4.2 U	< 4.5 U	< 3.9 U
F-53B Major	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
F-53B Minor	--	--	ng/l	< 2.0 U	< 1.9 U	< 1.9 U	< 1.9 U	< 2.1 U	< 2.3 U	< 1.9 U
Alkalinity	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Alkalinity, Carbonate	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Total Suspended Solids	--	--	mg/l	44	100	48	60	110	250	200
Iron, Total Recoverable	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Dissolved Inorganic Carbon	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon 2	--	--	mg/l	NA	NA	NA	NA	NA	NA	NA

Table 1 - Groundwater Sample Results

Chemical Name	Location Sample Date Sample Type			GW-M10 11/5/2020 N	GW-U01 11/6/2020 N	GW-U02 11/6/2020 N	GW-U03 11/6/2020 N	GW-U03 11/6/2020 FD	GW-U04 11/6/2020 N	GW-U05 11/6/2020 N
	ES	PAL	Units							
PFOA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	240	75	1200 D	15000	15000	12000	480 D
PFOS	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	26	79 JN	110 J+	1100	890	1000	190
PFBS	450000	90000	ng/l	2.1	1.4 J-	3.9	< 190 U	< 190 U	< 180 U	1.5 J
PFHpA	--	--	ng/l	47	38	270	2100	2400	1900	89
PFHxS	40	4	ng/l	97	21 J-	65 J+	170 J	160 J	120 J	16
PFNA	30	3	ng/l	7.4	13 J-	140 J+	700	630	350	14
PFDA	300	60	ng/l	0.68 J	< 1.9 U	4.2	110 J	67 J	< 180 U	2.5
PFDoA	500	100	ng/l	< 1.8 U	< 1.9 UJ-	< 1.9 U	< 190 U	< 190 U	< 180 U	0.64 JN
PFHxA	150000	30000	ng/l	67	62	750 D	5500	5300	5800	140
PFTeA	10000	2000	ng/l	< 1.8 U	< 1.9 UJ-	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
PFTriA	--	--	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
PFUnA	3000	600	ng/l	< 1.8 U	< 1.9 UJ-	1.6 J	< 190 U	< 190 U	< 180 U	< 1.9 U
NEtFOSAA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 4.6 U	< 4.9 UJ-	3.4 J	< 470 U	< 480 U	< 450 U	< 4.7 U
NMeFOSAA	--	--	ng/l	< 4.6 U	< 4.9 UJ-	< 4.7 U	< 470 U	< 480 U	< 450 U	< 4.7 U
PFBA	10000	2000	ng/l	28	31	250	1300	1300	1400	62
PFPeA	--	--	ng/l	63	52	920 D	5900	4900	5700	150
PFHxDA	--	--	ng/l	< 1.8 U	< 1.9 UJ-	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
PFODA	400000	80000	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
PFPeS	--	--	ng/l	1.6 J	0.84 J	4.9	< 190 U	< 190 U	< 180 U	1.3 J
PFHpS	--	--	ng/l	1.3 J	2.8	2.8	< 190 U	< 190 U	< 180 U	1.5 J
PFNS	--	--	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
PFDS	--	--	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
PFDoS	--	--	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
FOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.8 U	1.1 J	6.1	< 190 U	< 190 U	< 180 U	< 1.9 U
NEtFOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
NMeFOSA	--	--	ng/l	< 1.8 U	0.48 J	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
NMeFOSE	--	--	ng/l	< 3.7 U	< 3.9 U	< 3.7 U	< 380 U	< 380 U	< 360 U	< 3.8 U
NEtFOSE	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
4:2 FTS	--	--	ng/l	0.48 J	0.77 J	110 J+	470	390	390	< 1.9 U
6:2 FTS	--	--	ng/l	54	78	6900 D	28000 D	32000 D	46000 D	37
8:2 FTS	--	--	ng/l	18	20	130 J+	2900 J	2100 J	3200	13
10:2 FTS	--	--	ng/l	< 1.8 U	< 1.9 U	< 1.9 UJ-	< 190 U	< 190 U	< 180 U	< 1.9 U
DONA	3000	600	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
GenX	300	30	ng/l	< 3.7 U	< 3.9 UJ-	< 3.7 U	< 380 U	< 380 U	< 360 U	< 3.8 U
F-53B Major	--	--	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
F-53B Minor	--	--	ng/l	< 1.8 U	< 1.9 U	< 1.9 U	< 190 U	< 190 U	< 180 U	< 1.9 U
Alkalinity	--	--	mg/l	NA	NA	NA	250	NA	NA	NA
Alkalinity, Bicarbonate	--	--	mg/l	NA	NA	NA	250	NA	NA	NA
Alkalinity, Carbonate	--	--	mg/l	NA	NA	NA	< 5.0 U	NA	NA	NA
Total Suspended Solids	--	--	mg/l	230	NA	69	210 J	55 J	1700	500
Iron, Total Recoverable	--	--	mg/l	NA	NA	NA	4.8	NA	NA	NA
Iron, Dissolved	--	--	mg/l	NA	NA	NA	8.5	NA	NA	NA
Dissolved Inorganic Carbon	--	--	mg/l	NA	NA	NA	15	NA	NA	NA
Total Organic Carbon 2	--	--	mg/l	NA	NA	NA	12	NA	NA	NA

Table 1 - Groundwater Sample Results

Chemical Name	Location			GW-U06	GW-U07	GW-U08	GW-U09	GW-U10
	ES	PAL	Units	11/6/2020 N	11/6/2020 N	11/6/2020 N	11/6/2020 N	11/6/2020 N
PFOA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	180	140	350	70	6.8
PFOS	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	21	39	48 JN	8.1	< 2.0 U
PFBS	450000	90000	ng/l	1.2 J	1.9	5.8	< 1.9 U	0.49 J
PFHpA	--	--	ng/l	94	110	130	45	12
PFHxS	40	4	ng/l	22	36	150	5.6	1.2 J
PFNA	30	3	ng/l	43	67	27	5.9	0.28 J
PFDA	300	60	ng/l	0.75 J	1.1 J	0.88 J	1.9	< 2.0 U
PFDoA	500	100	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	0.61 J	< 2.0 U
PFHxA	150000	30000	ng/l	140	190	190	63	23
PFTeA	10000	2000	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 UJ-
PFTriA	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
PFUnA	3000	600	ng/l	2.6	3.4 JN	< 1.8 U	< 1.9 U	< 2.0 U
NEtFOSAA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 4.7 U	< 4.6 U	< 4.6 U	2.0 J-	< 4.9 U
NMeFOSAA	--	--	ng/l	< 4.7 U	< 4.6 U	< 4.6 U	1.3 J	< 4.9 U
PFBA	10000	2000	ng/l	67	97	89	38	16
PFPeA	--	--	ng/l	160	270	230	90	37
PFHxDA	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 UJ-
PFODA	400000	80000	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
PFPeS	--	--	ng/l	0.81 J	2.5	5.7	< 1.9 U	< 2.0 U
PFHpS	--	--	ng/l	1.0 J	1.7 J	2.0	< 1.9 U	< 2.0 U
PFNS	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
PFDS	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
PFDoS	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
FOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	1.1 J	< 2.0 U
NEtFOSA	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
NMeFOSA	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	0.60 J	< 2.0 U
NMeFOSE	--	--	ng/l	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.9 U
NEtFOSE	20 ⁽¹⁾	2 ⁽¹⁾	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 UJ-
4:2 FTS	--	--	ng/l	0.50 J	2.5	4.9	0.54 J	< 2.0 U
6:2 FTS	--	--	ng/l	60	350 D	280 D	44	9.8
8:2 FTS	--	--	ng/l	3.6	8.0	10 DJ	4.8	< 2.0 U
10:2 FTS	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
DONA	3000	600	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
GenX	300	30	ng/l	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.9 U
F-53B Major	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
F-53B Minor	--	--	ng/l	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 2.0 U
Alkalinity	--	--	mg/l	NA	NA	NA	NA	NA
Alkalinity, Bicarbonate	--	--	mg/l	NA	NA	NA	NA	NA
Alkalinity, Carbonate	--	--	mg/l	NA	NA	NA	NA	NA
Total Suspended Solids	--	--	mg/l	370	240	160	210	2500
Iron, Total Recoverable	--	--	mg/l	NA	NA	NA	NA	NA
Iron, Dissolved	--	--	mg/l	NA	NA	NA	NA	NA
Dissolved Inorganic Carbon	--	--	mg/l	NA	NA	NA	NA	NA
Total Organic Carbon 2	--	--	mg/l	NA	NA	NA	NA	NA

Notes:

Concentrations above Recommended Enforcement Standard (ES) are boldfaced

Concentrations above Recommended Preventive Action Limit (PAL) are italicized

< RL

⁽¹⁾ = Combined criteria for FOSA, NEtFOSE, NEtFOSA, NetFOSAA, PFOS, and PFOA

J = Result is between method detection limit and reporting limit, and is therefore estimated.

U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

D = Dilution required for sample analysis.

UJ = The compound was not detected above the reported sample method detection limit. However, the reported limit is approximate and may or may not represent the actual method detection limit.

J- = The result is an estimated quantity. The associated numerical value is expected to have a negative or low bias.

J+ = The result is an estimated quantity. The associated numerical value is expected to have a positive or high bias.

JN = The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

UB = Compound is considered non-detect at the listed value due to associated blank contamination

PFOA = Perfluorooctanoic acid (C8)

PFOS = Perfluorooctanesulfonic acid (C8)

PFBS = Perfluorobutanesulfonic acid (C4)

PFHpA = Perfluoroheptanoic acid (C7)

PFHxS = Perfluorohexanesulfonic acid (C6)

PFNA = Perfluorononanoic acid (C9)

PFDA = Perfluorodecanoic acid (C10)

PFDoA = Perfluorododecanoic acid (C12)

PFHxA = Perfluorohexanoic acid (C6)

PFTeA = Perfluorotetradecanoic acid (C14)

PFTriA = Perfluorotridecanoic acid (C13)

PFUnA = Perfluoroundecanoic acid (C11)

NEtFOSAA = N-ethylperfluorooctanesulfonamidoacetic acid (C12)

NMeFOSAA = N-methylperfluorooctanesulfonamidoacetic acid (C11)

PFBA = Perfluorobutanoic acid (C4)

PFPeA = Perfluoropentanoic acid (C5)

PFHxDA = Perfluoro-n-hexadecanoic acid (C16)

PFODA = Perfluoro-n-octadecanoic acid (C18)

PFPeS = Perfluoropentanesulfonic acid (C5)

PFHpS = Perfluoroheptanesulfonic acid (C7)

PFNS = Perfluorononanesulfonic acid (C9)

PFDS = Perfluorodecanesulfonic acid (C10)

PFDoS = Perfluorododecanesulfonic acid (C12)

FOSA = Perfluorooctanesulfonamide (C8)

NEtFOSA = N-ethylperfluorooctanesulfonamide (C10)

NMeFOSA = N-methylperfluorooctanesulfonamide (C9)

NMeFOSE = N-methylperfluorooctanesulfonamidoethanol (C11)

NEtFOSE = N-ethylperfluorooctanesulfonamidoethanol (C12)

4:2 FTS = 4:2 fluorotelomer sulfonate (C6)

6:2 FTS = 6:2 fluorotelomer sulfonate (C8)

8:2 FTS = 8:2 fluorotelomer sulfonate (C10)

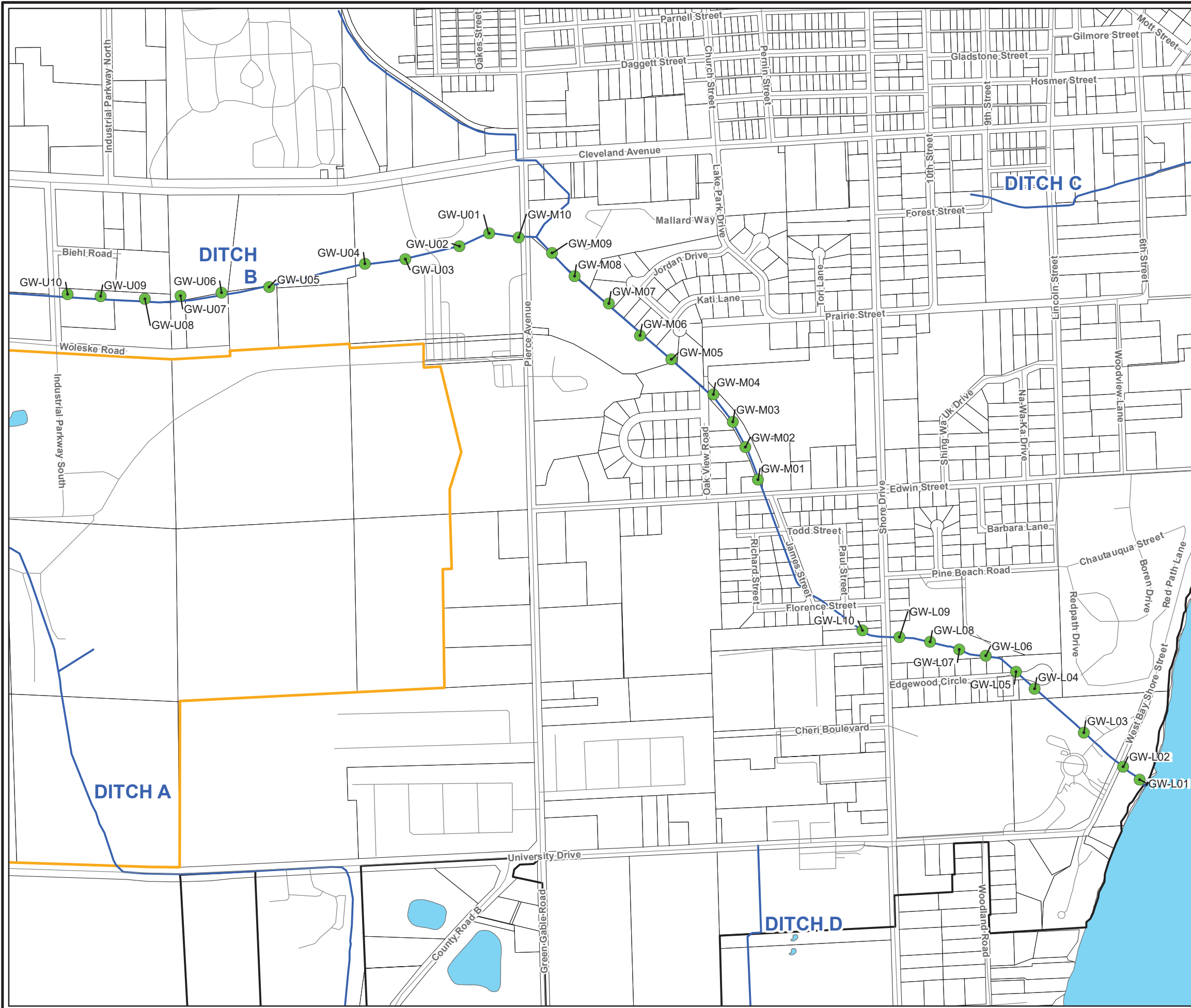
10:2 FTS = 10:2 fluorotelomer sulfonate (C12)

DONA = 4,8-Dioxa-3H-perfluorononanoic acid (C7)

GenX = Hexafluoropropylene oxide dimer acid (C6)

F-53B Major = 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (C8)

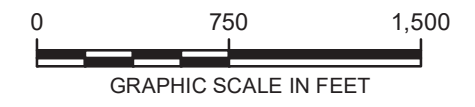
F-53B Minor = 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (C10)



LEGEND:

- GROUNDWATER SAMPLE LOCATION
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- PARCEL BOUNDARY
- ROAD
- DITCH/STREAM
- WATERBODY

- NOTES:**
1. CITY BOUNDARY DATA SOURCE: WISCONSIN LEGISLATIVE TECHNOLOGY SERVICES BUREAU, WISCONSIN COUNTY CLERKS AND LAND INFORMATION OFFICES, ACCESSED FALL 2017.
 2. DITCH/STREAM AND WATERBODY DATA SOURCE: U.S. GEOLOGICAL SURVEY NATIONAL HYDROGRAPHY DATASET, ACCESSED FALL 2017.
 3. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.



TYCO FIRE TECHNOLOGY CENTER
 MARINETTE, WISCONSIN

GROUNDWATER SAMPLE LOCATIONS

ARCADIS | **FIGURE 1**

ANALYTICAL REPORT

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-190766-1
Client Project/Site: Marinette 30062361.00001

For:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Attn: Lisa Rutkowski



Authorized for release by:
11/20/2020 3:02:06 PM
Robin Kintz, Project Manager II
(708)534-5200
Robin.Kintz@Eurofinset.com

Designee for
Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Job ID: 500-190766-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-190766-1

Comments

No additional comments.

Receipt

The samples were received on 11/7/2020 9:55 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 11 coolers at receipt time were 0.1° C, 1.0° C, 1.2° C, 1.4° C, 1.6° C, 1.8° C, 2.0° C, 2.5° C, 2.6° C, 2.7° C and 2.7° C.

Metals

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

LCMS

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C2 PFHxDA: 500-190766-3. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2 FTS in the following samples: 500-190766-6, 500-190766-6[MS] and 500-190766-7. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several IDA in the following samples: 500-190766-6[MSD] and 500-190766-11. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following sample: 500-190766-9. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgement was used to positively identify the analyte. 500-190766-10

Method 537 (modified): Results for sample 500-190766-3 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

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

General Chemistry

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

Organic Prep

Method 3535: The following samples contained a thin layer of sediment at the bottom of the bottle prior to extraction: 500-190766-1, 500-190766-2, 500-190766-3, 500-190766-4, 500-190766-5, 500-190766-6, 500-190766-6[MS], 500-190766-6[MSD], 500-190766-7, 500-190766-8, 500-190766-9, 500-190766-10 and 500-190766-11.

320-431320

Method: 3535 PFC-W

Method 3535: The following samples were brown prior to extraction: 500-190766-1, 500-190766-2, 500-190766-3 and 500-190766-4.

320-431320

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Job ID: 500-190766-1 (Continued)

Laboratory: Eurofins TestAmerica, Chicago (Continued)

Method: 3535 PFC-W

Method 3535: The following samples were yellow prior to extraction: 500-190766-5, 500-190766-10 and 500-190766-11.

320-431320

Method: 3535 PFC-W

Method 3535: During the solid phase extraction process, the following samples contained non-settable particulates which clogged the solid phase extraction column: 500-190766-1, 500-190766-2, 500-190766-3, 500-190766-4, 500-190766-5, 500-190766-6, 500-190766-6[MS], 500-190766-6[MSD], 500-190766-7, 500-190766-8, 500-190766-9 and 500-190766-10.

320-431320

Method: 3535 PFC-W

Method 3535: Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation: 500-190766-3, 500-190766-5, 500-190766-6[MSD], 500-190766-10 and 500-190766-12.

320-431320

Method: 3535 PFC-W

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
6010C	Metals (ICP)	SW846	TAL CHI
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
FILTRATION	Sample Filtration	None	TAL CHI

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-190766-1	GW-L01 (11052020)	Water	11/05/20 08:30	11/07/20 09:55	
500-190766-2	GW-L02 (11052020)	Water	11/05/20 08:45	11/07/20 09:55	
500-190766-3	GW-L03 (11052020)	Water	11/05/20 09:05	11/07/20 09:55	
500-190766-4	GW-L04 (11052020)	Water	11/05/20 09:15	11/07/20 09:55	
500-190766-5	GW-L05 (11052020)	Water	11/05/20 09:30	11/07/20 09:55	
500-190766-6	GW-L06 (11052020)	Water	11/05/20 10:00	11/07/20 09:55	
500-190766-7	GW-L07 (11052020)	Water	11/05/20 10:30	11/07/20 09:55	
500-190766-8	GW-L08 (11052020)	Water	11/05/20 10:45	11/07/20 09:55	
500-190766-9	GW-L09 (11052020)	Water	11/05/20 11:00	11/07/20 09:55	
500-190766-10	GW-L10 (11052020)	Water	11/05/20 11:25	11/07/20 09:55	
500-190766-11	DUP-01 (11052020)	Water	11/05/20 00:00	11/07/20 09:55	
500-190766-12	Field Blank-11-5-2020	Water	11/05/20 08:20	11/07/20 09:55	



Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L01 (11052020)

Lab Sample ID: 500-190766-1

Date Collected: 11/05/20 08:30

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.4	J	4.7	2.3	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoropentanoic acid (PFPeA)	2.9		1.9	0.46	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorohexanoic acid (PFHxA)	2.4		1.9	0.55	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoroheptanoic acid (PFHpA)	1.2	J	1.9	0.23	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorooctanoic acid (PFOA)	9.8		1.9	0.80	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorononanoic acid (PFNA)	0.47	J	1.9	0.25	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.84	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.28	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorohexanesulfonic acid (PFHxS)	0.62	J	1.9	0.54	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorooctanesulfonic acid (PFOS)	0.99	J	1.9	0.51	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluoronanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		11/13/20 04:24	11/13/20 20:34	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.92	ng/L		11/13/20 04:24	11/13/20 20:34	1
NEtFOSA	<1.9		1.9	0.82	ng/L		11/13/20 04:24	11/13/20 20:34	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:24	11/13/20 20:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:24	11/13/20 20:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7		4.7	1.2	ng/L		11/13/20 04:24	11/13/20 20:34	1
NMeFOSE	<3.8		3.8	1.3	ng/L		11/13/20 04:24	11/13/20 20:34	1
NEtFOSE	<1.9		1.9	0.80	ng/L		11/13/20 04:24	11/13/20 20:34	1
4:2 FTS	<1.9		1.9	0.23	ng/L		11/13/20 04:24	11/13/20 20:34	1
6:2 FTS	<4.7		4.7	2.3	ng/L		11/13/20 04:24	11/13/20 20:34	1
8:2 FTS	<1.9		1.9	0.43	ng/L		11/13/20 04:24	11/13/20 20:34	1
10:2 FTS	<1.9		1.9	0.63	ng/L		11/13/20 04:24	11/13/20 20:34	1
DONA	<1.9		1.9	0.38	ng/L		11/13/20 04:24	11/13/20 20:34	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		11/13/20 04:24	11/13/20 20:34	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:24	11/13/20 20:34	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 20:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	48		25 - 150				11/13/20 04:24	11/13/20 20:34	1
13C5 PFPeA	51		25 - 150				11/13/20 04:24	11/13/20 20:34	1
13C2 PFHxA	52		25 - 150				11/13/20 04:24	11/13/20 20:34	1
13C4 PFHpA	54		25 - 150				11/13/20 04:24	11/13/20 20:34	1
13C4 PFOA	55		25 - 150				11/13/20 04:24	11/13/20 20:34	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L01 (11052020)

Lab Sample ID: 500-190766-1

Date Collected: 11/05/20 08:30

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFNA	53		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C2 PFDA	50		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C2 PFUnA	48		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C2 PFDoA	46		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C2 PFTeDA	36		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C2 PFHxDA	33		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C3 PFBS	47		25 - 150	11/13/20 04:24	11/13/20 20:34	1
18O2 PFHxS	50		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C4 PFOS	49		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C8 FOSA	48		25 - 150	11/13/20 04:24	11/13/20 20:34	1
d3-NMeFOSAA	33		25 - 150	11/13/20 04:24	11/13/20 20:34	1
d5-NEtFOSAA	47		25 - 150	11/13/20 04:24	11/13/20 20:34	1
d-N-MeFOSA-M	46		20 - 150	11/13/20 04:24	11/13/20 20:34	1
d-N-EtFOSA-M	37		20 - 150	11/13/20 04:24	11/13/20 20:34	1
d7-N-MeFOSE-M	27		10 - 120	11/13/20 04:24	11/13/20 20:34	1
d9-N-EtFOSE-M	24		10 - 120	11/13/20 04:24	11/13/20 20:34	1
M2-4:2 FTS	82		25 - 150	11/13/20 04:24	11/13/20 20:34	1
M2-6:2 FTS	90		25 - 150	11/13/20 04:24	11/13/20 20:34	1
M2-8:2 FTS	97		25 - 150	11/13/20 04:24	11/13/20 20:34	1
13C3 HFPO-DA	47		25 - 150	11/13/20 04:24	11/13/20 20:34	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	240		33	13	mg/L			11/11/20 16:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L02 (11052020)

Lab Sample ID: 500-190766-2

Date Collected: 11/05/20 08:45

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	12		4.7	2.2	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluoropentanoic acid (PFPeA)	23		1.9	0.46	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorohexanoic acid (PFHxA)	25		1.9	0.54	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluoroheptanoic acid (PFHpA)	15		1.9	0.23	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorooctanoic acid (PFOA)	8.9		1.9	0.79	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorononanoic acid (PFNA)	0.35	J	1.9	0.25	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.51	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.87	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorobutanesulfonic acid (PFBS)	3.4		1.9	0.19	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluoropentanesulfonic acid (PFPeS)	0.63	J	1.9	0.28	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorohexanesulfonic acid (PFHxS)	0.54	J	1.9	0.53	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorooctanesulfonic acid (PFOS)	0.66	J	1.9	0.50	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.34	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.90	ng/L		11/13/20 04:24	11/13/20 20:44	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.91	ng/L		11/13/20 04:24	11/13/20 20:44	1
NEtFOSA	<1.9		1.9	0.81	ng/L		11/13/20 04:24	11/13/20 20:44	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:24	11/13/20 20:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:24	11/13/20 20:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7		4.7	1.2	ng/L		11/13/20 04:24	11/13/20 20:44	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:24	11/13/20 20:44	1
NEtFOSE	<1.9		1.9	0.79	ng/L		11/13/20 04:24	11/13/20 20:44	1
4:2 FTS	<1.9		1.9	0.22	ng/L		11/13/20 04:24	11/13/20 20:44	1
6:2 FTS	<4.7		4.7	2.3	ng/L		11/13/20 04:24	11/13/20 20:44	1
8:2 FTS	0.43	J	1.9	0.43	ng/L		11/13/20 04:24	11/13/20 20:44	1
10:2 FTS	<1.9		1.9	0.62	ng/L		11/13/20 04:24	11/13/20 20:44	1
DONA	<1.9		1.9	0.37	ng/L		11/13/20 04:24	11/13/20 20:44	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:24	11/13/20 20:44	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/13/20 04:24	11/13/20 20:44	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 20:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	59		25 - 150				11/13/20 04:24	11/13/20 20:44	1
13C5 PFPeA	67		25 - 150				11/13/20 04:24	11/13/20 20:44	1
13C2 PFHxA	66		25 - 150				11/13/20 04:24	11/13/20 20:44	1
13C4 PFHpA	65		25 - 150				11/13/20 04:24	11/13/20 20:44	1
13C4 PFOA	67		25 - 150				11/13/20 04:24	11/13/20 20:44	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L02 (11052020)

Lab Sample ID: 500-190766-2

Date Collected: 11/05/20 08:45

Matrix: Water

Date Received: 11/07/20 09:55

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

<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C5 PFNA	66		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C2 PFDA	66		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C2 PFUnA	53		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C2 PFDoA	43		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C2 PFTeDA	44		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C2 PFHxDA	40		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C3 PFBS	57		25 - 150	11/13/20 04:24	11/13/20 20:44	1
18O2 PFHxS	59		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C4 PFOS	59		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C8 FOSA	52		25 - 150	11/13/20 04:24	11/13/20 20:44	1
d3-NMeFOSAA	36		25 - 150	11/13/20 04:24	11/13/20 20:44	1
d5-NEtFOSAA	46		25 - 150	11/13/20 04:24	11/13/20 20:44	1
d-N-MeFOSA-M	44		20 - 150	11/13/20 04:24	11/13/20 20:44	1
d-N-EtFOSA-M	35		20 - 150	11/13/20 04:24	11/13/20 20:44	1
d7-N-MeFOSE-M	23		10 - 120	11/13/20 04:24	11/13/20 20:44	1
d9-N-EtFOSE-M	22		10 - 120	11/13/20 04:24	11/13/20 20:44	1
M2-4:2 FTS	112		25 - 150	11/13/20 04:24	11/13/20 20:44	1
M2-6:2 FTS	131		25 - 150	11/13/20 04:24	11/13/20 20:44	1
M2-8:2 FTS	139		25 - 150	11/13/20 04:24	11/13/20 20:44	1
13C3 HFPO-DA	57		25 - 150	11/13/20 04:24	11/13/20 20:44	1

General Chemistry

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>RL</u>	<u>MDL</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Total Suspended Solids	1000		200	77	mg/L			11/11/20 16:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L03 (11052020)

Lab Sample ID: 500-190766-3

Date Collected: 11/05/20 09:05

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	63		5.9	2.8	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluoropentanoic acid (PFPeA)	200		2.3	0.57	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorohexanoic acid (PFHxA)	230		2.3	0.68	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluoroheptanoic acid (PFHpA)	96		2.3	0.29	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorononanoic acid (PFNA)	64		2.3	0.32	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorodecanoic acid (PFDA)	3.9		2.3	0.36	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluoroundecanoic acid (PFUnA)	1.3	J	2.3	1.3	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorododecanoic acid (PFDoA)	<2.3		2.3	0.64	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorotridecanoic acid (PFTriA)	<2.3		2.3	1.5	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorotetradecanoic acid (PFTeA)	<2.3		2.3	0.86	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.3		2.3	1.0	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.3		2.3	1.1	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorobutanesulfonic acid (PFBS)	5.5		2.3	0.23	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluoropentanesulfonic acid (PFPeS)	5.4		2.3	0.35	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorohexanesulfonic acid (PFHxS)	46		2.3	0.67	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.8	J	2.3	0.22	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorooctanesulfonic acid (PFOS)	95		2.3	0.63	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorononanesulfonic acid (PFNS)	<2.3		2.3	0.43	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorodecanesulfonic acid (PFDS)	<2.3		2.3	0.37	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorododecanesulfonic acid (PFDoS)	<2.3		2.3	1.1	ng/L		11/13/20 04:24	11/13/20 20:53	1
Perfluorooctanesulfonamide (FOSA)	9.5		2.3	1.1	ng/L		11/13/20 04:24	11/13/20 20:53	1
NEtFOSA	<2.3		2.3	1.0	ng/L		11/13/20 04:24	11/13/20 20:53	1
NMeFOSA	<2.3		2.3	0.50	ng/L		11/13/20 04:24	11/13/20 20:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.9		5.9	1.4	ng/L		11/13/20 04:24	11/13/20 20:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.5	J	5.9	1.5	ng/L		11/13/20 04:24	11/13/20 20:53	1
NMeFOSE	<4.7		4.7	1.6	ng/L		11/13/20 04:24	11/13/20 20:53	1
NEtFOSE	<2.3		2.3	1.0	ng/L		11/13/20 04:24	11/13/20 20:53	1
4:2 FTS	21		2.3	0.28	ng/L		11/13/20 04:24	11/13/20 20:53	1
8:2 FTS	85		2.3	0.54	ng/L		11/13/20 04:24	11/13/20 20:53	1
10:2 FTS	<2.3		2.3	0.78	ng/L		11/13/20 04:24	11/13/20 20:53	1
DONA	<2.3		2.3	0.47	ng/L		11/13/20 04:24	11/13/20 20:53	1
HFPO-DA (GenX)	<4.7		4.7	1.8	ng/L		11/13/20 04:24	11/13/20 20:53	1
F-53B Major	<2.3		2.3	0.28	ng/L		11/13/20 04:24	11/13/20 20:53	1
F-53B Minor	<2.3		2.3	0.37	ng/L		11/13/20 04:24	11/13/20 20:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	36		25 - 150				11/13/20 04:24	11/13/20 20:53	1
13C5 PFPeA	37		25 - 150				11/13/20 04:24	11/13/20 20:53	1
13C2 PFHxA	37		25 - 150				11/13/20 04:24	11/13/20 20:53	1
13C4 PFHpA	39		25 - 150				11/13/20 04:24	11/13/20 20:53	1
13C5 PFNA	39		25 - 150				11/13/20 04:24	11/13/20 20:53	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L03 (11052020)

Lab Sample ID: 500-190766-3

Date Collected: 11/05/20 09:05

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	35		25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C2 PFUnA	33		25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C2 PFDoA	27		25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C2 PFTeDA	25		25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C2 PFHxDA	23	*5	25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C3 PFBS	33		25 - 150	11/13/20 04:24	11/13/20 20:53	1
18O2 PFHxS	36		25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C4 PFOS	35		25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C8 FOSA	35		25 - 150	11/13/20 04:24	11/13/20 20:53	1
d3-NMeFOSAA	29		25 - 150	11/13/20 04:24	11/13/20 20:53	1
d5-NEtFOSAA	31		25 - 150	11/13/20 04:24	11/13/20 20:53	1
d-N-MeFOSA-M	33		20 - 150	11/13/20 04:24	11/13/20 20:53	1
d-N-EtFOSA-M	28		20 - 150	11/13/20 04:24	11/13/20 20:53	1
d7-N-MeFOSE-M	16		10 - 120	11/13/20 04:24	11/13/20 20:53	1
d9-N-EtFOSE-M	15		10 - 120	11/13/20 04:24	11/13/20 20:53	1
M2-4:2 FTS	59		25 - 150	11/13/20 04:24	11/13/20 20:53	1
M2-8:2 FTS	75		25 - 150	11/13/20 04:24	11/13/20 20:53	1
13C3 HFPO-DA	34		25 - 150	11/13/20 04:24	11/13/20 20:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1800		23	10	ng/L		11/13/20 04:24	11/14/20 22:11	10
6:2 FTS	1100		59	29	ng/L		11/13/20 04:24	11/14/20 22:11	10
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	36		25 - 150	11/13/20 04:24	11/14/20 22:11	10			
M2-6:2 FTS	42		25 - 150	11/13/20 04:24	11/14/20 22:11	10			

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1900		200	77	mg/L			11/11/20 16:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L04 (11052020)

Lab Sample ID: 500-190766-4

Date Collected: 11/05/20 09:15

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	7.0		4.4	2.1	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluoropentanoic acid (PFPeA)	6.0		1.8	0.43	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorohexanoic acid (PFHxA)	4.7		1.8	0.51	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluoroheptanoic acid (PFHpA)	2.7		1.8	0.22	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorooctanoic acid (PFOA)	8.5		1.8	0.75	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorononanoic acid (PFNA)	0.64	J	1.8	0.24	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.27	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	0.97	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.48	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.1	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.64	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.78	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.83	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorobutanesulfonic acid (PFBS)	0.65	J	1.8	0.18	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.26	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorohexanesulfonic acid (PFHxS)	1.5	J	1.8	0.50	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	0.48	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.33	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.28	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.85	ng/L		11/13/20 04:24	11/13/20 21:02	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.86	ng/L		11/13/20 04:24	11/13/20 21:02	1
NEtFOSA	<1.8		1.8	0.77	ng/L		11/13/20 04:24	11/13/20 21:02	1
NMeFOSA	<1.8		1.8	0.38	ng/L		11/13/20 04:24	11/13/20 21:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.4		4.4	1.1	ng/L		11/13/20 04:24	11/13/20 21:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.4		4.4	1.1	ng/L		11/13/20 04:24	11/13/20 21:02	1
NMeFOSE	<3.5		3.5	1.2	ng/L		11/13/20 04:24	11/13/20 21:02	1
NEtFOSE	<1.8		1.8	0.75	ng/L		11/13/20 04:24	11/13/20 21:02	1
4:2 FTS	<1.8		1.8	0.21	ng/L		11/13/20 04:24	11/13/20 21:02	1
6:2 FTS	5.2		4.4	2.2	ng/L		11/13/20 04:24	11/13/20 21:02	1
8:2 FTS	<1.8		1.8	0.40	ng/L		11/13/20 04:24	11/13/20 21:02	1
10:2 FTS	<1.8		1.8	0.59	ng/L		11/13/20 04:24	11/13/20 21:02	1
DONA	<1.8		1.8	0.35	ng/L		11/13/20 04:24	11/13/20 21:02	1
HFPO-DA (GenX)	<3.5		3.5	1.3	ng/L		11/13/20 04:24	11/13/20 21:02	1
F-53B Major	<1.8		1.8	0.21	ng/L		11/13/20 04:24	11/13/20 21:02	1
F-53B Minor	<1.8		1.8	0.28	ng/L		11/13/20 04:24	11/13/20 21:02	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	45		25 - 150				11/13/20 04:24	11/13/20 21:02	1
13C5 PFPeA	45		25 - 150				11/13/20 04:24	11/13/20 21:02	1
13C2 PFHxA	53		25 - 150				11/13/20 04:24	11/13/20 21:02	1
13C4 PFHpA	54		25 - 150				11/13/20 04:24	11/13/20 21:02	1
13C4 PFOA	57		25 - 150				11/13/20 04:24	11/13/20 21:02	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L04 (11052020)

Lab Sample ID: 500-190766-4

Date Collected: 11/05/20 09:15

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFNA	55		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C2 PFDA	53		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C2 PFUnA	46		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C2 PFDoA	34		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C2 PFTeDA	27		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C2 PFHxDA	36		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C3 PFBS	45		25 - 150	11/13/20 04:24	11/13/20 21:02	1
18O2 PFHxS	49		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C4 PFOS	48		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C8 FOSA	43		25 - 150	11/13/20 04:24	11/13/20 21:02	1
d3-NMeFOSAA	39		25 - 150	11/13/20 04:24	11/13/20 21:02	1
d5-NEtFOSAA	44		25 - 150	11/13/20 04:24	11/13/20 21:02	1
d-N-MeFOSA-M	38		20 - 150	11/13/20 04:24	11/13/20 21:02	1
d-N-EtFOSA-M	30		20 - 150	11/13/20 04:24	11/13/20 21:02	1
d7-N-MeFOSE-M	21		10 - 120	11/13/20 04:24	11/13/20 21:02	1
d9-N-EtFOSE-M	18		10 - 120	11/13/20 04:24	11/13/20 21:02	1
M2-4:2 FTS	89		25 - 150	11/13/20 04:24	11/13/20 21:02	1
M2-6:2 FTS	104		25 - 150	11/13/20 04:24	11/13/20 21:02	1
M2-8:2 FTS	127		25 - 150	11/13/20 04:24	11/13/20 21:02	1
13C3 HFPO-DA	47		25 - 150	11/13/20 04:24	11/13/20 21:02	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	1400		200	77	mg/L			11/11/20 16:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L05 (11052020)

Lab Sample ID: 500-190766-5

Date Collected: 11/05/20 09:30

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	10		5.0	2.4	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluoropentanoic acid (PFPeA)	6.7		2.0	0.49	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorohexanoic acid (PFHxA)	5.6		2.0	0.58	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluoroheptanoic acid (PFHpA)	3.9		2.0	0.25	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorooctanoic acid (PFOA)	11		2.0	0.85	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorononanoic acid (PFNA)	0.97	J	2.0	0.27	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorodecanoic acid (PFDA)	0.43	J	2.0	0.31	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorobutanesulfonic acid (PFBS)	0.93	J	2.0	0.20	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorohexanesulfonic acid (PFHxS)	1.1	J	2.0	0.57	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorooctanesulfonic acid (PFOS)	1.5	J	2.0	0.54	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		11/13/20 04:24	11/13/20 21:11	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		11/13/20 04:24	11/13/20 21:11	1
NEtFOSA	<2.0		2.0	0.87	ng/L		11/13/20 04:24	11/13/20 21:11	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/13/20 04:24	11/13/20 21:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		11/13/20 04:24	11/13/20 21:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		11/13/20 04:24	11/13/20 21:11	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/13/20 04:24	11/13/20 21:11	1
NEtFOSE	<2.0		2.0	0.85	ng/L		11/13/20 04:24	11/13/20 21:11	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/13/20 04:24	11/13/20 21:11	1
6:2 FTS	<5.0		5.0	2.5	ng/L		11/13/20 04:24	11/13/20 21:11	1
8:2 FTS	<2.0		2.0	0.46	ng/L		11/13/20 04:24	11/13/20 21:11	1
10:2 FTS	<2.0		2.0	0.67	ng/L		11/13/20 04:24	11/13/20 21:11	1
DONA	<2.0		2.0	0.40	ng/L		11/13/20 04:24	11/13/20 21:11	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/13/20 04:24	11/13/20 21:11	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/13/20 04:24	11/13/20 21:11	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/13/20 04:24	11/13/20 21:11	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	59		25 - 150				11/13/20 04:24	11/13/20 21:11	1
13C5 PFPeA	65		25 - 150				11/13/20 04:24	11/13/20 21:11	1
13C2 PFHxA	68		25 - 150				11/13/20 04:24	11/13/20 21:11	1
13C4 PFHpA	69		25 - 150				11/13/20 04:24	11/13/20 21:11	1
13C4 PFOA	70		25 - 150				11/13/20 04:24	11/13/20 21:11	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L05 (11052020)

Lab Sample ID: 500-190766-5

Date Collected: 11/05/20 09:30

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFNA	70		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C2 PFDA	71		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C2 PFUnA	63		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C2 PFDoA	55		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C2 PFTeDA	52		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C2 PFHxDA	52		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C3 PFBS	62		25 - 150	11/13/20 04:24	11/13/20 21:11	1
18O2 PFHxS	68		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C4 PFOS	67		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C8 FOSA	59		25 - 150	11/13/20 04:24	11/13/20 21:11	1
d3-NMeFOSAA	53		25 - 150	11/13/20 04:24	11/13/20 21:11	1
d5-NEtFOSAA	58		25 - 150	11/13/20 04:24	11/13/20 21:11	1
d-N-MeFOSA-M	57		20 - 150	11/13/20 04:24	11/13/20 21:11	1
d-N-EtFOSA-M	47		20 - 150	11/13/20 04:24	11/13/20 21:11	1
d7-N-MeFOSE-M	34		10 - 120	11/13/20 04:24	11/13/20 21:11	1
d9-N-EtFOSE-M	32		10 - 120	11/13/20 04:24	11/13/20 21:11	1
M2-4:2 FTS	120		25 - 150	11/13/20 04:24	11/13/20 21:11	1
M2-6:2 FTS	118		25 - 150	11/13/20 04:24	11/13/20 21:11	1
M2-8:2 FTS	143		25 - 150	11/13/20 04:24	11/13/20 21:11	1
13C3 HFPO-DA	63		25 - 150	11/13/20 04:24	11/13/20 21:11	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	91		9.1	3.5	mg/L			11/11/20 16:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L06 (11052020)

Lab Sample ID: 500-190766-6

Date Collected: 11/05/20 10:00

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.3	J	4.8	2.3	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoropentanoic acid (PFPeA)	2.2		1.9	0.47	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorohexanoic acid (PFHxA)	1.6	J	1.9	0.55	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoroheptanoic acid (PFHpA)	1.2	J	1.9	0.24	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorooctanoic acid (PFOA)	6.1		1.9	0.81	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorononanoic acid (PFNA)	1.7	J	1.9	0.26	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.85	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.89	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorobutanesulfonic acid (PFBS)	0.26	J	1.9	0.19	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9		1.9	0.54	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorooctanesulfonic acid (PFOS)	1.8	J	1.9	0.51	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluoronanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.92	ng/L		11/13/20 04:24	11/13/20 21:20	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.93	ng/L		11/13/20 04:24	11/13/20 21:20	1
NEtFOSA	<1.9		1.9	0.83	ng/L		11/13/20 04:24	11/13/20 21:20	1
NMeFOSA	<1.9		1.9	0.41	ng/L		11/13/20 04:24	11/13/20 21:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.1	ng/L		11/13/20 04:24	11/13/20 21:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.2	ng/L		11/13/20 04:24	11/13/20 21:20	1
NMeFOSE	<3.8		3.8	1.3	ng/L		11/13/20 04:24	11/13/20 21:20	1
NEtFOSE	<1.9		1.9	0.81	ng/L		11/13/20 04:24	11/13/20 21:20	1
4:2 FTS	<1.9		1.9	0.23	ng/L		11/13/20 04:24	11/13/20 21:20	1
6:2 FTS	17		4.8	2.4	ng/L		11/13/20 04:24	11/13/20 21:20	1
8:2 FTS	1.6	J	1.9	0.44	ng/L		11/13/20 04:24	11/13/20 21:20	1
10:2 FTS	<1.9		1.9	0.64	ng/L		11/13/20 04:24	11/13/20 21:20	1
DONA	<1.9		1.9	0.38	ng/L		11/13/20 04:24	11/13/20 21:20	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		11/13/20 04:24	11/13/20 21:20	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:24	11/13/20 21:20	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 21:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	76		25 - 150				11/13/20 04:24	11/13/20 21:20	1
13C5 PFPeA	82		25 - 150				11/13/20 04:24	11/13/20 21:20	1
13C2 PFHxA	84		25 - 150				11/13/20 04:24	11/13/20 21:20	1
13C4 PFHpA	86		25 - 150				11/13/20 04:24	11/13/20 21:20	1
13C4 PFOA	85		25 - 150				11/13/20 04:24	11/13/20 21:20	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L06 (11052020)

Lab Sample ID: 500-190766-6

Date Collected: 11/05/20 10:00

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFNA	85		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C2 PFDA	79		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C2 PFUnA	71		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C2 PFDoA	65		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C2 PFTeDA	59		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C2 PFHxDA	65		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C3 PFBS	77		25 - 150	11/13/20 04:24	11/13/20 21:20	1
18O2 PFHxS	79		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C4 PFOS	77		25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C8 FOSA	73		25 - 150	11/13/20 04:24	11/13/20 21:20	1
d3-NMeFOSAA	59		25 - 150	11/13/20 04:24	11/13/20 21:20	1
d5-NEtFOSAA	66		25 - 150	11/13/20 04:24	11/13/20 21:20	1
d-N-MeFOSA-M	45		20 - 150	11/13/20 04:24	11/13/20 21:20	1
d-N-EtFOSA-M	37		20 - 150	11/13/20 04:24	11/13/20 21:20	1
d7-N-MeFOSE-M	40		10 - 120	11/13/20 04:24	11/13/20 21:20	1
d9-N-EtFOSE-M	34		10 - 120	11/13/20 04:24	11/13/20 21:20	1
M2-4:2 FTS	135		25 - 150	11/13/20 04:24	11/13/20 21:20	1
M2-6:2 FTS	133		25 - 150	11/13/20 04:24	11/13/20 21:20	1
M2-8:2 FTS	153	*5	25 - 150	11/13/20 04:24	11/13/20 21:20	1
13C3 HFPO-DA	74		25 - 150	11/13/20 04:24	11/13/20 21:20	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	130		14	5.5	mg/L			11/11/20 16:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L07 (11052020)

Lab Sample ID: 500-190766-7

Date Collected: 11/05/20 10:30

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	13		4.7	2.2	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluoropentanoic acid (PFPeA)	36		1.9	0.46	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorohexanoic acid (PFHxA)	33		1.9	0.54	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluoroheptanoic acid (PFHpA)	13		1.9	0.23	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorooctanoic acid (PFOA)	97		1.9	0.79	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorononanoic acid (PFNA)	3.2		1.9	0.25	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.51	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.87	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorobutanesulfonic acid (PFBS)	1.1	J	1.9	0.19	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluoropentanesulfonic acid (PFPeS)	0.53	J	1.9	0.28	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorohexanesulfonic acid (PFHxS)	4.3		1.9	0.53	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorooctanesulfonic acid (PFOS)	3.1		1.9	0.50	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.34	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.90	ng/L		11/13/20 04:24	11/13/20 22:06	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.91	ng/L		11/13/20 04:24	11/13/20 22:06	1
NEtFOSA	<1.9		1.9	0.81	ng/L		11/13/20 04:24	11/13/20 22:06	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:24	11/13/20 22:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:24	11/13/20 22:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7		4.7	1.2	ng/L		11/13/20 04:24	11/13/20 22:06	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:24	11/13/20 22:06	1
NEtFOSE	<1.9		1.9	0.79	ng/L		11/13/20 04:24	11/13/20 22:06	1
4:2 FTS	2.9		1.9	0.22	ng/L		11/13/20 04:24	11/13/20 22:06	1
6:2 FTS	130		4.7	2.3	ng/L		11/13/20 04:24	11/13/20 22:06	1
8:2 FTS	1.8	J	1.9	0.43	ng/L		11/13/20 04:24	11/13/20 22:06	1
10:2 FTS	<1.9		1.9	0.62	ng/L		11/13/20 04:24	11/13/20 22:06	1
DONA	<1.9		1.9	0.37	ng/L		11/13/20 04:24	11/13/20 22:06	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:24	11/13/20 22:06	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/13/20 04:24	11/13/20 22:06	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 22:06	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	79		25 - 150				11/13/20 04:24	11/13/20 22:06	1
13C5 PFPeA	85		25 - 150				11/13/20 04:24	11/13/20 22:06	1
13C2 PFHxA	89		25 - 150				11/13/20 04:24	11/13/20 22:06	1
13C4 PFHpA	92		25 - 150				11/13/20 04:24	11/13/20 22:06	1
13C4 PFOA	92		25 - 150				11/13/20 04:24	11/13/20 22:06	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L07 (11052020)

Lab Sample ID: 500-190766-7

Date Collected: 11/05/20 10:30

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFNA	88		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C2 PFDA	85		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C2 PFUnA	81		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C2 PFDoA	73		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C2 PFTeDA	67		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C2 PFHxDA	74		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C3 PFBS	78		25 - 150	11/13/20 04:24	11/13/20 22:06	1
18O2 PFHxS	86		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C4 PFOS	82		25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C8 FOSA	85		25 - 150	11/13/20 04:24	11/13/20 22:06	1
d3-NMeFOSAA	60		25 - 150	11/13/20 04:24	11/13/20 22:06	1
d5-NEtFOSAA	72		25 - 150	11/13/20 04:24	11/13/20 22:06	1
d-N-MeFOSA-M	67		20 - 150	11/13/20 04:24	11/13/20 22:06	1
d-N-EtFOSA-M	56		20 - 150	11/13/20 04:24	11/13/20 22:06	1
d7-N-MeFOSE-M	46		10 - 120	11/13/20 04:24	11/13/20 22:06	1
d9-N-EtFOSE-M	41		10 - 120	11/13/20 04:24	11/13/20 22:06	1
M2-4:2 FTS	145		25 - 150	11/13/20 04:24	11/13/20 22:06	1
M2-6:2 FTS	132		25 - 150	11/13/20 04:24	11/13/20 22:06	1
M2-8:2 FTS	160	*5	25 - 150	11/13/20 04:24	11/13/20 22:06	1
13C3 HFPO-DA	80		25 - 150	11/13/20 04:24	11/13/20 22:06	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	25		5.0	1.9	mg/L			11/11/20 16:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L08 (11052020)

Lab Sample ID: 500-190766-8

Date Collected: 11/05/20 10:45

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.4	J	4.3	2.1	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluoropentanoic acid (PFPeA)	4.0		1.7	0.42	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorohexanoic acid (PFHxA)	4.7		1.7	0.50	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluoroheptanoic acid (PFHpA)	2.0		1.7	0.21	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorooctanoic acid (PFOA)	21		1.7	0.73	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorononanoic acid (PFNA)	1.7		1.7	0.23	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorodecanoic acid (PFDA)	0.37	J	1.7	0.27	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluoroundecanoic acid (PFUnA)	<1.7		1.7	0.94	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.47	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.63	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.76	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.81	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorobutanesulfonic acid (PFBS)	0.48	J	1.7	0.17	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluoropentanesulfonic acid (PFPeS)	<1.7		1.7	0.26	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorohexanesulfonic acid (PFHxS)	0.77	J	1.7	0.49	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.7		1.7	0.16	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorooctanesulfonic acid (PFOS)	5.8		1.7	0.46	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.32	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.27	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.83	ng/L		11/13/20 04:24	11/13/20 22:15	1
Perfluorooctanesulfonamide (FOSA)	1.3	J	1.7	0.84	ng/L		11/13/20 04:24	11/13/20 22:15	1
NEtFOSA	<1.7		1.7	0.75	ng/L		11/13/20 04:24	11/13/20 22:15	1
NMeFOSA	<1.7		1.7	0.37	ng/L		11/13/20 04:24	11/13/20 22:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.3		4.3	1.0	ng/L		11/13/20 04:24	11/13/20 22:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.3		4.3	1.1	ng/L		11/13/20 04:24	11/13/20 22:15	1
NMeFOSE	<3.4		3.4	1.2	ng/L		11/13/20 04:24	11/13/20 22:15	1
NEtFOSE	<1.7		1.7	0.73	ng/L		11/13/20 04:24	11/13/20 22:15	1
4:2 FTS	0.23	J	1.7	0.21	ng/L		11/13/20 04:24	11/13/20 22:15	1
6:2 FTS	14		4.3	2.1	ng/L		11/13/20 04:24	11/13/20 22:15	1
8:2 FTS	7.3		1.7	0.39	ng/L		11/13/20 04:24	11/13/20 22:15	1
10:2 FTS	<1.7		1.7	0.58	ng/L		11/13/20 04:24	11/13/20 22:15	1
DONA	<1.7		1.7	0.34	ng/L		11/13/20 04:24	11/13/20 22:15	1
HFPO-DA (GenX)	<3.4		3.4	1.3	ng/L		11/13/20 04:24	11/13/20 22:15	1
F-53B Major	<1.7		1.7	0.21	ng/L		11/13/20 04:24	11/13/20 22:15	1
F-53B Minor	<1.7		1.7	0.27	ng/L		11/13/20 04:24	11/13/20 22:15	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	57		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C5 PFPeA	63		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C2 PFHxA	67		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C4 PFHpA	67		25 - 150	11/13/20 04:24	11/13/20 22:15	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L08 (11052020)

Lab Sample ID: 500-190766-8

Date Collected: 11/05/20 10:45

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	67		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C5 PFNA	67		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C2 PFDA	66		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C2 PFUnA	54		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C2 PFDoA	38		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C2 PFTeDA	45		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C2 PFHxDA	46		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C3 PFBS	58		25 - 150	11/13/20 04:24	11/13/20 22:15	1
18O2 PFHxS	63		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C4 PFOS	61		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C8 FOSA	51		25 - 150	11/13/20 04:24	11/13/20 22:15	1
d3-NMeFOSAA	42		25 - 150	11/13/20 04:24	11/13/20 22:15	1
d5-NEtFOSAA	46		25 - 150	11/13/20 04:24	11/13/20 22:15	1
d-N-MeFOSA-M	38		20 - 150	11/13/20 04:24	11/13/20 22:15	1
d-N-EtFOSA-M	32		20 - 150	11/13/20 04:24	11/13/20 22:15	1
d7-N-MeFOSE-M	28		10 - 120	11/13/20 04:24	11/13/20 22:15	1
d9-N-EtFOSE-M	28		10 - 120	11/13/20 04:24	11/13/20 22:15	1
M2-4:2 FTS	119		25 - 150	11/13/20 04:24	11/13/20 22:15	1
M2-6:2 FTS	127		25 - 150	11/13/20 04:24	11/13/20 22:15	1
M2-8:2 FTS	140		25 - 150	11/13/20 04:24	11/13/20 22:15	1
13C3 HFPO-DA	59		25 - 150	11/13/20 04:24	11/13/20 22:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	110		5.0	1.9	mg/L			11/11/20 16:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L09 (11052020)

Lab Sample ID: 500-190766-9

Date Collected: 11/05/20 11:00

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	6.8		4.9	2.4	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluoropentanoic acid (PFPeA)	5.0		2.0	0.48	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorohexanoic acid (PFHxA)	4.4		2.0	0.57	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluoroheptanoic acid (PFHpA)	2.8		2.0	0.25	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorooctanoic acid (PFOA)	11		2.0	0.84	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorononanoic acid (PFNA)	1.1	J	2.0	0.27	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorodecanoic acid (PFDA)	0.57	J	2.0	0.31	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.54	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.72	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.88	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.93	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorobutanesulfonic acid (PFBS)	0.92	J	2.0	0.20	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluoropentanesulfonic acid (PFPeS)	0.35	J	2.0	0.30	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorohexanesulfonic acid (PFHxS)	1.9	J	2.0	0.56	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorooctanesulfonic acid (PFOS)	7.1		2.0	0.53	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.36	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.31	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.95	ng/L		11/13/20 04:24	11/13/20 22:24	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.96	ng/L		11/13/20 04:24	11/13/20 22:24	1
NEtFOSA	<2.0		2.0	0.86	ng/L		11/13/20 04:24	11/13/20 22:24	1
NMeFOSA	<2.0		2.0	0.42	ng/L		11/13/20 04:24	11/13/20 22:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		11/13/20 04:24	11/13/20 22:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.9		4.9	1.3	ng/L		11/13/20 04:24	11/13/20 22:24	1
NMeFOSE	<3.9		3.9	1.4	ng/L		11/13/20 04:24	11/13/20 22:24	1
NEtFOSE	<2.0		2.0	0.84	ng/L		11/13/20 04:24	11/13/20 22:24	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/13/20 04:24	11/13/20 22:24	1
6:2 FTS	4.0	J	4.9	2.5	ng/L		11/13/20 04:24	11/13/20 22:24	1
8:2 FTS	3.3		2.0	0.45	ng/L		11/13/20 04:24	11/13/20 22:24	1
10:2 FTS	<2.0		2.0	0.66	ng/L		11/13/20 04:24	11/13/20 22:24	1
DONA	<2.0		2.0	0.39	ng/L		11/13/20 04:24	11/13/20 22:24	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		11/13/20 04:24	11/13/20 22:24	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/13/20 04:24	11/13/20 22:24	1
F-53B Minor	<2.0		2.0	0.31	ng/L		11/13/20 04:24	11/13/20 22:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	70		25 - 150				11/13/20 04:24	11/13/20 22:24	1
13C5 PFPeA	75		25 - 150				11/13/20 04:24	11/13/20 22:24	1
13C2 PFHxA	78		25 - 150				11/13/20 04:24	11/13/20 22:24	1
13C4 PFHpA	81		25 - 150				11/13/20 04:24	11/13/20 22:24	1
13C4 PFOA	83		25 - 150				11/13/20 04:24	11/13/20 22:24	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L09 (11052020)

Lab Sample ID: 500-190766-9

Date Collected: 11/05/20 11:00

Matrix: Water

Date Received: 11/07/20 09:55

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

<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C5 PFNA	82		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C2 PFDA	75		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C2 PFUnA	73		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C2 PFDoA	50		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C2 PFTeDA	55		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C2 PFHxDA	53		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C3 PFBS	73		25 - 150	11/13/20 04:24	11/13/20 22:24	1
18O2 PFHxS	79		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C4 PFOS	75		25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C8 FOSA	67		25 - 150	11/13/20 04:24	11/13/20 22:24	1
d3-NMeFOSAA	64		25 - 150	11/13/20 04:24	11/13/20 22:24	1
d5-NEtFOSAA	62		25 - 150	11/13/20 04:24	11/13/20 22:24	1
d-N-MeFOSA-M	53		20 - 150	11/13/20 04:24	11/13/20 22:24	1
d-N-EtFOSA-M	44		20 - 150	11/13/20 04:24	11/13/20 22:24	1
d7-N-MeFOSE-M	35		10 - 120	11/13/20 04:24	11/13/20 22:24	1
d9-N-EtFOSE-M	35		10 - 120	11/13/20 04:24	11/13/20 22:24	1
M2-4:2 FTS	142		25 - 150	11/13/20 04:24	11/13/20 22:24	1
M2-6:2 FTS	158	*5	25 - 150	11/13/20 04:24	11/13/20 22:24	1
M2-8:2 FTS	182	*5	25 - 150	11/13/20 04:24	11/13/20 22:24	1
13C3 HFPO-DA	71		25 - 150	11/13/20 04:24	11/13/20 22:24	1

General Chemistry

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>RL</u>	<u>MDL</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Total Suspended Solids	240		14	5.5	mg/L			11/11/20 16:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L10 (11052020)

Lab Sample ID: 500-190766-10

Date Collected: 11/05/20 11:25

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	9.3		5.8	2.8	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluoropentanoic acid (PFPeA)	8.1		2.3	0.57	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorohexanoic acid (PFHxA)	6.5		2.3	0.67	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluoroheptanoic acid (PFHpA)	5.3		2.3	0.29	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorooctanoic acid (PFOA)	6.1		2.3	0.98	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorononanoic acid (PFNA)	1.1	J	2.3	0.31	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorodecanoic acid (PFDA)	0.37	J	2.3	0.36	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluoroundecanoic acid (PFUnA)	<2.3		2.3	1.3	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorododecanoic acid (PFDoA)	<2.3		2.3	0.63	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorotridecanoic acid (PFTriA)	<2.3		2.3	1.5	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorotetradecanoic acid (PFTeA)	<2.3		2.3	0.84	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.3		2.3	1.0	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.3		2.3	1.1	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorobutanesulfonic acid (PFBS)	1.3	J	2.3	0.23	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluoropentanesulfonic acid (PFPeS)	<2.3		2.3	0.35	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorohexanesulfonic acid (PFHxS)	1.2	J	2.3	0.66	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.3		2.3	0.22	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorooctanesulfonic acid (PFOS)	4.0	I	2.3	0.62	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorononanesulfonic acid (PFNS)	<2.3		2.3	0.43	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorodecanesulfonic acid (PFDS)	<2.3		2.3	0.37	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorododecanesulfonic acid (PFDoS)	<2.3		2.3	1.1	ng/L		11/13/20 04:24	11/13/20 22:33	1
Perfluorooctanesulfonamide (FOSA)	<2.3		2.3	1.1	ng/L		11/13/20 04:24	11/13/20 22:33	1
NEtFOSA	<2.3		2.3	1.0	ng/L		11/13/20 04:24	11/13/20 22:33	1
NMeFOSA	<2.3		2.3	0.50	ng/L		11/13/20 04:24	11/13/20 22:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.8		5.8	1.4	ng/L		11/13/20 04:24	11/13/20 22:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.8		5.8	1.5	ng/L		11/13/20 04:24	11/13/20 22:33	1
NMeFOSE	<4.6		4.6	1.6	ng/L		11/13/20 04:24	11/13/20 22:33	1
NEtFOSE	<2.3		2.3	0.98	ng/L		11/13/20 04:24	11/13/20 22:33	1
4:2 FTS	<2.3		2.3	0.28	ng/L		11/13/20 04:24	11/13/20 22:33	1
6:2 FTS	4.0	J	5.8	2.9	ng/L		11/13/20 04:24	11/13/20 22:33	1
8:2 FTS	1.2	J	2.3	0.53	ng/L		11/13/20 04:24	11/13/20 22:33	1
10:2 FTS	<2.3		2.3	0.77	ng/L		11/13/20 04:24	11/13/20 22:33	1
DONA	<2.3		2.3	0.46	ng/L		11/13/20 04:24	11/13/20 22:33	1
HFPO-DA (GenX)	<4.6		4.6	1.7	ng/L		11/13/20 04:24	11/13/20 22:33	1
F-53B Major	<2.3		2.3	0.28	ng/L		11/13/20 04:24	11/13/20 22:33	1
F-53B Minor	<2.3		2.3	0.37	ng/L		11/13/20 04:24	11/13/20 22:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	65		25 - 150				11/13/20 04:24	11/13/20 22:33	1
13C5 PFPeA	68		25 - 150				11/13/20 04:24	11/13/20 22:33	1
13C2 PFHxA	69		25 - 150				11/13/20 04:24	11/13/20 22:33	1
13C4 PFHpA	68		25 - 150				11/13/20 04:24	11/13/20 22:33	1
13C4 PFOA	71		25 - 150				11/13/20 04:24	11/13/20 22:33	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L10 (11052020)

Lab Sample ID: 500-190766-10

Date Collected: 11/05/20 11:25

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	69		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C2 PFDA	69		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C2 PFUnA	60		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C2 PFDoA	48		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C2 PFTeDA	52		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C2 PFHxDA	52		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C3 PFBS	63		25 - 150	11/13/20 04:24	11/13/20 22:33	1
18O2 PFHxS	66		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C4 PFOS	63		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C8 FOSA	52		25 - 150	11/13/20 04:24	11/13/20 22:33	1
d3-NMeFOSAA	51		25 - 150	11/13/20 04:24	11/13/20 22:33	1
d5-NEtFOSAA	54		25 - 150	11/13/20 04:24	11/13/20 22:33	1
d-N-MeFOSA-M	41		20 - 150	11/13/20 04:24	11/13/20 22:33	1
d-N-EtFOSA-M	37		20 - 150	11/13/20 04:24	11/13/20 22:33	1
d7-N-MeFOSE-M	39		10 - 120	11/13/20 04:24	11/13/20 22:33	1
d9-N-EtFOSE-M	35		10 - 120	11/13/20 04:24	11/13/20 22:33	1
M2-4:2 FTS	123		25 - 150	11/13/20 04:24	11/13/20 22:33	1
M2-6:2 FTS	128		25 - 150	11/13/20 04:24	11/13/20 22:33	1
M2-8:2 FTS	150		25 - 150	11/13/20 04:24	11/13/20 22:33	1
13C3 HFPO-DA	61		25 - 150	11/13/20 04:24	11/13/20 22:33	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	11		0.20	0.082	mg/L		11/12/20 07:34	11/12/20 21:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	6.1		0.20	0.082	mg/L		11/11/20 18:12	11/12/20 15:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	14		1.0	0.47	mg/L			11/11/20 22:05	1
Alkalinity	170		5.0	3.7	mg/L			11/14/20 15:30	1
Bicarbonate Alkalinity as CaCO3	170		5.0	3.7	mg/L			11/14/20 15:30	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 15:30	1
Total Suspended Solids	110		11	4.3	mg/L			11/12/20 10:59	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	13		1.0	0.47	mg/L			11/17/20 00:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: DUP-01 (11052020)

Lab Sample ID: 500-190766-11

Date Collected: 11/05/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	9.5		4.7	2.2	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluoropentanoic acid (PFPeA)	6.3		1.9	0.46	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorohexanoic acid (PFHxA)	4.6		1.9	0.54	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluoroheptanoic acid (PFHpA)	3.3		1.9	0.23	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorooctanoic acid (PFOA)	9.2		1.9	0.80	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorononanoic acid (PFNA)	0.60	J	1.9	0.25	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorobutanesulfonic acid (PFBS)	0.84	J	1.9	0.19	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.28	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorohexanesulfonic acid (PFHxS)	0.86	J	1.9	0.53	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorooctanesulfonic acid (PFOS)	1.6	J	1.9	0.51	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		11/13/20 04:24	11/13/20 22:42	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.92	ng/L		11/13/20 04:24	11/13/20 22:42	1
NEtFOSA	<1.9		1.9	0.82	ng/L		11/13/20 04:24	11/13/20 22:42	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:24	11/13/20 22:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:24	11/13/20 22:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7		4.7	1.2	ng/L		11/13/20 04:24	11/13/20 22:42	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:24	11/13/20 22:42	1
NEtFOSE	<1.9		1.9	0.80	ng/L		11/13/20 04:24	11/13/20 22:42	1
4:2 FTS	<1.9		1.9	0.22	ng/L		11/13/20 04:24	11/13/20 22:42	1
6:2 FTS	5.4		4.7	2.3	ng/L		11/13/20 04:24	11/13/20 22:42	1
8:2 FTS	<1.9		1.9	0.43	ng/L		11/13/20 04:24	11/13/20 22:42	1
10:2 FTS	<1.9		1.9	0.63	ng/L		11/13/20 04:24	11/13/20 22:42	1
DONA	<1.9		1.9	0.37	ng/L		11/13/20 04:24	11/13/20 22:42	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:24	11/13/20 22:42	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/13/20 04:24	11/13/20 22:42	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:24	11/13/20 22:42	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	80		25 - 150				11/13/20 04:24	11/13/20 22:42	1
13C5 PFPeA	87		25 - 150				11/13/20 04:24	11/13/20 22:42	1
13C2 PFHxA	94		25 - 150				11/13/20 04:24	11/13/20 22:42	1
13C4 PFHpA	97		25 - 150				11/13/20 04:24	11/13/20 22:42	1
13C4 PFOA	98		25 - 150				11/13/20 04:24	11/13/20 22:42	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: DUP-01 (11052020)

Lab Sample ID: 500-190766-11

Date Collected: 11/05/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

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

<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C5 PFNA	101		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C2 PFDA	104		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C2 PFUnA	96		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C2 PFDoA	68		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C2 PFTeDA	72		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C2 PFHxDA	43		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C3 PFBS	86		25 - 150	11/13/20 04:24	11/13/20 22:42	1
18O2 PFHxS	92		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C4 PFOS	97		25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C8 FOSA	82		25 - 150	11/13/20 04:24	11/13/20 22:42	1
d3-NMeFOSAA	88		25 - 150	11/13/20 04:24	11/13/20 22:42	1
d5-NEtFOSAA	81		25 - 150	11/13/20 04:24	11/13/20 22:42	1
d-N-MeFOSA-M	66		20 - 150	11/13/20 04:24	11/13/20 22:42	1
d-N-EtFOSA-M	56		20 - 150	11/13/20 04:24	11/13/20 22:42	1
d7-N-MeFOSE-M	48		10 - 120	11/13/20 04:24	11/13/20 22:42	1
d9-N-EtFOSE-M	43		10 - 120	11/13/20 04:24	11/13/20 22:42	1
M2-4:2 FTS	154	*5	25 - 150	11/13/20 04:24	11/13/20 22:42	1
M2-6:2 FTS	169	*5	25 - 150	11/13/20 04:24	11/13/20 22:42	1
M2-8:2 FTS	234	*5	25 - 150	11/13/20 04:24	11/13/20 22:42	1
13C3 HFPO-DA	85		25 - 150	11/13/20 04:24	11/13/20 22:42	1

General Chemistry

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>RL</u>	<u>MDL</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Total Suspended Solids	24		5.0	1.9	mg/L			11/12/20 11:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: Field Blank-11-5-2020

Lab Sample ID: 500-190766-12

Date Collected: 11/05/20 08:20

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5.4		5.4	2.6	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluoropentanoic acid (PFPeA)	<2.1		2.1	0.52	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorohexanoic acid (PFHxA)	<2.1		2.1	0.62	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluoroheptanoic acid (PFHpA)	<2.1		2.1	0.27	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorooctanoic acid (PFOA)	<2.1		2.1	0.91	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorononanoic acid (PFNA)	<2.1		2.1	0.29	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorodecanoic acid (PFDA)	<2.1		2.1	0.33	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluoroundecanoic acid (PFUnA)	<2.1		2.1	1.2	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorododecanoic acid (PFDoA)	<2.1		2.1	0.59	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorotridecanoic acid (PFTriA)	<2.1		2.1	1.4	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorotetradecanoic acid (PFTeA)	<2.1		2.1	0.78	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.1		2.1	0.95	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.1		2.1	1.0	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.1		2.1	0.21	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluoropentanesulfonic acid (PFPeS)	<2.1		2.1	0.32	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorohexanesulfonic acid (PFHxS)	<2.1		2.1	0.61	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.1		2.1	0.20	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorooctanesulfonic acid (PFOS)	<2.1		2.1	0.58	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorononanesulfonic acid (PFNS)	<2.1		2.1	0.40	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorodecanesulfonic acid (PFDS)	<2.1		2.1	0.34	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorododecanesulfonic acid (PFDoS)	<2.1		2.1	1.0	ng/L		11/13/20 04:24	11/13/20 22:51	1
Perfluorooctanesulfonamide (FOSA)	<2.1		2.1	1.0	ng/L		11/13/20 04:24	11/13/20 22:51	1
NEtFOSA	<2.1		2.1	0.93	ng/L		11/13/20 04:24	11/13/20 22:51	1
NMeFOSA	<2.1		2.1	0.46	ng/L		11/13/20 04:24	11/13/20 22:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.4		5.4	1.3	ng/L		11/13/20 04:24	11/13/20 22:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.4		5.4	1.4	ng/L		11/13/20 04:24	11/13/20 22:51	1
NMeFOSE	1.5 J		4.3	1.5	ng/L		11/13/20 04:24	11/13/20 22:51	1
NEtFOSE	1.4 J		2.1	0.91	ng/L		11/13/20 04:24	11/13/20 22:51	1
4:2 FTS	<2.1		2.1	0.26	ng/L		11/13/20 04:24	11/13/20 22:51	1
6:2 FTS	<5.4		5.4	2.7	ng/L		11/13/20 04:24	11/13/20 22:51	1
8:2 FTS	<2.1		2.1	0.49	ng/L		11/13/20 04:24	11/13/20 22:51	1
10:2 FTS	<2.1		2.1	0.72	ng/L		11/13/20 04:24	11/13/20 22:51	1
DONA	<2.1		2.1	0.43	ng/L		11/13/20 04:24	11/13/20 22:51	1
HFPO-DA (GenX)	<4.3		4.3	1.6	ng/L		11/13/20 04:24	11/13/20 22:51	1
F-53B Major	<2.1		2.1	0.26	ng/L		11/13/20 04:24	11/13/20 22:51	1
F-53B Minor	<2.1		2.1	0.34	ng/L		11/13/20 04:24	11/13/20 22:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	96		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C5 PFPeA	101		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C2 PFHxA	99		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C4 PFHpA	96		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C4 PFOA	102		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C5 PFNA	94		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C2 PFDA	94		25 - 150	11/13/20 04:24	11/13/20 22:51	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: Field Blank-11-5-2020

Lab Sample ID: 500-190766-12

Date Collected: 11/05/20 08:20

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFUnA	94		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C2 PFDoA	91		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C2 PFTeDA	89		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C2 PFHxDA	90		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C3 PFBS	96		25 - 150	11/13/20 04:24	11/13/20 22:51	1
18O2 PFHxS	100		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C4 PFOS	102		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C8 FOSA	97		25 - 150	11/13/20 04:24	11/13/20 22:51	1
d3-NMeFOSAA	59		25 - 150	11/13/20 04:24	11/13/20 22:51	1
d5-NEtFOSAA	65		25 - 150	11/13/20 04:24	11/13/20 22:51	1
d-N-MeFOSA-M	69		20 - 150	11/13/20 04:24	11/13/20 22:51	1
d-N-EtFOSA-M	54		20 - 150	11/13/20 04:24	11/13/20 22:51	1
d7-N-MeFOSE-M	36		10 - 120	11/13/20 04:24	11/13/20 22:51	1
d9-N-EtFOSE-M	31		10 - 120	11/13/20 04:24	11/13/20 22:51	1
M2-4:2 FTS	80		25 - 150	11/13/20 04:24	11/13/20 22:51	1
M2-6:2 FTS	93		25 - 150	11/13/20 04:24	11/13/20 22:51	1
M2-8:2 FTS	100		25 - 150	11/13/20 04:24	11/13/20 22:51	1
13C3 HFPO-DA	92		25 - 150	11/13/20 04:24	11/13/20 22:51	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance 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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-431320/1-A
Matrix: Water
Analysis Batch: 431618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431320

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		11/13/20 04:24	11/13/20 20:16	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		11/13/20 04:24	11/13/20 20:16	1
NEtFOSA	<2.0		2.0	0.87	ng/L		11/13/20 04:24	11/13/20 20:16	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/13/20 04:24	11/13/20 20:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		11/13/20 04:24	11/13/20 20:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		11/13/20 04:24	11/13/20 20:16	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/13/20 04:24	11/13/20 20:16	1
NEtFOSE	<2.0		2.0	0.85	ng/L		11/13/20 04:24	11/13/20 20:16	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/13/20 04:24	11/13/20 20:16	1
6:2 FTS	<5.0		5.0	2.5	ng/L		11/13/20 04:24	11/13/20 20:16	1
8:2 FTS	<2.0		2.0	0.46	ng/L		11/13/20 04:24	11/13/20 20:16	1
10:2 FTS	<2.0		2.0	0.67	ng/L		11/13/20 04:24	11/13/20 20:16	1
DONA	<2.0		2.0	0.40	ng/L		11/13/20 04:24	11/13/20 20:16	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/13/20 04:24	11/13/20 20:16	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/13/20 04:24	11/13/20 20:16	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/13/20 04:24	11/13/20 20:16	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	91		25 - 150				11/13/20 04:24	11/13/20 20:16	1
13C5 PFPeA	93		25 - 150				11/13/20 04:24	11/13/20 20:16	1
13C2 PFHxA	90		25 - 150				11/13/20 04:24	11/13/20 20:16	1
13C4 PFHpA	89		25 - 150				11/13/20 04:24	11/13/20 20:16	1
13C4 PFOA	91		25 - 150				11/13/20 04:24	11/13/20 20:16	1

Eurofins TestAmerica, Chicago

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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

Lab Sample ID: MB 320-431320/1-A
Matrix: Water
Analysis Batch: 431618

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431320

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFNA	86		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C2 PFDA	86		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C2 PFUnA	84		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C2 PFDoA	82		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C2 PFTeDA	84		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C2 PFHxDA	82		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C3 PFBS	93		25 - 150	11/13/20 04:24	11/13/20 20:16	1
18O2 PFHxS	95		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C4 PFOS	95		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C8 FOSA	86		25 - 150	11/13/20 04:24	11/13/20 20:16	1
d3-NMeFOSAA	55		25 - 150	11/13/20 04:24	11/13/20 20:16	1
d5-NEtFOSAA	58		25 - 150	11/13/20 04:24	11/13/20 20:16	1
d-N-MeFOSA-M	87		20 - 150	11/13/20 04:24	11/13/20 20:16	1
d-N-EtFOSA-M	88		20 - 150	11/13/20 04:24	11/13/20 20:16	1
d7-N-MeFOSE-M	74		10 - 120	11/13/20 04:24	11/13/20 20:16	1
d9-N-EtFOSE-M	81		10 - 120	11/13/20 04:24	11/13/20 20:16	1
M2-4:2 FTS	74		25 - 150	11/13/20 04:24	11/13/20 20:16	1
M2-6:2 FTS	76		25 - 150	11/13/20 04:24	11/13/20 20:16	1
M2-8:2 FTS	85		25 - 150	11/13/20 04:24	11/13/20 20:16	1
13C3 HFPO-DA	85		25 - 150	11/13/20 04:24	11/13/20 20:16	1

Lab Sample ID: LCS 320-431320/2-A
Matrix: Water
Analysis Batch: 431618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431320

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	41.3		ng/L		103	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	44.4		ng/L		111	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	43.6		ng/L		109	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	40.1		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	40.0	45.5		ng/L		114	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	45.7		ng/L		114	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	45.8		ng/L		114	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	47.3		ng/L		118	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	43.9		ng/L		110	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	43.1		ng/L		108	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.9		ng/L		102	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	41.6		ng/L		104	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	39.3		ng/L		111	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	43.8		ng/L		117	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.2		ng/L		99	59 - 119

Eurofins TestAmerica, Chicago

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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

Lab Sample ID: LCS 320-431320/2-A
Matrix: Water
Analysis Batch: 431618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431320

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.7		ng/L		115	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	40.3		ng/L		109	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	42.1		ng/L		110	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	40.3		ng/L		104	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	42.4		ng/L		110	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	46.7		ng/L		117	73 - 133
NMeFOSA	40.0	42.7		ng/L		107	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	44.1		ng/L		110	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	40.5		ng/L		101	76 - 136
NMeFOSE	40.0	46.6		ng/L		117	70 - 130
NEtFOSE	40.0	45.6		ng/L		114	71 - 131
4:2 FTS	37.4	42.8		ng/L		115	79 - 139
6:2 FTS	37.9	39.2		ng/L		103	59 - 175
8:2 FTS	38.3	42.2		ng/L		110	75 - 135
10:2 FTS	38.6	41.3		ng/L		107	64 - 142
DONA	37.7	39.5		ng/L		105	79 - 139
HFPO-DA (GenX)	40.0	44.0		ng/L		110	51 - 173
F-53B Major	37.3	40.3		ng/L		108	75 - 135
F-53B Minor	37.7	39.9		ng/L		106	54 - 114

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	94		25 - 150
13C5 PFPeA	96		25 - 150
13C2 PFHxA	94		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	98		25 - 150
13C5 PFNA	90		25 - 150
13C2 PFDA	88		25 - 150
13C2 PFUnA	88		25 - 150
13C2 PFDoA	87		25 - 150
13C2 PFTeDA	84		25 - 150
13C2 PFHxDA	88		25 - 150
13C3 PFBS	95		25 - 150
18O2 PFHxS	99		25 - 150
13C4 PFOS	100		25 - 150
13C8 FOSA	93		25 - 150
d3-NMeFOSAA	60		25 - 150
d5-NEtFOSAA	62		25 - 150
d-N-MeFOSA-M	86		20 - 150
d-N-EtFOSA-M	89		20 - 150
d7-N-MeFOSE-M	87		10 - 120
d9-N-EtFOSE-M	89		10 - 120
M2-4:2 FTS	72		25 - 150

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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

Lab Sample ID: LCS 320-431320/2-A
Matrix: Water
Analysis Batch: 431618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431320

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
M2-6:2 FTS	75		25 - 150
M2-8:2 FTS	89		25 - 150
13C3 HFPO-DA	93		25 - 150

Lab Sample ID: 500-190766-6 MS
Matrix: Water
Analysis Batch: 431618

Client Sample ID: GW-L06 (11052020)
Prep Type: Total/NA
Prep Batch: 431320

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Perfluorobutanoic acid (PFBA)	2.3	J	36.4	44.0		ng/L		114	76 - 136
Perfluoropentanoic acid (PFPeA)	2.2		36.4	39.0		ng/L		101	71 - 131
Perfluorohexanoic acid (PFHxA)	1.6	J	36.4	40.4		ng/L		106	73 - 133
Perfluoroheptanoic acid (PFHpA)	1.2	J	36.4	40.8		ng/L		109	72 - 132
Perfluorooctanoic acid (PFOA)	6.1		36.4	40.5		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	1.7	J	36.4	50.8		ng/L		135	75 - 135
Perfluorodecanoic acid (PFDA)	<1.9		36.4	40.9		ng/L		112	76 - 136
Perfluoroundecanoic acid (PFUnA)	<1.9		36.4	45.3		ng/L		124	68 - 128
Perfluorododecanoic acid (PFDoA)	<1.9		36.4	42.7		ng/L		117	71 - 131
Perfluorotridecanoic acid (PFTriA)	<1.9		36.4	42.5		ng/L		117	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<1.9		36.4	38.4		ng/L		106	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		36.4	33.8		ng/L		93	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		36.4	39.8		ng/L		109	58 - 145
Perfluorobutanesulfonic acid (PFBS)	0.26	J	32.2	34.3		ng/L		106	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	<1.9		34.2	41.2		ng/L		121	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	<1.9		33.2	35.3		ng/L		106	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		34.7	40.9		ng/L		118	76 - 136
Perfluorooctanesulfonic acid (PFOS)	1.8	J	33.8	38.4		ng/L		108	70 - 130
Perfluorononanesulfonic acid (PFNS)	<1.9		35.0	33.4		ng/L		96	75 - 135
Perfluorodecanesulfonic acid (PFDS)	<1.9		35.1	32.1		ng/L		91	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	<1.9		35.3	34.5		ng/L		98	67 - 127
Perfluorooctanesulfonamide (FOSA)	<1.9		36.4	42.4		ng/L		116	73 - 133
NMeFOSA	<1.9		36.4	38.3		ng/L		105	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		36.4	42.3		ng/L		116	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		36.4	41.3		ng/L		113	76 - 136
NMeFOSE	<3.8		36.4	38.7		ng/L		106	70 - 130
NEtFOSE	<1.9		36.4	43.2		ng/L		119	71 - 131

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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

Lab Sample ID: 500-190766-6 MS

Matrix: Water

Analysis Batch: 431618

Client Sample ID: GW-L06 (11052020)

Prep Type: Total/NA

Prep Batch: 431320

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	RPD
4:2 FTS	<1.9		34.0	36.4		ng/L		107	79 - 139	
6:2 FTS	17		34.5	37.9		ng/L		60	59 - 175	
8:2 FTS	1.6	J	34.9	37.3		ng/L		102	75 - 135	
10:2 FTS	<1.9		35.1	24.6		ng/L		70	64 - 142	
DONA	<1.9		34.3	38.3		ng/L		112	79 - 139	
HFPO-DA (GenX)	<3.8		36.4	40.4		ng/L		111	51 - 173	
F-53B Major	<1.9		34.0	34.6		ng/L		102	75 - 135	
F-53B Minor	<1.9		34.3	31.3		ng/L		91	54 - 114	
MS MS										
Isotope Dilution	%Recovery	Qualifier	Limits							
13C4 PFBA	69		25 - 150							
13C5 PFPeA	76		25 - 150							
13C2 PFHxA	78		25 - 150							
13C4 PFHpA	77		25 - 150							
13C4 PFOA	77		25 - 150							
13C5 PFNA	79		25 - 150							
13C2 PFDA	71		25 - 150							
13C2 PFUnA	67		25 - 150							
13C2 PFDoA	56		25 - 150							
13C2 PFTeDA	63		25 - 150							
13C2 PFHxDA	64		25 - 150							
13C3 PFBS	69		25 - 150							
18O2 PFHxS	74		25 - 150							
13C4 PFOS	70		25 - 150							
13C8 FOSA	61		25 - 150							
d3-NMeFOSAA	57		25 - 150							
d5-NEtFOSAA	64		25 - 150							
d-N-MeFOSA-M	48		20 - 150							
d-N-EtFOSA-M	44		20 - 150							
d7-N-MeFOSE-M	45		10 - 120							
d9-N-EtFOSE-M	39		10 - 120							
M2-4:2 FTS	141		25 - 150							
M2-6:2 FTS	133		25 - 150							
M2-8:2 FTS	162	*5	25 - 150							
13C3 HFPO-DA	68		25 - 150							

Lab Sample ID: 500-190766-6 MSD

Matrix: Water

Analysis Batch: 431618

Client Sample ID: GW-L06 (11052020)

Prep Type: Total/NA

Prep Batch: 431320

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Perfluorobutanoic acid (PFBA)	2.3	J	42.5	51.3		ng/L		115	76 - 136	15	30	
Perfluoropentanoic acid (PFPeA)	2.2		42.5	44.3		ng/L		99	71 - 131	13	30	
Perfluorohexanoic acid (PFHxA)	1.6	J	42.5	48.8		ng/L		111	73 - 133	19	30	
Perfluoroheptanoic acid (PFHpA)	1.2	J	42.5	47.0		ng/L		108	72 - 132	14	30	
Perfluorooctanoic acid (PFOA)	6.1		42.5	46.3		ng/L		95	70 - 130	13	30	
Perfluorononanoic acid (PFNA)	1.7	J	42.5	51.0		ng/L		116	75 - 135	0	30	
Perfluorodecanoic acid (PFDA)	<1.9		42.5	45.6		ng/L		107	76 - 136	11	30	

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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

Lab Sample ID: 500-190766-6 MSD

Matrix: Water

Analysis Batch: 431618

Client Sample ID: GW-L06 (11052020)

Prep Type: Total/NA

Prep Batch: 431320

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	<1.9		42.5	51.8		ng/L		122	68 - 128	13	30
Perfluorododecanoic acid (PFDoA)	<1.9		42.5	49.5		ng/L		116	71 - 131	15	30
Perfluorotridecanoic acid (PFTriA)	<1.9		42.5	49.9		ng/L		117	71 - 131	16	30
Perfluorotetradecanoic acid (PFTeA)	<1.9		42.5	49.4		ng/L		116	70 - 130	25	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		42.5	41.9		ng/L		99	76 - 136	21	30
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		42.5	42.7		ng/L		101	58 - 145	7	30
Perfluorobutanesulfonic acid (PFBS)	0.26	J	37.6	39.3		ng/L		104	67 - 127	14	30
Perfluoropentanesulfonic acid (PFPeS)	<1.9		39.9	47.1		ng/L		118	66 - 126	13	30
Perfluorohexanesulfonic acid (PFHxS)	<1.9		38.7	40.3		ng/L		104	59 - 119	13	30
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		40.5	48.2		ng/L		119	76 - 136	16	30
Perfluorooctanesulfonic acid (PFOS)	1.8	J	39.5	45.5		ng/L		111	70 - 130	17	30
Perfluorononanesulfonic acid (PFNS)	<1.9		40.8	41.9		ng/L		103	75 - 135	23	30
Perfluorodecanesulfonic acid (PFDS)	<1.9		41.0	39.7		ng/L		97	71 - 131	21	30
Perfluorododecanesulfonic acid (PFDoS)	<1.9		41.2	42.4		ng/L		103	67 - 127	20	30
Perfluorooctanesulfonamide (FOSA)	<1.9		42.5	50.9		ng/L		120	73 - 133	18	30
NMeFOSA	<1.9		42.5	44.1		ng/L		104	67 - 154	14	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		42.5	49.4		ng/L		116	76 - 136	16	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		42.5	45.3		ng/L		106	76 - 136	9	30
NMeFOSE	<3.8		42.5	48.7		ng/L		115	70 - 130	23	30
NEtFOSE	<1.9		42.5	42.0		ng/L		99	71 - 131	3	30
4:2 FTS	<1.9		39.7	42.3		ng/L		107	79 - 139	15	30
6:2 FTS	17		40.3	45.9		ng/L		71	59 - 175	19	30
8:2 FTS	1.6	J	40.7	42.6		ng/L		101	75 - 135	13	30
10:2 FTS	<1.9		41.0	26.8		ng/L		65	64 - 142	9	30
DONA	<1.9		40.1	46.6		ng/L		116	79 - 139	20	30
HFPO-DA (GenX)	<3.8		42.5	49.4		ng/L		116	51 - 173	20	30
F-53B Major	<1.9		39.6	41.5		ng/L		105	75 - 135	18	30
F-53B Minor	<1.9		40.1	38.4		ng/L		96	54 - 114	20	30
MSD MSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C4 PFBA	74		25 - 150								
13C5 PFPeA	81		25 - 150								
13C2 PFHxA	85		25 - 150								
13C4 PFHpA	86		25 - 150								
13C4 PFOA	86		25 - 150								
13C5 PFNA	89		25 - 150								

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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

Lab Sample ID: 500-190766-6 MSD
Matrix: Water
Analysis Batch: 431618

Client Sample ID: GW-L06 (11052020)
Prep Type: Total/NA
Prep Batch: 431320

Isotope Dilution	MSD		Limits
	%Recovery	Qualifier	
13C2 PFDA	83		25 - 150
13C2 PFUnA	74		25 - 150
13C2 PFDoA	59		25 - 150
13C2 PFTeDA	68		25 - 150
13C2 PFHxDA	69		25 - 150
13C3 PFBS	76		25 - 150
18O2 PFHxS	81		25 - 150
13C4 PFOS	74		25 - 150
13C8 FOSA	63		25 - 150
d3-NMeFOSAA	63		25 - 150
d5-NEtFOSAA	71		25 - 150
d-N-MeFOSA-M	53		20 - 150
d-N-EtFOSA-M	48		20 - 150
d7-N-MeFOSE-M	49		10 - 120
d9-N-EtFOSE-M	47		10 - 120
M2-4:2 FTS	158	*5	25 - 150
M2-6:2 FTS	153	*5	25 - 150
M2-8:2 FTS	187	*5	25 - 150
13C3 HFPO-DA	73		25 - 150

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 500-571615/2-A
Matrix: Water
Analysis Batch: 571915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 571615

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Iron	1.00	0.956		mg/L		96	80 - 120	

Lab Sample ID: MB 500-571692/1-A
Matrix: Water
Analysis Batch: 571916

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 571692

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	<0.20		0.20	0.082	mg/L		11/12/20 07:34	11/12/20 21:08	1

Lab Sample ID: LCS 500-571692/2-A
Matrix: Water
Analysis Batch: 571916

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 571692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Iron	1.00	1.05		mg/L		105	80 - 120	

Lab Sample ID: MB 500-571221/1-E
Matrix: Water
Analysis Batch: 571915

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 571615

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	<0.20		0.20	0.082	mg/L		11/11/20 18:12	11/12/20 15:32	1

Eurofins TestAmerica, Chicago

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-571809/32
Matrix: Water
Analysis Batch: 571809

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.47	mg/L			11/11/20 20:20	1

Lab Sample ID: LCS 500-571809/33
Matrix: Water
Analysis Batch: 571809

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.0		mg/L		100	80 - 120

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 500-572615/1-A
Matrix: Water
Analysis Batch: 572802

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	<1.0		1.0	0.47	mg/L			11/17/20 17:46	1

Lab Sample ID: LCS 500-572615/2-A
Matrix: Water
Analysis Batch: 572802

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon - Duplicate	10.0	10.8		mg/L		108	80 - 120

Lab Sample ID: LCSD 500-572615/3-A
Matrix: Water
Analysis Batch: 572802

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon - Duplicate	10.0	11.0		mg/L		110	80 - 120	3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-572284/28
Matrix: Water
Analysis Batch: 572284

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<5.0		5.0	3.7	mg/L			11/14/20 15:17	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 15:17	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 15:17	1

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-572284/29
 Matrix: Water
 Analysis Batch: 572284

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	98.6		mg/L		99	90 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-571594/1
 Matrix: Water
 Analysis Batch: 571594

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			11/11/20 16:15	1

Lab Sample ID: LCS 500-571594/2
 Matrix: Water
 Analysis Batch: 571594

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	189		mg/L		95	80 - 120

Lab Sample ID: 500-190766-6 MS
 Matrix: Water
 Analysis Batch: 571594

Client Sample ID: GW-L06 (11052020)
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	130		143	291		mg/L		110	75 - 125

Lab Sample ID: 500-190766-6 MSD
 Matrix: Water
 Analysis Batch: 571594

Client Sample ID: GW-L06 (11052020)
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Suspended Solids	130		143	290		mg/L		109	75 - 125	0	20

Lab Sample ID: MB 500-571771/1
 Matrix: Water
 Analysis Batch: 571771

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			11/12/20 10:50	1

Lab Sample ID: LCS 500-571771/2
 Matrix: Water
 Analysis Batch: 571771

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	191		mg/L		96	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L01 (11052020)

Lab Sample ID: 500-190766-1

Date Collected: 11/05/20 08:30

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 20:34	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:29		
					(End)	11/11/20 16:30		

Client Sample ID: GW-L02 (11052020)

Lab Sample ID: 500-190766-2

Date Collected: 11/05/20 08:45

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 20:44	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:30		
					(End)	11/11/20 16:31		

Client Sample ID: GW-L03 (11052020)

Lab Sample ID: 500-190766-3

Date Collected: 11/05/20 09:05

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 20:53	RS1	TAL SAC
Total/NA	Prep	3535	DL		431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	431915	11/14/20 22:11	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:31		
					(End)	11/11/20 16:33		

Client Sample ID: GW-L04 (11052020)

Lab Sample ID: 500-190766-4

Date Collected: 11/05/20 09:15

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 21:02	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:33		
					(End)	11/11/20 16:34		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L05 (11052020)

Lab Sample ID: 500-190766-5

Date Collected: 11/05/20 09:30

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 21:11	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:34		
					(End)	11/11/20 16:35		

Client Sample ID: GW-L06 (11052020)

Lab Sample ID: 500-190766-6

Date Collected: 11/05/20 10:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 21:20	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:35		
					(End)	11/11/20 16:36		

Client Sample ID: GW-L07 (11052020)

Lab Sample ID: 500-190766-7

Date Collected: 11/05/20 10:30

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 22:06	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:39		
					(End)	11/11/20 16:40		

Client Sample ID: GW-L08 (11052020)

Lab Sample ID: 500-190766-8

Date Collected: 11/05/20 10:45

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 22:15	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI
					(Start)	11/11/20 16:40		
					(End)	11/11/20 16:41		

Client Sample ID: GW-L09 (11052020)

Lab Sample ID: 500-190766-9

Date Collected: 11/05/20 11:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 22:24	RS1	TAL SAC

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Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

Client Sample ID: GW-L09 (11052020)

Lab Sample ID: 500-190766-9

Date Collected: 11/05/20 11:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	571594		SMO	TAL CHI

Client Sample ID: GW-L10 (11052020)

Lab Sample ID: 500-190766-10

Date Collected: 11/05/20 11:25

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 22:33	RS1	TAL SAC
Dissolved	Filtration	FILTRATION			571221	11/10/20 08:06	LMN	TAL CHI
Dissolved	Prep	3010A			571615	11/11/20 18:12	BDE	TAL CHI
Dissolved	Analysis	6010C		1	571915	11/12/20 15:35	JEF	TAL CHI
Total Recoverable	Prep	3005A			571692	11/12/20 07:34	LMN	TAL CHI
Total Recoverable	Analysis	6010C		1	571916	11/12/20 21:15	JEF	TAL CHI
Dissolved	Analysis	9060A		1	572802		TMS	TAL CHI
					(Start)	11/17/20 00:32		
					(End)	11/18/20 00:42		
Dissolved	Filtration	FILTRATION			572615	11/17/20 12:56	JJB	TAL CHI
Total/NA	Analysis	9060A		1	571809	11/11/20 22:05	JJB	TAL CHI
Total/NA	Analysis	SM 2320B		1	572284	11/14/20 15:30	SMO	TAL CHI
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 10:59		
					(End)	11/12/20 11:00		

Client Sample ID: DUP-01 (11052020)

Lab Sample ID: 500-190766-11

Date Collected: 11/05/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 22:42	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:00		
					(End)	11/12/20 11:01		

Client Sample ID: Field Blank-11-5-2020

Lab Sample ID: 500-190766-12

Date Collected: 11/05/20 08:20

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431320	11/13/20 04:24	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431618	11/13/20 22:51	RS1	TAL SAC

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Eurofins TestAmerica, Chicago

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

Laboratory: Eurofins TestAmerica, Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-21

Eurofins TestAmerica, Chicago

2417 Bond Street
University Park IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins
11111
11111

Client Information		Sampler AS, KK, SK		Lab PM Fredrick, Sandie		Camera Tracking (Yes)		COC No 500-86744-39116.3								
Client Contact Elizabeth Hover		Phone		E-Mail sandra.fredrick@eurofinset.com				Page 1 of 7								
Company ARCADIS U.S., Inc.								Job # 500-190766								
Address 126 North Jefferson Street Suite 400		Due Date Requested:						Preservation Codes:								
City Milwaukee		AT Requested (days): Standard						A - HCl B - NaOH C - Zn Acetate D - Nitric Acid E - H ₂ SO ₄ F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - Cl Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2CO3 Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - Other (specify)								
State, Zip WI, 53202		7# J062361.00001		WC#				Other:								
Phone 500-190766 COC		Project # 50017363		SSOW#												
Email Elizabeth.Hover@arcadis.com		Site Mannette, WI														
Project Name Mannette 30062361 00001																
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wasteflud, BT=Toxic sub, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D - TSS	PFC_IDA - PFAS - Extended List (36 Analytes)	3060A - TOC	2320B - Alkalinity (Total/Bicarb/Carb)	6010C - Total Iron	3060A_Diss - DOC	6010C - Dissolved Iron	Total Number of Containers	Special Instructions/Note:
				Preservation Code:		X	N	N	S	N	D	N	N			
1	GW-L01 (11052020)	11/5/20	830	G	Water	N	X	X								
2	GW-L02 (11052020)		845		Water											
3	GW-L03 (11052020)		905		Water											Limited vol
4	GW-L04 (11052020)		915		Water											
5	GW-L05 (11052020)		930		Water											
6	GW-L06 (11052020)		1000		Water	Y	X									MS/MSD
7	GW-L07 (11052020)		1030		Water	N	X									
8	GW-L08 (11052020)		1045		Water											
9	GW-L09 (11052020)		1100		Water											
10	GW-L10 (11052020)		1125		Water			X	X	X	X	X				
11	DUP-01 (11052020)				Water											Duplicate
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Deliverable Requested I, II, III, IV Other (specify)						Special Instructions/OC Requirements:										
Empty Kit Relinquished by		Date		Time		Method of Shipment										
Relinquished by <i>Amy Stiefker</i>		Date/Time 11/6/20 1500		Company Arcadis		Received by <i>Shirley Scott</i>		Date/Time 11/7/20 0955		Company EPA/OTF						
Relinquished by		Date/Time		Company		Received by		Date/Time		Company						
Relinquished by		Date/Time		Company		Received by		Date/Time		Company						
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No :		Cooker Temperature (°C) and Other Remarks 2,2 → 2,1, 2,3 → 2,7, 2,1 → 2,5, 1,7 → 1,8, 2,3 → 2,7, 1,5 → 1,6 0,9 → 1,0, 1,9 → 2,0, 1,1 → 1,2, 0,0 → 0,1, 1,3 → 1,4 11/20/2020												

ORIGIN ID:RRLA (262) 202-5955
GUEST: AMY PARISH
COUNTRY INN& SUITES
2020 OLD PESHTIGO CT.
MARINETTE, WI 54143
UNITED STATES US

SHIP DATE: 06OCT20
ACTWGT: 25.00 LB 1
CAD: 525155/CAFE34

ORIGIN ID:RRLA (262) 202-5955
GUEST: AMY PARISH
COUNTRY INN& SUITES
2020 OLD PESHTIGO CT.
MARINETTE, WI 54143
UNITED STATES US

SHIP DATE: 06OCT20
ACTWGT: 25.00 LB 1
CAD: 525155/CAFE3408

TO

TESTAMERICA CHICAGO
2417 BOND STREET



UNIVERSITY PARK IL 60484-310 500-190766 Wayb

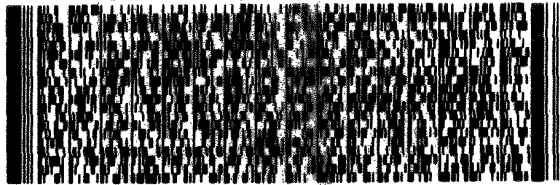
(708) 634-5200

REF:

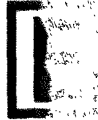
INU:

DEPT:

RMA: 01100101



FedEx



TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

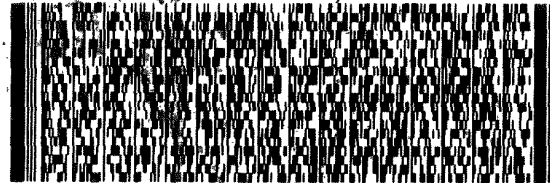
(708) 634-5200

REF:

INU:

DEPT:

RMA: 01100101



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Express



FedEx

TRK# 7125 4943 3272
0221

X0 JOTA

RETURNS MON - SAT
PRIORITY OVERNIGHT

60

IL-US



FID: 832374 06Nov2020 GRBA 560G3/5108/052

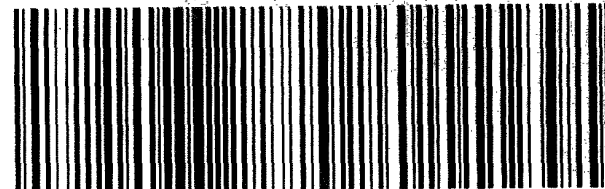
FedEx

TRK# 7125 4943 3261
0221

X0 JOTA

RETURNS MON - SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD



FID: 832374 06Nov2020 GRBA 560G3/5108/05A2

ORIGIN ID:PHDA (330) 966-9677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
CAD: 0562071/CAFE3406

MARINETTE, WI 54143
UNITED STATES US

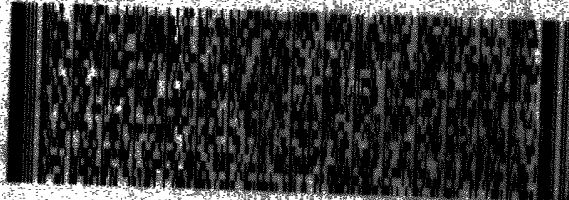
TO

EUROFINS TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 604843101

(708) 534-5200
REF: 9500-86559

RMA: 111111



FedEx
TRK#
0221 9174 5385 5780

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 JOTA

60484
IL-US
ORD



FID: 832374 06Nov2020 GRBA 56DG3/51D8/05A2

ORIGIN ID:PHDA (330) 966-9677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
CAD: 0562071/CAFE3406

MARINETTE, WI 54143
UNITED STATES US

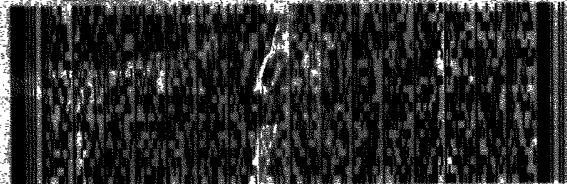
TO

EUROFINS TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 604843101

(708) 534-5200
REF: 9500-86559

RMA: 111111

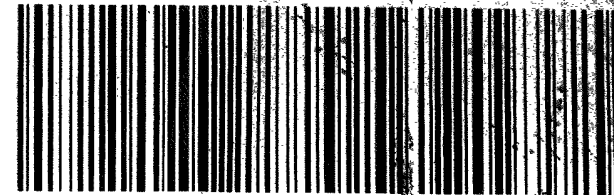


FedEx
TRK#
0221 9174 5385 5768

RETURNS MON - SA
SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 JOTA

60484
IL-US
ORD



FID: 832374 06Nov2020 GRBA 56DG3/51D8/05A2

ORIGIN ID: PIDA (390) 966-8677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
CAD: 0562071/CAFE3406

MARINETTE, WI 54149
UNITED STATES US

TO

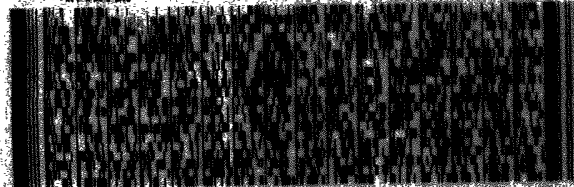
EUROFINS TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 604843101

(708) 694-6200

REF: 5600-86569

RNA: 011010

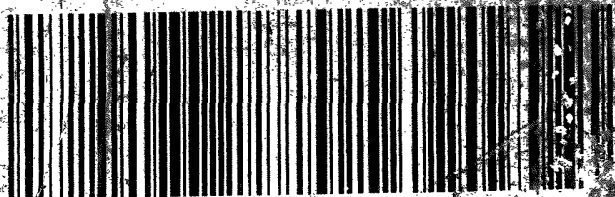


RETURNS MON-SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

TRKF
0221 9174 5385 5779

X0 JOTA

62484
IL-US
ORD



FTD: 832374 06Nov2020 GRBA 560G3/5108/05A2

ORIGIN ID: RRLA (262) 202-5955
GUEST: KAELYN BLOTZ
COUNTRY INN & SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

MARINETTE, WI 54149
UNITED STATES US

TO

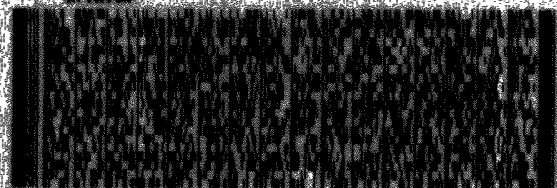
TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(708) 694-6200

REF:

RNA: 011010

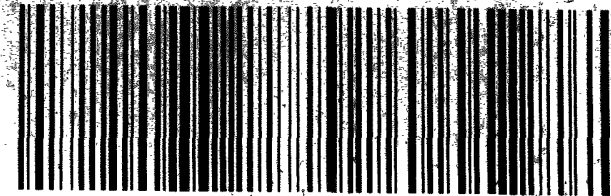


RETURNS MON-SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

TRKF
0221 7125 4943 4809

X0 JOTA

60484
IL-US
ORD



FTD: 832374 06Nov2020 GRBA 560G3/5108/05A2

(262) 202-5955

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

CT
43

ERICA CHICAGO
ND STREET

SITY PARK IL 60484 - 3101

FedEx
Express



RETURNS MON - SAT

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

FedEx
TRK# 0221 7125 4943 4831

X0 JOTA



FID: 832374 06Nov2020 GRBA 560G3/51D8/05A2

ORIGIN ID:RRLA (262) 202-5955
GUEST: KAELYN BLOTZ
COUNTRY INN& SUITES
2020 OLD PESHTIGO. CT.

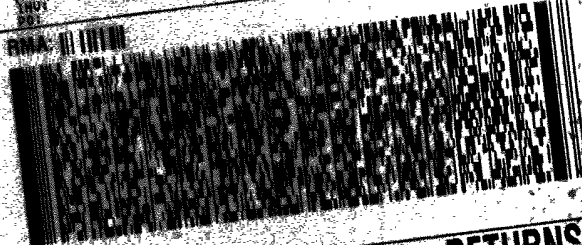
MARINETTE, WI 54143
UNITED STATES US

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

TO
TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484 - 3101

(700) 684 - 5200



FedEx
Express



RETURNS MON - SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

FedEx
TRK# 0221 7125 4943 4820

X0 JOTA

60484
IL-US
ORD



FID: 832374 06Nov2020 GRBA 560G3/51D8/05A2

ORIGIN ID:RRLA (262) 202-5955
GUEST: KAELYN BLOTZ
COUNTRY INN & SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB
CAD: 525155/CAFE340

MARINETTE, WI 54143
UNITED STATES US

TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(708) 584-5200

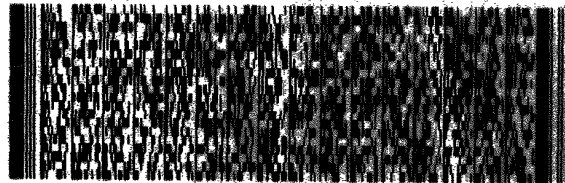
REF:

INU:

PDI:

DEPT:

RMA: ||| ||| ||| |||



FedEx
Express



FedEx

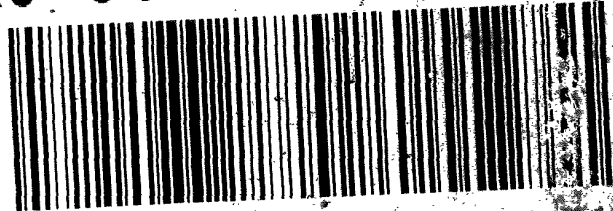
TRK#
0221

7125 4943 4810

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

X0 JOTA



FID: 832374 06Nov2020 GRBA 560G3/51D8/05A2

ORIGIN ID:RRLA (262) 202-5955
GUEST: JEREMY HAMLIN
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 06MAR20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3211

MARINETTE, WI 54143
UNITED STATES US

TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(708) 584-5200

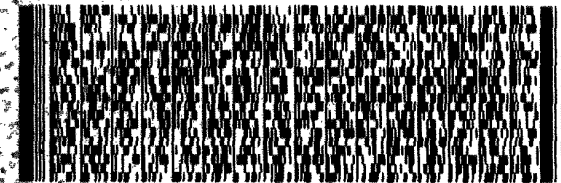
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DEPT:

RMA: ||| ||| ||| |||



FedEx
Express



FedEx

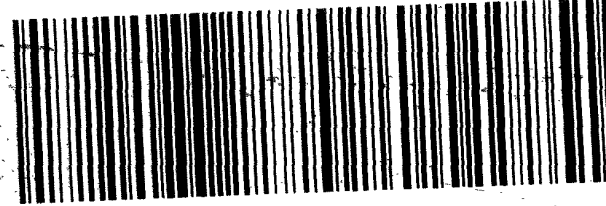
TRK#
0221

7125 4942 2106

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

X0 JOTA



FID: 832374 06Nov2020 GRBA 560G3/51D8/05A2



- 1
- 2
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- 12
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- 14

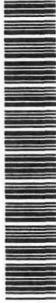
Eurofins TestAmerica, Chicago

2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record



Environment Testing
America



Client Information (Sub Contract Lab) Client Contact: Shipping/Receiving Company: TestAmerica Laboratories, Inc. Address: 880 Riverside Parkway, City: West Sacramento State, Zip: CA, 95605 Phone: 916-373-5600(Tel) 916-372-1059(Fax) Email:		Sampler: Fredrick, Sandie Lab PM: sandra.fredrick@eurofins.com E-Mail: sandra.fredrick@eurofins.com Phone:		Carrier Tracking No(s): 500-141916-1 State of Origin: Wisconsin Page: 1 of 2 Job #: 500-190766-1 Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Arnrchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		COC No: 500-141916-1 Page: 1 of 2 Job #: 500-190766-1 Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - other (specify)	
Due Date Requested: 11/19/2020 TAT Requested (days): PO #: WO #: Project #: 50017363 SSOW#:		Accreditations Required (See note): State - Wisconsin; State Program - Wisconsin		Analysis Requested Total Number of containers		Special Instructions/Note:	
Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Sewage, Stormwater, Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analytes
GW-L01 (11052020) (500-190766-1)	11/5/20	08:30 Central	Water	Water	X	X	
GW-L02 (11052020) (500-190766-2)	11/5/20	08:45 Central	Water	Water	X	X	
GW-L03 (11052020) (500-190766-3)	11/5/20	09:05 Central	Water	Water	X	X	
GW-L04 (11052020) (500-190766-4)	11/5/20	09:15 Central	Water	Water	X	X	
GW-L05 (11052020) (500-190766-5)	11/5/20	09:30 Central	Water	Water	X	X	
GW-L06 (11052020) (500-190766-6)	11/5/20	10:00 Central	Water	Water	X	X	
GW-L06 (11052020) (500-190766-6MS)	11/5/20	10:00 Central	MS	Water	X	X	
GW-L06 (11052020) (500-190766-6MSD)	11/5/20	10:00 Central	MSD	Water	X	X	
GW-L07 (11052020) (500-190766-7)	11/5/20	10:30 Central	Water	Water	X	X	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon 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/test/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 compliance to Eurofins TestAmerica.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by: Date: 11/6/20
 Relinquished by: Date: 11/6/20
 Relinquished by: Date: 11/6/20
 Relinquished by: Date: 11/6/20

Received by: Date/Time: 11/10/20 09:45
 Received by: Date/Time:
 Received by: Date/Time:

Company: ETH-SAC
 Company:
 Company:

Custody Seal No.: 1363728/1363726/1363731/1363730
 Cooler Temperature(s) °C and Other Remarks: DB: 21.0.7/1.0/2.3 core: 1.6/0.8/1/2.4
 Ver: 01/16/2019



Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-190766-1

Login Number: 190766

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	
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	2.6,2.7,2.5,1.8,2.7,1.6,1.0,2.0,1.2,0.1,1.4
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.	True	
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: ARCADIS U.S., Inc.

Job Number: 500-190766-1

Login Number: 190766

List Number: 2

Creator: Saephan, Kae C

List Source: Eurofins TestAmerica, Sacramento

List Creation: 11/10/20 01:48 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	1363728/1363726/1363731/1363730
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: 2.1/0.7/1.0/2.3c corr: 1.6/0.8/1.1/2.4c
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	



Place Field Sheet Label Here

Tracking #: 189344500888

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other _____

Job: _____

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: AK-13 Corr. Factor: (+/-) 0.1 °C

Ice X Wet X Gel _____ Other _____

Cooler Custody Seal: 1363731

Cooler ID: 3 OF 4

Temp Observed: 1.0 °C Corrected: 1.1 °C

From: Temp Blank Sample

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooler Temperature is acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Initials: [Signature] Date: 11/10/20

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

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

Initials: [Signature] Date: 11/10/20

Notes: _____

Trizma Lot #(s): _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NCM Filed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Log Release checked in TALS?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initials: [Signature] Date: 11/10/20

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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)
500-190766-1	GW-L01 (11052020)	48	51	52	54	55	53	50	48
500-190766-2	GW-L02 (11052020)	59	67	66	65	67	66	66	53
500-190766-3	GW-L03 (11052020)	36	37	37	39		39	35	33
500-190766-3 - DL	GW-L03 (11052020)					36			
500-190766-4	GW-L04 (11052020)	45	45	53	54	57	55	53	46
500-190766-5	GW-L05 (11052020)	59	65	68	69	70	70	71	63
500-190766-6	GW-L06 (11052020)	76	82	84	86	85	85	79	71
500-190766-6 MS	GW-L06 (11052020)	69	76	78	77	77	79	71	67
500-190766-6 MSD	GW-L06 (11052020)	74	81	85	86	86	89	83	74
500-190766-7	GW-L07 (11052020)	79	85	89	92	92	88	85	81
500-190766-8	GW-L08 (11052020)	57	63	67	67	67	67	66	54
500-190766-9	GW-L09 (11052020)	70	75	78	81	83	82	75	73
500-190766-10	GW-L10 (11052020)	65	68	69	68	71	69	69	60
500-190766-11	DUP-01 (11052020)	80	87	94	97	98	101	104	96
500-190766-12	Field Blank-11-5-2020	96	101	99	96	102	94	94	94
LCS 320-431320/2-A	Lab Control Sample	94	96	94	96	98	90	88	88
MB 320-431320/1-A	Method Blank	91	93	90	89	91	86	86	84

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
500-190766-1	GW-L01 (11052020)	46	36	33	47	50	49	48	33
500-190766-2	GW-L02 (11052020)	43	44	40	57	59	59	52	36
500-190766-3	GW-L03 (11052020)	27	25	23 *5	33	36	35	35	29
500-190766-3 - DL	GW-L03 (11052020)								
500-190766-4	GW-L04 (11052020)	34	27	36	45	49	48	43	39
500-190766-5	GW-L05 (11052020)	55	52	52	62	68	67	59	53
500-190766-6	GW-L06 (11052020)	65	59	65	77	79	77	73	59
500-190766-6 MS	GW-L06 (11052020)	56	63	64	69	74	70	61	57
500-190766-6 MSD	GW-L06 (11052020)	59	68	69	76	81	74	63	63
500-190766-7	GW-L07 (11052020)	73	67	74	78	86	82	85	60
500-190766-8	GW-L08 (11052020)	38	45	46	58	63	61	51	42
500-190766-9	GW-L09 (11052020)	50	55	53	73	79	75	67	64
500-190766-10	GW-L10 (11052020)	48	52	52	63	66	63	52	51
500-190766-11	DUP-01 (11052020)	68	72	43	86	92	97	82	88
500-190766-12	Field Blank-11-5-2020	91	89	90	96	100	102	97	59
LCS 320-431320/2-A	Lab Control Sample	87	84	88	95	99	100	93	60
MB 320-431320/1-A	Method Blank	82	84	82	93	95	95	86	55

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
500-190766-1	GW-L01 (11052020)	47	46	37	27	24	82	90	97
500-190766-2	GW-L02 (11052020)	46	44	35	23	22	112	131	139
500-190766-3	GW-L03 (11052020)	31	33	28	16	15	59		75
500-190766-3 - DL	GW-L03 (11052020)							42	
500-190766-4	GW-L04 (11052020)	44	38	30	21	18	89	104	127
500-190766-5	GW-L05 (11052020)	58	57	47	34	32	120	118	143
500-190766-6	GW-L06 (11052020)	66	45	37	40	34	135	133	153 *5
500-190766-6 MS	GW-L06 (11052020)	64	48	44	45	39	141	133	162 *5
500-190766-6 MSD	GW-L06 (11052020)	71	53	48	49	47	158 *5	153 *5	187 *5

Eurofins TestAmerica, Chicago

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
500-190766-7	GW-L07 (11052020)	72	67	56	46	41	145	132	160 *5
500-190766-8	GW-L08 (11052020)	46	38	32	28	28	119	127	140
500-190766-9	GW-L09 (11052020)	62	53	44	35	35	142	158 *5	182 *5
500-190766-10	GW-L10 (11052020)	54	41	37	39	35	123	128	150
500-190766-11	DUP-01 (11052020)	81	66	56	48	43	154 *5	169 *5	234 *5
500-190766-12	Field Blank-11-5-2020	65	69	54	36	31	80	93	100
LCS 320-431320/2-A	Lab Control Sample	62	86	89	87	89	72	75	89
MB 320-431320/1-A	Method Blank	58	87	88	74	81	74	76	85

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
500-190766-1	GW-L01 (11052020)	47
500-190766-2	GW-L02 (11052020)	57
500-190766-3	GW-L03 (11052020)	34
500-190766-3 - DL	GW-L03 (11052020)	
500-190766-4	GW-L04 (11052020)	47
500-190766-5	GW-L05 (11052020)	63
500-190766-6	GW-L06 (11052020)	74
500-190766-6 MS	GW-L06 (11052020)	68
500-190766-6 MSD	GW-L06 (11052020)	73
500-190766-7	GW-L07 (11052020)	80
500-190766-8	GW-L08 (11052020)	59
500-190766-9	GW-L09 (11052020)	71
500-190766-10	GW-L10 (11052020)	61
500-190766-11	DUP-01 (11052020)	85
500-190766-12	Field Blank-11-5-2020	92
LCS 320-431320/2-A	Lab Control Sample	93
MB 320-431320/1-A	Method Blank	85

Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHxA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- PFHxDA = 13C2 PFHxDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- dMeFOSA = d-N-MeFOSA-M
- dEtFOSA = d-N-EtFOSA-M
- NMFM = d7-N-MeFOSE-M

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Project/Site: Marinette 30062361.00001

Job ID: 500-190766-1

NEFM = d9-N-EtFOSE-M

M242FTS = M2-4:2 FTS

M262FTS = M2-6:2 FTS

M282FTS = M2-8:2 FTS

HFPODA = 13C3 HFPO-DA

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ANALYTICAL REPORT

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-190768-1
Client Project/Site: Marinette 30062361.00001

For:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Attn: Lisa Rutkowski



Authorized for release by:
11/20/2020 3:04:45 PM
Robin Kintz, Project Manager II
(708)534-5200
Robin.Kintz@Eurofinset.com

Designee for
Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Job ID: 500-190768-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-190768-1

Comments

No additional comments.

Receipt

The samples were received on 11/7/2020 9:55 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 11 coolers at receipt time were 0.1° C, 1.0° C, 1.2° C, 1.4° C, 1.6° C, 1.8° C, 2.0° C, 2.5° C, 2.6° C, 2.7° C and 2.7° C.

Metals

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

LCMS

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. 500-190768-5 and 500-190768-8

Method 537 (modified): Results for samples 500-190768-3, 500-190768-4, 500-190768-6 and 500-190768-7 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): Several Isotope Dilution Analyte (IDA) recovery are above the method recommended limit for the following sample: 500-190768-3. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

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

General Chemistry

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

Organic Prep

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-431316.

Method: 3535 PFC-W
Matrix: Water

Method 3535: The following samples were yellow prior to extraction: 500-190768-1, 500-190768-3, 500-190768-4, 500-190768-5, 500-190768-7 and 500-190768-11.

preparation batch 320-431316
Method: 3535 PFC-W
Matrix: Water

Method 3535: The following sample was dark and contain sediment prior to extraction: 500-190768-2.

preparation batch 320-431316
Method: 3535 PFC-W
Matrix: Water

Method 3535: The following samples were yellow and contain sediment prior to extraction: 500-190768-8, 500-190768-9 and 500-190768-10.

preparation batch 320-431316

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Job ID: 500-190768-1 (Continued)

Laboratory: Eurofins TestAmerica, Chicago (Continued)

Method: 3535 PFC-W
Matrix: Water

Method 3535: During the solid phase extraction process, the following samples contained non-settable particulates which clogged the solid phase extraction column: 500-190768-2, 500-190768-8 and 500-190768-9.

preparation batch 320-431316
Method: 3535 PFC-W
Matrix: Water

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

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Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
6010C	Metals (ICP)	SW846	TAL CHI
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
FILTRATION	Sample Filtration	None	TAL CHI

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-190768-1	GW-M01 (11052020)	Water	11/05/20 12:20	11/07/20 09:55	
500-190768-2	GW-M02 (11052020)	Water	11/05/20 12:55	11/07/20 09:55	
500-190768-3	GW-M03 (11052020)	Water	11/05/20 13:10	11/07/20 09:55	
500-190768-4	GW-M04 (11052020)	Water	11/05/20 13:20	11/07/20 09:55	
500-190768-5	GW-M05 (11052020)	Water	11/05/20 13:55	11/07/20 09:55	
500-190768-6	GW-M06 (11052020)	Water	11/05/20 14:05	11/07/20 09:55	
500-190768-7	GW-M07 (11052020)	Water	11/05/20 14:20	11/07/20 09:55	
500-190768-8	GW-M08 (11052020)	Water	11/05/20 15:00	11/07/20 09:55	
500-190768-9	GW-M09 (11052020)	Water	11/05/20 15:30	11/07/20 09:55	
500-190768-10	GW-M10 (11052020)	Water	11/05/20 15:50	11/07/20 09:55	
500-190768-11	DUP-02 (11052020)	Water	11/05/20 00:00	11/07/20 09:55	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M01 (11052020)

Lab Sample ID: 500-190768-1

Date Collected: 11/05/20 12:20

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	11		4.8	2.3	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluoropentanoic acid (PFPeA)	15		1.9	0.47	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorohexanoic acid (PFHxA)	12		1.9	0.56	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluoroheptanoic acid (PFHpA)	9.0		1.9	0.24	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorooctanoic acid (PFOA)	15		1.9	0.81	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorononanoic acid (PFNA)	1.2	J	1.9	0.26	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorodecanoic acid (PFDA)	0.41	J	1.9	0.30	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.1	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.70	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.85	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.90	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorobutanesulfonic acid (PFBS)	1.1	J B	1.9	0.19	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluoropentanesulfonic acid (PFPeS)	0.44	J	1.9	0.29	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorohexanesulfonic acid (PFHxS)	1.7	J	1.9	0.55	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorooctanesulfonic acid (PFOS)	5.5	B	1.9	0.52	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.93	ng/L		11/13/20 04:08	11/14/20 02:45	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.94	ng/L		11/13/20 04:08	11/14/20 02:45	1
NEtFOSA	<1.9		1.9	0.83	ng/L		11/13/20 04:08	11/14/20 02:45	1
NMeFOSA	<1.9		1.9	0.41	ng/L		11/13/20 04:08	11/14/20 02:45	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.1	ng/L		11/13/20 04:08	11/14/20 02:45	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.2	ng/L		11/13/20 04:08	11/14/20 02:45	1
NMeFOSE	<3.8		3.8	1.3	ng/L		11/13/20 04:08	11/14/20 02:45	1
NEtFOSE	<1.9		1.9	0.81	ng/L		11/13/20 04:08	11/14/20 02:45	1
4:2 FTS	<1.9		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 02:45	1
6:2 FTS	5.1		4.8	2.4	ng/L		11/13/20 04:08	11/14/20 02:45	1
8:2 FTS	6.8		1.9	0.44	ng/L		11/13/20 04:08	11/14/20 02:45	1
10:2 FTS	<1.9		1.9	0.64	ng/L		11/13/20 04:08	11/14/20 02:45	1
DONA	<1.9		1.9	0.38	ng/L		11/13/20 04:08	11/14/20 02:45	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		11/13/20 04:08	11/14/20 02:45	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 02:45	1
F-53B Minor	<1.9		1.9	0.31	ng/L		11/13/20 04:08	11/14/20 02:45	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	74		25 - 150				11/13/20 04:08	11/14/20 02:45	1
13C5 PFPeA	60		25 - 150				11/13/20 04:08	11/14/20 02:45	1
13C2 PFHxA	87		25 - 150				11/13/20 04:08	11/14/20 02:45	1
13C4 PFHpA	87		25 - 150				11/13/20 04:08	11/14/20 02:45	1
13C4 PFOA	97		25 - 150				11/13/20 04:08	11/14/20 02:45	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M01 (11052020)

Lab Sample ID: 500-190768-1

Date Collected: 11/05/20 12:20

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	100		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C2 PFDA	105		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C2 PFUnA	91		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C2 PFDoA	81		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C2 PFTeDA	77		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C2 PFHxDA	72		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C3 PFBS	75		25 - 150	11/13/20 04:08	11/14/20 02:45	1
18O2 PFHxS	90		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C4 PFOS	98		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C8 FOSA	95		25 - 150	11/13/20 04:08	11/14/20 02:45	1
d3-NMeFOSAA	133		25 - 150	11/13/20 04:08	11/14/20 02:45	1
d5-NEtFOSAA	119		25 - 150	11/13/20 04:08	11/14/20 02:45	1
d-N-MeFOSA-M	107		20 - 150	11/13/20 04:08	11/14/20 02:45	1
d-N-EtFOSA-M	81		20 - 150	11/13/20 04:08	11/14/20 02:45	1
d7-N-MeFOSE-M	95		10 - 120	11/13/20 04:08	11/14/20 02:45	1
d9-N-EtFOSE-M	71		10 - 120	11/13/20 04:08	11/14/20 02:45	1
M2-4:2 FTS	93		25 - 150	11/13/20 04:08	11/14/20 02:45	1
M2-6:2 FTS	91		25 - 150	11/13/20 04:08	11/14/20 02:45	1
M2-8:2 FTS	140		25 - 150	11/13/20 04:08	11/14/20 02:45	1
13C3 HFPO-DA	77		25 - 150	11/13/20 04:08	11/14/20 02:45	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	13		0.20	0.082	mg/L		11/12/20 07:34	11/12/20 21:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.22		0.20	0.082	mg/L		11/12/20 07:36	11/12/20 21:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	14		1.0	0.47	mg/L			11/11/20 22:14	1
Alkalinity	200		5.0	3.7	mg/L			11/14/20 16:07	1
Bicarbonate Alkalinity as CaCO3	180		5.0	3.7	mg/L			11/14/20 16:07	1
Carbonate Alkalinity as CaCO3	14		5.0	3.7	mg/L			11/14/20 16:07	1
Total Suspended Solids	77		6.7	2.6	mg/L			11/12/20 11:01	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	12		1.0	0.47	mg/L			11/17/20 00:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M02 (11052020)

Lab Sample ID: 500-190768-2

Date Collected: 11/05/20 12:55

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.8	J	5.0	2.4	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluoropentanoic acid (PFPeA)	8.4		2.0	0.49	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorohexanoic acid (PFHxA)	8.4		2.0	0.58	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluoroheptanoic acid (PFHpA)	4.3		2.0	0.25	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorooctanoic acid (PFOA)	42		2.0	0.86	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorononanoic acid (PFNA)	2.4		2.0	0.27	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorodecanoic acid (PFDA)	0.69	J	2.0	0.31	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.74	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.90	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.95	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorobutanesulfonic acid (PFBS)	0.53	J B	2.0	0.20	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluoropentanesulfonic acid (PFPeS)	0.32	J	2.0	0.30	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	0.57	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorooctanesulfonic acid (PFOS)	5.3	B	2.0	0.54	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.98	ng/L		11/13/20 04:08	11/14/20 02:54	1
Perfluorooctanesulfonamide (FOSA)	1.4	J	2.0	0.99	ng/L		11/13/20 04:08	11/14/20 02:54	1
NEtFOSA	<2.0		2.0	0.88	ng/L		11/13/20 04:08	11/14/20 02:54	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/13/20 04:08	11/14/20 02:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		11/13/20 04:08	11/14/20 02:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		11/13/20 04:08	11/14/20 02:54	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/13/20 04:08	11/14/20 02:54	1
NEtFOSE	<2.0		2.0	0.86	ng/L		11/13/20 04:08	11/14/20 02:54	1
4:2 FTS	0.45	J	2.0	0.24	ng/L		11/13/20 04:08	11/14/20 02:54	1
6:2 FTS	12		5.0	2.5	ng/L		11/13/20 04:08	11/14/20 02:54	1
8:2 FTS	10		2.0	0.46	ng/L		11/13/20 04:08	11/14/20 02:54	1
10:2 FTS	<2.0		2.0	0.68	ng/L		11/13/20 04:08	11/14/20 02:54	1
DONA	<2.0		2.0	0.40	ng/L		11/13/20 04:08	11/14/20 02:54	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/13/20 04:08	11/14/20 02:54	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/13/20 04:08	11/14/20 02:54	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/13/20 04:08	11/14/20 02:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	63		25 - 150				11/13/20 04:08	11/14/20 02:54	1
13C5 PFPeA	48		25 - 150				11/13/20 04:08	11/14/20 02:54	1
13C2 PFHxA	67		25 - 150				11/13/20 04:08	11/14/20 02:54	1
13C4 PFHpA	67		25 - 150				11/13/20 04:08	11/14/20 02:54	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M02 (11052020)

Lab Sample ID: 500-190768-2

Date Collected: 11/05/20 12:55

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOA	72		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C5 PFNA	66		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C2 PFDA	66		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C2 PFUnA	60		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C2 PFDoA	42		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C2 PFTeDA	26		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C2 PFHxDA	36		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C3 PFBS	56		25 - 150	11/13/20 04:08	11/14/20 02:54	1
18O2 PFHxS	66		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C4 PFOS	66		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C8 FOSA	70		25 - 150	11/13/20 04:08	11/14/20 02:54	1
d3-NMeFOSAA	78		25 - 150	11/13/20 04:08	11/14/20 02:54	1
d5-NEtFOSAA	75		25 - 150	11/13/20 04:08	11/14/20 02:54	1
d-N-MeFOSA-M	56		20 - 150	11/13/20 04:08	11/14/20 02:54	1
d-N-EtFOSA-M	37		20 - 150	11/13/20 04:08	11/14/20 02:54	1
d7-N-MeFOSE-M	20		10 - 120	11/13/20 04:08	11/14/20 02:54	1
d9-N-EtFOSE-M	16		10 - 120	11/13/20 04:08	11/14/20 02:54	1
M2-4:2 FTS	69		25 - 150	11/13/20 04:08	11/14/20 02:54	1
M2-6:2 FTS	74		25 - 150	11/13/20 04:08	11/14/20 02:54	1
M2-8:2 FTS	86		25 - 150	11/13/20 04:08	11/14/20 02:54	1
13C3 HFPO-DA	60		25 - 150	11/13/20 04:08	11/14/20 02:54	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	600		100	39	mg/L			11/12/20 11:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M03 (11052020)

Lab Sample ID: 500-190768-3

Date Collected: 11/05/20 13:10

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	110		4.9	2.4	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluoropentanoic acid (PFPeA)	380		2.0	0.48	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluoroheptanoic acid (PFHpA)	260		2.0	0.25	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorononanoic acid (PFNA)	92		2.0	0.27	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorodecanoic acid (PFDA)	2.8		2.0	0.31	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.54	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.72	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.88	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.93	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorobutanesulfonic acid (PFBS)	20	B	2.0	0.20	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluoropentanesulfonic acid (PFPeS)	30		2.0	0.30	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorohexanesulfonic acid (PFHxS)	140		2.0	0.56	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	7.6		2.0	0.19	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorooctanesulfonic acid (PFOS)	210	B	2.0	0.53	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.96	ng/L		11/13/20 04:08	11/14/20 03:03	1
Perfluorooctanesulfonamide (FOSA)	39		2.0	0.97	ng/L		11/13/20 04:08	11/14/20 03:03	1
NEtFOSA	<2.0		2.0	0.86	ng/L		11/13/20 04:08	11/14/20 03:03	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/13/20 04:08	11/14/20 03:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		11/13/20 04:08	11/14/20 03:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	10		4.9	1.3	ng/L		11/13/20 04:08	11/14/20 03:03	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/13/20 04:08	11/14/20 03:03	1
NEtFOSE	<2.0		2.0	0.84	ng/L		11/13/20 04:08	11/14/20 03:03	1
4:2 FTS	120		2.0	0.24	ng/L		11/13/20 04:08	11/14/20 03:03	1
8:2 FTS	38		2.0	0.46	ng/L		11/13/20 04:08	11/14/20 03:03	1
10:2 FTS	<2.0		2.0	0.66	ng/L		11/13/20 04:08	11/14/20 03:03	1
DONA	<2.0		2.0	0.40	ng/L		11/13/20 04:08	11/14/20 03:03	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/13/20 04:08	11/14/20 03:03	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/13/20 04:08	11/14/20 03:03	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/13/20 04:08	11/14/20 03:03	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	115		25 - 150				11/13/20 04:08	11/14/20 03:03	1
13C5 PFPeA	88		25 - 150				11/13/20 04:08	11/14/20 03:03	1
13C4 PFHpA	138		25 - 150				11/13/20 04:08	11/14/20 03:03	1
13C5 PFNA	144		25 - 150				11/13/20 04:08	11/14/20 03:03	1
13C2 PFDA	162	*5	25 - 150				11/13/20 04:08	11/14/20 03:03	1
13C2 PFUnA	172	*5	25 - 150				11/13/20 04:08	11/14/20 03:03	1
13C2 PFDoA	118		25 - 150				11/13/20 04:08	11/14/20 03:03	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M03 (11052020)

Lab Sample ID: 500-190768-3

Date Collected: 11/05/20 13:10

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFTeDA	121		25 - 150	11/13/20 04:08	11/14/20 03:03	1
13C2 PFHxDA	138		25 - 150	11/13/20 04:08	11/14/20 03:03	1
13C3 PFBS	111		25 - 150	11/13/20 04:08	11/14/20 03:03	1
18O2 PFHxS	147		25 - 150	11/13/20 04:08	11/14/20 03:03	1
13C4 PFOS	146		25 - 150	11/13/20 04:08	11/14/20 03:03	1
13C8 FOSA	146		25 - 150	11/13/20 04:08	11/14/20 03:03	1
d3-NMeFOSAA	193	*5	25 - 150	11/13/20 04:08	11/14/20 03:03	1
d5-NEtFOSAA	170	*5	25 - 150	11/13/20 04:08	11/14/20 03:03	1
d-N-MeFOSA-M	173	*5	20 - 150	11/13/20 04:08	11/14/20 03:03	1
d-N-EtFOSA-M	132		20 - 150	11/13/20 04:08	11/14/20 03:03	1
d7-N-MeFOSE-M	146	*5	10 - 120	11/13/20 04:08	11/14/20 03:03	1
d9-N-EtFOSE-M	122	*5	10 - 120	11/13/20 04:08	11/14/20 03:03	1
M2-4:2 FTS	132		25 - 150	11/13/20 04:08	11/14/20 03:03	1
M2-8:2 FTS	208	*5	25 - 150	11/13/20 04:08	11/14/20 03:03	1
13C3 HFPO-DA	119		25 - 150	11/13/20 04:08	11/14/20 03:03	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Perfluorohexanoic acid (PFHxA)	630		99	29	ng/L		11/13/20 04:08	11/14/20 21:16	50
Perfluorooctanoic acid (PFOA)	5400		99	42	ng/L		11/13/20 04:08	11/14/20 21:16	50
6:2 FTS	2300		250	120	ng/L		11/13/20 04:08	11/14/20 21:16	50

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxA	84		25 - 150	11/13/20 04:08	11/14/20 21:16	50
13C4 PFOA	86		25 - 150	11/13/20 04:08	11/14/20 21:16	50
M2-6:2 FTS	104		25 - 150	11/13/20 04:08	11/14/20 21:16	50

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	44		5.0	1.9	mg/L			11/12/20 11:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M04 (11052020)

Lab Sample ID: 500-190768-4

Date Collected: 11/05/20 13:20

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	24		4.7	2.3	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluoropentanoic acid (PFPeA)	60		1.9	0.46	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorohexanoic acid (PFHxA)	94		1.9	0.55	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluoroheptanoic acid (PFHpA)	38		1.9	0.24	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorononanoic acid (PFNA)	18		1.9	0.25	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorodecanoic acid (PFDA)	3.7		1.9	0.29	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.84	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorobutanesulfonic acid (PFBS)	3.4	B	1.9	0.19	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluoropentanesulfonic acid (PFPeS)	3.9		1.9	0.28	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorohexanesulfonic acid (PFHxS)	30		1.9	0.54	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.8		1.9	0.18	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorooctanesulfonic acid (PFOS)	140	B	1.9	0.51	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		11/13/20 04:08	11/14/20 03:13	1
Perfluorooctanesulfonamide (FOSA)	42		1.9	0.92	ng/L		11/13/20 04:08	11/14/20 03:13	1
NEtFOSA	<1.9		1.9	0.82	ng/L		11/13/20 04:08	11/14/20 03:13	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:08	11/14/20 03:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:08	11/14/20 03:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	11		4.7	1.2	ng/L		11/13/20 04:08	11/14/20 03:13	1
NMeFOSE	<3.8		3.8	1.3	ng/L		11/13/20 04:08	11/14/20 03:13	1
NEtFOSE	<1.9		1.9	0.80	ng/L		11/13/20 04:08	11/14/20 03:13	1
4:2 FTS	16		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 03:13	1
8:2 FTS	92		1.9	0.43	ng/L		11/13/20 04:08	11/14/20 03:13	1
10:2 FTS	<1.9		1.9	0.63	ng/L		11/13/20 04:08	11/14/20 03:13	1
DONA	<1.9		1.9	0.38	ng/L		11/13/20 04:08	11/14/20 03:13	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		11/13/20 04:08	11/14/20 03:13	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 03:13	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:08	11/14/20 03:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	90		25 - 150				11/13/20 04:08	11/14/20 03:13	1
13C5 PFPeA	70		25 - 150				11/13/20 04:08	11/14/20 03:13	1
13C2 PFHxA	93		25 - 150				11/13/20 04:08	11/14/20 03:13	1
13C4 PFHpA	99		25 - 150				11/13/20 04:08	11/14/20 03:13	1
13C5 PFNA	98		25 - 150				11/13/20 04:08	11/14/20 03:13	1
13C2 PFDA	96		25 - 150				11/13/20 04:08	11/14/20 03:13	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M04 (11052020)

Lab Sample ID: 500-190768-4

Date Collected: 11/05/20 13:20

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFUnA	101		25 - 150	11/13/20 04:08	11/14/20 03:13	1
13C2 PFDoA	90		25 - 150	11/13/20 04:08	11/14/20 03:13	1
13C2 PFTeDA	83		25 - 150	11/13/20 04:08	11/14/20 03:13	1
13C2 PFHxDA	78		25 - 150	11/13/20 04:08	11/14/20 03:13	1
13C3 PFBS	85		25 - 150	11/13/20 04:08	11/14/20 03:13	1
18O2 PFHxS	99		25 - 150	11/13/20 04:08	11/14/20 03:13	1
13C4 PFOS	99		25 - 150	11/13/20 04:08	11/14/20 03:13	1
13C8 FOSA	104		25 - 150	11/13/20 04:08	11/14/20 03:13	1
d3-NMeFOSAA	115		25 - 150	11/13/20 04:08	11/14/20 03:13	1
d5-NEtFOSAA	120		25 - 150	11/13/20 04:08	11/14/20 03:13	1
d-N-MeFOSA-M	82		20 - 150	11/13/20 04:08	11/14/20 03:13	1
d-N-EtFOSA-M	61		20 - 150	11/13/20 04:08	11/14/20 03:13	1
d7-N-MeFOSE-M	55		10 - 120	11/13/20 04:08	11/14/20 03:13	1
d9-N-EtFOSE-M	44		10 - 120	11/13/20 04:08	11/14/20 03:13	1
M2-4:2 FTS	81		25 - 150	11/13/20 04:08	11/14/20 03:13	1
M2-8:2 FTS	101		25 - 150	11/13/20 04:08	11/14/20 03:13	1
13C3 HFPO-DA	86		25 - 150	11/13/20 04:08	11/14/20 03:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1000		19	8.0	ng/L		11/13/20 04:08	11/14/20 20:58	10
6:2 FTS	520		47	24	ng/L		11/13/20 04:08	11/14/20 20:58	10
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	86		25 - 150	11/13/20 04:08	11/14/20 20:58	10			
M2-6:2 FTS	94		25 - 150	11/13/20 04:08	11/14/20 20:58	10			

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	100		5.9	2.3	mg/L			11/12/20 11:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M05 (11052020)

Lab Sample ID: 500-190768-5

Date Collected: 11/05/20 13:55

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	8.7		4.7	2.2	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluoropentanoic acid (PFPeA)	14		1.9	0.46	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorohexanoic acid (PFHxA)	15		1.9	0.54	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluoroheptanoic acid (PFHpA)	8.8		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorooctanoic acid (PFOA)	120		1.9	0.79	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorononanoic acid (PFNA)	11		1.9	0.25	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorodecanoic acid (PFDA)	4.0		1.9	0.29	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluoroundecanoic acid (PFUnA)	7.9	I	1.9	1.0	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.51	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorobutanesulfonic acid (PFBS)	0.88	J B	1.9	0.19	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluoropentanesulfonic acid (PFPeS)	0.59	J	1.9	0.28	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorohexanesulfonic acid (PFHxS)	7.6		1.9	0.53	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.51	J	1.9	0.18	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorooctanesulfonic acid (PFOS)	42	B	1.9	0.50	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		11/13/20 04:08	11/14/20 03:22	1
Perfluorooctanesulfonamide (FOSA)	68		1.9	0.92	ng/L		11/13/20 04:08	11/14/20 03:22	1
NEtFOSA	<1.9		1.9	0.81	ng/L		11/13/20 04:08	11/14/20 03:22	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:08	11/14/20 03:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:08	11/14/20 03:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	10		4.7	1.2	ng/L		11/13/20 04:08	11/14/20 03:22	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:08	11/14/20 03:22	1
NEtFOSE	<1.9		1.9	0.79	ng/L		11/13/20 04:08	11/14/20 03:22	1
4:2 FTS	2.1		1.9	0.22	ng/L		11/13/20 04:08	11/14/20 03:22	1
6:2 FTS	140		4.7	2.3	ng/L		11/13/20 04:08	11/14/20 03:22	1
8:2 FTS	180		1.9	0.43	ng/L		11/13/20 04:08	11/14/20 03:22	1
10:2 FTS	<1.9		1.9	0.63	ng/L		11/13/20 04:08	11/14/20 03:22	1
DONA	<1.9		1.9	0.37	ng/L		11/13/20 04:08	11/14/20 03:22	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:08	11/14/20 03:22	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/13/20 04:08	11/14/20 03:22	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:08	11/14/20 03:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	77		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C5 PFPeA	61		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C2 PFHxA	85		25 - 150	11/13/20 04:08	11/14/20 03:22	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M05 (11052020)

Lab Sample ID: 500-190768-5

Date Collected: 11/05/20 13:55

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	87		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C4 PFOA	91		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C5 PFNA	89		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C2 PFDA	95		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C2 PFUnA	91		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C2 PFDoA	67		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C2 PFTeDA	74		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C2 PFHxDA	70		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C3 PFBS	74		25 - 150	11/13/20 04:08	11/14/20 03:22	1
18O2 PFHxS	82		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C4 PFOS	88		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C8 FOSA	87		25 - 150	11/13/20 04:08	11/14/20 03:22	1
d3-NMeFOSAA	107		25 - 150	11/13/20 04:08	11/14/20 03:22	1
d5-NEtFOSAA	99		25 - 150	11/13/20 04:08	11/14/20 03:22	1
d-N-MeFOSA-M	85		20 - 150	11/13/20 04:08	11/14/20 03:22	1
d-N-EtFOSA-M	59		20 - 150	11/13/20 04:08	11/14/20 03:22	1
d7-N-MeFOSE-M	63		10 - 120	11/13/20 04:08	11/14/20 03:22	1
d9-N-EtFOSE-M	49		10 - 120	11/13/20 04:08	11/14/20 03:22	1
M2-4:2 FTS	84		25 - 150	11/13/20 04:08	11/14/20 03:22	1
M2-6:2 FTS	71		25 - 150	11/13/20 04:08	11/14/20 03:22	1
M2-8:2 FTS	101		25 - 150	11/13/20 04:08	11/14/20 03:22	1
13C3 HFPO-DA	76		25 - 150	11/13/20 04:08	11/14/20 03:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	48		5.6	2.1	mg/L			11/12/20 11:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M06 (11052020)

Lab Sample ID: 500-190768-6

Date Collected: 11/05/20 14:05

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	38		4.8	2.3	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluoropentanoic acid (PFPeA)	120		1.9	0.47	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorohexanoic acid (PFHxA)	170		1.9	0.56	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluoroheptanoic acid (PFHpA)	68		1.9	0.24	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorononanoic acid (PFNA)	12		1.9	0.26	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorodecanoic acid (PFDA)	0.32	J	1.9	0.30	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.1	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.3	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.71	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.86	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.91	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorobutanesulfonic acid (PFBS)	5.8	B	1.9	0.19	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluoropentanesulfonic acid (PFPeS)	6.1		1.9	0.29	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorohexanesulfonic acid (PFHxS)	69		1.9	0.55	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.83	J	1.9	0.18	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorooctanesulfonic acid (PFOS)	11	B	1.9	0.52	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.36	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.94	ng/L		11/13/20 04:08	11/14/20 03:32	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.95	ng/L		11/13/20 04:08	11/14/20 03:32	1
NEtFOSA	<1.9		1.9	0.84	ng/L		11/13/20 04:08	11/14/20 03:32	1
NMeFOSA	<1.9		1.9	0.42	ng/L		11/13/20 04:08	11/14/20 03:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.2	ng/L		11/13/20 04:08	11/14/20 03:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.3	ng/L		11/13/20 04:08	11/14/20 03:32	1
NMeFOSE	<3.9		3.9	1.4	ng/L		11/13/20 04:08	11/14/20 03:32	1
NEtFOSE	<1.9		1.9	0.82	ng/L		11/13/20 04:08	11/14/20 03:32	1
4:2 FTS	29		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 03:32	1
8:2 FTS	3.7		1.9	0.45	ng/L		11/13/20 04:08	11/14/20 03:32	1
10:2 FTS	<1.9		1.9	0.65	ng/L		11/13/20 04:08	11/14/20 03:32	1
DONA	<1.9		1.9	0.39	ng/L		11/13/20 04:08	11/14/20 03:32	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		11/13/20 04:08	11/14/20 03:32	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 03:32	1
F-53B Minor	<1.9		1.9	0.31	ng/L		11/13/20 04:08	11/14/20 03:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	79		25 - 150				11/13/20 04:08	11/14/20 03:32	1
13C5 PFPeA	63		25 - 150				11/13/20 04:08	11/14/20 03:32	1
13C2 PFHxA	92		25 - 150				11/13/20 04:08	11/14/20 03:32	1
13C4 PFHpA	91		25 - 150				11/13/20 04:08	11/14/20 03:32	1
13C5 PFNA	94		25 - 150				11/13/20 04:08	11/14/20 03:32	1
13C2 PFDA	97		25 - 150				11/13/20 04:08	11/14/20 03:32	1
13C2 PFUnA	99		25 - 150				11/13/20 04:08	11/14/20 03:32	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M06 (11052020)

Lab Sample ID: 500-190768-6

Date Collected: 11/05/20 14:05

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFDoA	70		25 - 150	11/13/20 04:08	11/14/20 03:32	1
13C2 PFTeDA	73		25 - 150	11/13/20 04:08	11/14/20 03:32	1
13C2 PFHxDA	71		25 - 150	11/13/20 04:08	11/14/20 03:32	1
13C3 PFBS	75		25 - 150	11/13/20 04:08	11/14/20 03:32	1
18O2 PFHxS	88		25 - 150	11/13/20 04:08	11/14/20 03:32	1
13C4 PFOS	93		25 - 150	11/13/20 04:08	11/14/20 03:32	1
13C8 FOSA	87		25 - 150	11/13/20 04:08	11/14/20 03:32	1
d3-NMeFOSAA	82		25 - 150	11/13/20 04:08	11/14/20 03:32	1
d5-NEtFOSAA	91		25 - 150	11/13/20 04:08	11/14/20 03:32	1
d-N-MeFOSA-M	94		20 - 150	11/13/20 04:08	11/14/20 03:32	1
d-N-EtFOSA-M	66		20 - 150	11/13/20 04:08	11/14/20 03:32	1
d7-N-MeFOSE-M	63		10 - 120	11/13/20 04:08	11/14/20 03:32	1
d9-N-EtFOSE-M	54		10 - 120	11/13/20 04:08	11/14/20 03:32	1
M2-4:2 FTS	93		25 - 150	11/13/20 04:08	11/14/20 03:32	1
M2-8:2 FTS	119		25 - 150	11/13/20 04:08	11/14/20 03:32	1
13C3 HFPO-DA	82		25 - 150	11/13/20 04:08	11/14/20 03:32	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Perfluorooctanoic acid (PFOA)	970		19	8.2	ng/L		11/13/20 04:08	11/14/20 21:07	10
6:2 FTS	1200		48	24	ng/L		11/13/20 04:08	11/14/20 21:07	10

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOA	78		25 - 150	11/13/20 04:08	11/14/20 21:07	10
M2-6:2 FTS	101		25 - 150	11/13/20 04:08	11/14/20 21:07	10

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	60		5.0	1.9	mg/L			11/12/20 11:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M07 (11052020)

Lab Sample ID: 500-190768-7

Date Collected: 11/05/20 14:20

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	250		5.3	2.5	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorononanoic acid (PFNA)	240		2.1	0.28	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorodecanoic acid (PFDA)	21		2.1	0.33	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluoroundecanoic acid (PFUnA)	27		2.1	1.2	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorododecanoic acid (PFDoA)	<2.1		2.1	0.58	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorotridecanoic acid (PFTriA)	<2.1		2.1	1.4	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorotetradecanoic acid (PFTeA)	<2.1		2.1	0.77	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.1		2.1	0.94	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.1		2.1	0.99	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorobutanesulfonic acid (PFBS)	7.4	B	2.1	0.21	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluoropentanesulfonic acid (PFPeS)	11		2.1	0.32	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorohexanesulfonic acid (PFHxS)	240		2.1	0.60	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluoroheptanesulfonic Acid (PFHpS)	6.0		2.1	0.20	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorononanesulfonic acid (PFNS)	<2.1		2.1	0.39	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorodecanesulfonic acid (PFDS)	<2.1		2.1	0.34	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorododecanesulfonic acid (PFDoS)	<2.1		2.1	1.0	ng/L		11/13/20 04:08	11/14/20 03:41	1
Perfluorooctanesulfonamide (FOSA)	210		2.1	1.0	ng/L		11/13/20 04:08	11/14/20 03:41	1
NEtFOSA	<2.1		2.1	0.91	ng/L		11/13/20 04:08	11/14/20 03:41	1
NMeFOSA	<2.1		2.1	0.45	ng/L		11/13/20 04:08	11/14/20 03:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.3		5.3	1.3	ng/L		11/13/20 04:08	11/14/20 03:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18		5.3	1.4	ng/L		11/13/20 04:08	11/14/20 03:41	1
NMeFOSE	<4.2		4.2	1.5	ng/L		11/13/20 04:08	11/14/20 03:41	1
NEtFOSE	<2.1		2.1	0.89	ng/L		11/13/20 04:08	11/14/20 03:41	1
4:2 FTS	120		2.1	0.25	ng/L		11/13/20 04:08	11/14/20 03:41	1
10:2 FTS	9.4		2.1	0.70	ng/L		11/13/20 04:08	11/14/20 03:41	1
DONA	<2.1		2.1	0.42	ng/L		11/13/20 04:08	11/14/20 03:41	1
HFPO-DA (GenX)	<4.2		4.2	1.6	ng/L		11/13/20 04:08	11/14/20 03:41	1
F-53B Major	<2.1		2.1	0.25	ng/L		11/13/20 04:08	11/14/20 03:41	1
F-53B Minor	<2.1		2.1	0.34	ng/L		11/13/20 04:08	11/14/20 03:41	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C5 PFNA	117		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C2 PFDA	117		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C2 PFUnA	110		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C2 PFDoA	88		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C2 PFTeDA	76		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C2 PFHxDA	92		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C3 PFBS	93		25 - 150				11/13/20 04:08	11/14/20 03:41	1
18O2 PFHxS	110		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C4 PFOS	116		25 - 150				11/13/20 04:08	11/14/20 03:41	1
13C8 FOSA	104		25 - 150				11/13/20 04:08	11/14/20 03:41	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M07 (11052020)

Lab Sample ID: 500-190768-7

Date Collected: 11/05/20 14:20

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	113		25 - 150	11/13/20 04:08	11/14/20 03:41	1
d5-NEtFOSAA	119		25 - 150	11/13/20 04:08	11/14/20 03:41	1
d-N-MeFOSA-M	112		20 - 150	11/13/20 04:08	11/14/20 03:41	1
d-N-EtFOSA-M	84		20 - 150	11/13/20 04:08	11/14/20 03:41	1
d7-N-MeFOSE-M	92		10 - 120	11/13/20 04:08	11/14/20 03:41	1
d9-N-EtFOSE-M	81		10 - 120	11/13/20 04:08	11/14/20 03:41	1
M2-4:2 FTS	104		25 - 150	11/13/20 04:08	11/14/20 03:41	1
13C3 HFPO-DA	97		25 - 150	11/13/20 04:08	11/14/20 03:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	1200		110	26	ng/L		11/13/20 04:08	11/14/20 21:25	50
Perfluorohexanoic acid (PFHxA)	1100		110	30	ng/L		11/13/20 04:08	11/14/20 21:25	50
Perfluoroheptanoic acid (PFHpA)	550		110	13	ng/L		11/13/20 04:08	11/14/20 21:25	50
Perfluorooctanoic acid (PFOA)	5200		110	45	ng/L		11/13/20 04:08	11/14/20 21:25	50
Perfluorooctanesulfonic acid (PFOS)	470	B	110	28	ng/L		11/13/20 04:08	11/14/20 21:25	50
6:2 FTS	4700		260	130	ng/L		11/13/20 04:08	11/14/20 21:25	50
8:2 FTS	850		110	24	ng/L		11/13/20 04:08	11/14/20 21:25	50

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	76		25 - 150	11/13/20 04:08	11/14/20 21:25	50
13C2 PFHxA	68		25 - 150	11/13/20 04:08	11/14/20 21:25	50
13C4 PFHpA	73		25 - 150	11/13/20 04:08	11/14/20 21:25	50
13C4 PFOA	71		25 - 150	11/13/20 04:08	11/14/20 21:25	50
13C4 PFOS	77		25 - 150	11/13/20 04:08	11/14/20 21:25	50
M2-6:2 FTS	109		25 - 150	11/13/20 04:08	11/14/20 21:25	50
M2-8:2 FTS	86		25 - 150	11/13/20 04:08	11/14/20 21:25	50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	110		14	5.5	mg/L			11/12/20 11:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M08 (11052020)

Lab Sample ID: 500-190768-8

Date Collected: 11/05/20 15:00

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	33		5.6	2.7	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluoropentanoic acid (PFPeA)	110		2.3	0.55	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorohexanoic acid (PFHxA)	75		2.3	0.65	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluoroheptanoic acid (PFHpA)	41		2.3	0.28	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorooctanoic acid (PFOA)	130		2.3	0.96	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorononanoic acid (PFNA)	6.5		2.3	0.30	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorodecanoic acid (PFDA)	1.3	J I	2.3	0.35	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluoroundecanoic acid (PFUnA)	<2.3		2.3	1.2	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorododecanoic acid (PFDoA)	<2.3		2.3	0.62	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorotridecanoic acid (PFTriA)	<2.3		2.3	1.5	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorotetradecanoic acid (PFTeA)	1.0	J	2.3	0.82	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.3		2.3	1.0	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.3		2.3	1.1	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorobutanesulfonic acid (PFBS)	1.4	J B	2.3	0.23	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluoropentanesulfonic acid (PFPeS)	0.88	J	2.3	0.34	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorohexanesulfonic acid (PFHxS)	12		2.3	0.64	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.3		2.3	0.21	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorooctanesulfonic acid (PFOS)	22	I B	2.3	0.61	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorononanesulfonic acid (PFNS)	<2.3		2.3	0.42	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorodecanesulfonic acid (PFDS)	<2.3		2.3	0.36	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorododecanesulfonic acid (PFDoS)	<2.3		2.3	1.1	ng/L		11/13/20 04:08	11/14/20 04:09	1
Perfluorooctanesulfonamide (FOSA)	2.3		2.3	1.1	ng/L		11/13/20 04:08	11/14/20 04:09	1
NEtFOSA	<2.3		2.3	0.98	ng/L		11/13/20 04:08	11/14/20 04:09	1
NMeFOSA	<2.3		2.3	0.48	ng/L		11/13/20 04:08	11/14/20 04:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.6		5.6	1.4	ng/L		11/13/20 04:08	11/14/20 04:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.6		5.6	1.5	ng/L		11/13/20 04:08	11/14/20 04:09	1
NMeFOSE	<4.5		4.5	1.6	ng/L		11/13/20 04:08	11/14/20 04:09	1
NEtFOSE	<2.3		2.3	0.96	ng/L		11/13/20 04:08	11/14/20 04:09	1
4:2 FTS	3.3		2.3	0.27	ng/L		11/13/20 04:08	11/14/20 04:09	1
6:2 FTS	280		5.6	2.8	ng/L		11/13/20 04:08	11/14/20 04:09	1
8:2 FTS	39		2.3	0.52	ng/L		11/13/20 04:08	11/14/20 04:09	1
10:2 FTS	<2.3		2.3	0.75	ng/L		11/13/20 04:08	11/14/20 04:09	1
DONA	<2.3		2.3	0.45	ng/L		11/13/20 04:08	11/14/20 04:09	1
HFPO-DA (GenX)	<4.5		4.5	1.7	ng/L		11/13/20 04:08	11/14/20 04:09	1
F-53B Major	<2.3		2.3	0.27	ng/L		11/13/20 04:08	11/14/20 04:09	1
F-53B Minor	<2.3		2.3	0.36	ng/L		11/13/20 04:08	11/14/20 04:09	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	41		25 - 150				11/13/20 04:08	11/14/20 04:09	1
13C5 PFPeA	34		25 - 150				11/13/20 04:08	11/14/20 04:09	1
13C2 PFHxA	52		25 - 150				11/13/20 04:08	11/14/20 04:09	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M08 (11052020)

Lab Sample ID: 500-190768-8

Date Collected: 11/05/20 15:00

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFHpA	54		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C4 PFOA	57		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C5 PFNA	54		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C2 PFDA	56		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C2 PFUnA	62		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C2 PFDoA	46		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C2 PFTeDA	36		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C2 PFHxDA	36		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C3 PFBS	42		25 - 150	11/13/20 04:08	11/14/20 04:09	1
18O2 PFHxS	55		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C4 PFOS	54		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C8 FOSA	46		25 - 150	11/13/20 04:08	11/14/20 04:09	1
d3-NMeFOSAA	64		25 - 150	11/13/20 04:08	11/14/20 04:09	1
d5-NEtFOSAA	74		25 - 150	11/13/20 04:08	11/14/20 04:09	1
d-N-MeFOSA-M	57		20 - 150	11/13/20 04:08	11/14/20 04:09	1
d-N-EtFOSA-M	43		20 - 150	11/13/20 04:08	11/14/20 04:09	1
d7-N-MeFOSE-M	39		10 - 120	11/13/20 04:08	11/14/20 04:09	1
d9-N-EtFOSE-M	28		10 - 120	11/13/20 04:08	11/14/20 04:09	1
M2-4:2 FTS	64		25 - 150	11/13/20 04:08	11/14/20 04:09	1
M2-6:2 FTS	59		25 - 150	11/13/20 04:08	11/14/20 04:09	1
M2-8:2 FTS	87		25 - 150	11/13/20 04:08	11/14/20 04:09	1
13C3 HFPO-DA	46		25 - 150	11/13/20 04:08	11/14/20 04:09	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	250		100	39	mg/L			11/12/20 11:08	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M09 (11052020)

Lab Sample ID: 500-190768-9

Date Collected: 11/05/20 15:30

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	59		4.8	2.3	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluoropentanoic acid (PFPeA)	170		1.9	0.48	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorohexanoic acid (PFHxA)	110		1.9	0.56	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluoroheptanoic acid (PFHpA)	53		1.9	0.24	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorooctanoic acid (PFOA)	74		1.9	0.82	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorononanoic acid (PFNA)	13		1.9	0.26	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorodecanoic acid (PFDA)	13		1.9	0.30	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.1	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.3	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.71	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.86	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.91	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorobutanesulfonic acid (PFBS)	2.9	B	1.9	0.19	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluoropentanesulfonic acid (PFPeS)	0.70	J	1.9	0.29	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorohexanesulfonic acid (PFHxS)	5.2		1.9	0.55	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorooctanesulfonic acid (PFOS)	42	B	1.9	0.52	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.36	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.94	ng/L		11/13/20 04:08	11/14/20 04:19	1
Perfluorooctanesulfonamide (FOSA)	16		1.9	0.95	ng/L		11/13/20 04:08	11/14/20 04:19	1
NEtFOSA	<1.9		1.9	0.84	ng/L		11/13/20 04:08	11/14/20 04:19	1
NMeFOSA	<1.9		1.9	0.42	ng/L		11/13/20 04:08	11/14/20 04:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.2	ng/L		11/13/20 04:08	11/14/20 04:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.3	ng/L		11/13/20 04:08	11/14/20 04:19	1
NMeFOSE	<3.9		3.9	1.4	ng/L		11/13/20 04:08	11/14/20 04:19	1
NEtFOSE	<1.9		1.9	0.82	ng/L		11/13/20 04:08	11/14/20 04:19	1
4:2 FTS	0.60	J	1.9	0.23	ng/L		11/13/20 04:08	11/14/20 04:19	1
6:2 FTS	200		4.8	2.4	ng/L		11/13/20 04:08	11/14/20 04:19	1
8:2 FTS	330		1.9	0.45	ng/L		11/13/20 04:08	11/14/20 04:19	1
10:2 FTS	<1.9		1.9	0.65	ng/L		11/13/20 04:08	11/14/20 04:19	1
DONA	<1.9		1.9	0.39	ng/L		11/13/20 04:08	11/14/20 04:19	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		11/13/20 04:08	11/14/20 04:19	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:08	11/14/20 04:19	1
F-53B Minor	<1.9		1.9	0.31	ng/L		11/13/20 04:08	11/14/20 04:19	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	57		25 - 150				11/13/20 04:08	11/14/20 04:19	1
13C5 PFPeA	49		25 - 150				11/13/20 04:08	11/14/20 04:19	1
13C2 PFHxA	67		25 - 150				11/13/20 04:08	11/14/20 04:19	1
13C4 PFHpA	66		25 - 150				11/13/20 04:08	11/14/20 04:19	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M09 (11052020)

Lab Sample ID: 500-190768-9

Date Collected: 11/05/20 15:30

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOA	72		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C5 PFNA	72		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C2 PFDA	75		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C2 PFUnA	70		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C2 PFDoA	50		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C2 PFTeDA	51		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C2 PFHxDA	61		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C3 PFBS	58		25 - 150	11/13/20 04:08	11/14/20 04:19	1
18O2 PFHxS	69		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C4 PFOS	72		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C8 FOSA	65		25 - 150	11/13/20 04:08	11/14/20 04:19	1
d3-NMeFOSAA	68		25 - 150	11/13/20 04:08	11/14/20 04:19	1
d5-NEtFOSAA	70		25 - 150	11/13/20 04:08	11/14/20 04:19	1
d-N-MeFOSA-M	80		20 - 150	11/13/20 04:08	11/14/20 04:19	1
d-N-EtFOSA-M	60		20 - 150	11/13/20 04:08	11/14/20 04:19	1
d7-N-MeFOSE-M	30		10 - 120	11/13/20 04:08	11/14/20 04:19	1
d9-N-EtFOSE-M	27		10 - 120	11/13/20 04:08	11/14/20 04:19	1
M2-4:2 FTS	73		25 - 150	11/13/20 04:08	11/14/20 04:19	1
M2-6:2 FTS	72		25 - 150	11/13/20 04:08	11/14/20 04:19	1
M2-8:2 FTS	84		25 - 150	11/13/20 04:08	11/14/20 04:19	1
13C3 HFPO-DA	58		25 - 150	11/13/20 04:08	11/14/20 04:19	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	200		17	6.4	mg/L			11/12/20 11:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M10 (11052020)

Lab Sample ID: 500-190768-10

Date Collected: 11/05/20 15:50

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	28		4.6	2.2	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluoropentanoic acid (PFPeA)	63		1.8	0.45	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorohexanoic acid (PFHxA)	67		1.8	0.54	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluoroheptanoic acid (PFHpA)	47		1.8	0.23	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorooctanoic acid (PFOA)	240		1.8	0.79	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorononanoic acid (PFNA)	7.4		1.8	0.25	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorodecanoic acid (PFDA)	0.68	J	1.8	0.29	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.51	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.82	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.87	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorobutanesulfonic acid (PFBS)	2.1	B	1.8	0.18	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluoropentanesulfonic acid (PFPeS)	1.6	J	1.8	0.28	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorohexanesulfonic acid (PFHxS)	97		1.8	0.53	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.3	J	1.8	0.18	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorooctanesulfonic acid (PFOS)	26	B	1.8	0.50	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.30	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.90	ng/L		11/13/20 04:08	11/14/20 04:28	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.91	ng/L		11/13/20 04:08	11/14/20 04:28	1
NEtFOSA	<1.8		1.8	0.80	ng/L		11/13/20 04:08	11/14/20 04:28	1
NMeFOSA	<1.8		1.8	0.40	ng/L		11/13/20 04:08	11/14/20 04:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		11/13/20 04:08	11/14/20 04:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		11/13/20 04:08	11/14/20 04:28	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:08	11/14/20 04:28	1
NEtFOSE	<1.8		1.8	0.79	ng/L		11/13/20 04:08	11/14/20 04:28	1
4:2 FTS	0.48	J	1.8	0.22	ng/L		11/13/20 04:08	11/14/20 04:28	1
6:2 FTS	54		4.6	2.3	ng/L		11/13/20 04:08	11/14/20 04:28	1
8:2 FTS	18		1.8	0.43	ng/L		11/13/20 04:08	11/14/20 04:28	1
10:2 FTS	<1.8		1.8	0.62	ng/L		11/13/20 04:08	11/14/20 04:28	1
DONA	<1.8		1.8	0.37	ng/L		11/13/20 04:08	11/14/20 04:28	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:08	11/14/20 04:28	1
F-53B Major	<1.8		1.8	0.22	ng/L		11/13/20 04:08	11/14/20 04:28	1
F-53B Minor	<1.8		1.8	0.30	ng/L		11/13/20 04:08	11/14/20 04:28	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	81		25 - 150				11/13/20 04:08	11/14/20 04:28	1
13C5 PFPeA	68		25 - 150				11/13/20 04:08	11/14/20 04:28	1
13C2 PFHxA	94		25 - 150				11/13/20 04:08	11/14/20 04:28	1
13C4 PFHpA	93		25 - 150				11/13/20 04:08	11/14/20 04:28	1
13C4 PFOA	97		25 - 150				11/13/20 04:08	11/14/20 04:28	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M10 (11052020)

Lab Sample ID: 500-190768-10

Date Collected: 11/05/20 15:50

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFNA	98		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C2 PFDA	105		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C2 PFUnA	92		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C2 PFDoA	70		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C2 PFTeDA	75		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C2 PFHxDA	82		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C3 PFBS	78		25 - 150	11/13/20 04:08	11/14/20 04:28	1
18O2 PFHxS	96		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C4 PFOS	97		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C8 FOSA	85		25 - 150	11/13/20 04:08	11/14/20 04:28	1
d3-NMeFOSAA	111		25 - 150	11/13/20 04:08	11/14/20 04:28	1
d5-NEtFOSAA	119		25 - 150	11/13/20 04:08	11/14/20 04:28	1
d-N-MeFOSA-M	84		20 - 150	11/13/20 04:08	11/14/20 04:28	1
d-N-EtFOSA-M	59		20 - 150	11/13/20 04:08	11/14/20 04:28	1
d7-N-MeFOSE-M	55		10 - 120	11/13/20 04:08	11/14/20 04:28	1
d9-N-EtFOSE-M	44		10 - 120	11/13/20 04:08	11/14/20 04:28	1
M2-4:2 FTS	101		25 - 150	11/13/20 04:08	11/14/20 04:28	1
M2-6:2 FTS	87		25 - 150	11/13/20 04:08	11/14/20 04:28	1
M2-8:2 FTS	133		25 - 150	11/13/20 04:08	11/14/20 04:28	1
13C3 HFPO-DA	83		25 - 150	11/13/20 04:08	11/14/20 04:28	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	230		17	6.4	mg/L			11/12/20 11:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: DUP-02 (11052020)

Lab Sample ID: 500-190768-11

Date Collected: 11/05/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	11		5.2	2.5	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluoropentanoic acid (PFPeA)	15		2.1	0.51	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorohexanoic acid (PFHxA)	11		2.1	0.61	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluoroheptanoic acid (PFHpA)	8.9		2.1	0.26	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorooctanoic acid (PFOA)	15		2.1	0.89	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorononanoic acid (PFNA)	1.0	J	2.1	0.28	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorodecanoic acid (PFDA)	0.47	J	2.1	0.32	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluoroundecanoic acid (PFUnA)	<2.1		2.1	1.2	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorododecanoic acid (PFDoA)	<2.1		2.1	0.58	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorotridecanoic acid (PFTriA)	<2.1		2.1	1.4	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorotetradecanoic acid (PFTeA)	<2.1		2.1	0.76	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.1		2.1	0.93	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.1		2.1	0.98	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorobutanesulfonic acid (PFBS)	1.1	J B	2.1	0.21	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluoropentanesulfonic acid (PFPeS)	0.40	J	2.1	0.31	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorohexanesulfonic acid (PFHxS)	1.8	J	2.1	0.60	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.1		2.1	0.20	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorooctanesulfonic acid (PFOS)	5.5	B	2.1	0.56	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorononanesulfonic acid (PFNS)	<2.1		2.1	0.39	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorodecanesulfonic acid (PFDS)	<2.1		2.1	0.33	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorododecanesulfonic acid (PFDoS)	<2.1		2.1	1.0	ng/L		11/13/20 04:08	11/14/20 04:37	1
Perfluorooctanesulfonamide (FOSA)	<2.1		2.1	1.0	ng/L		11/13/20 04:08	11/14/20 04:37	1
NEtFOSA	<2.1		2.1	0.91	ng/L		11/13/20 04:08	11/14/20 04:37	1
NMeFOSA	<2.1		2.1	0.45	ng/L		11/13/20 04:08	11/14/20 04:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.2		5.2	1.3	ng/L		11/13/20 04:08	11/14/20 04:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.2		5.2	1.4	ng/L		11/13/20 04:08	11/14/20 04:37	1
NMeFOSE	<4.2		4.2	1.5	ng/L		11/13/20 04:08	11/14/20 04:37	1
NEtFOSE	<2.1		2.1	0.89	ng/L		11/13/20 04:08	11/14/20 04:37	1
4:2 FTS	<2.1		2.1	0.25	ng/L		11/13/20 04:08	11/14/20 04:37	1
6:2 FTS	6.6		5.2	2.6	ng/L		11/13/20 04:08	11/14/20 04:37	1
8:2 FTS	7.3		2.1	0.48	ng/L		11/13/20 04:08	11/14/20 04:37	1
10:2 FTS	<2.1		2.1	0.70	ng/L		11/13/20 04:08	11/14/20 04:37	1
DONA	<2.1		2.1	0.42	ng/L		11/13/20 04:08	11/14/20 04:37	1
HFPO-DA (GenX)	<4.2		4.2	1.6	ng/L		11/13/20 04:08	11/14/20 04:37	1
F-53B Major	<2.1		2.1	0.25	ng/L		11/13/20 04:08	11/14/20 04:37	1
F-53B Minor	<2.1		2.1	0.33	ng/L		11/13/20 04:08	11/14/20 04:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	77		25 - 150				11/13/20 04:08	11/14/20 04:37	1
13C5 PFPeA	60		25 - 150				11/13/20 04:08	11/14/20 04:37	1
13C2 PFHxA	91		25 - 150				11/13/20 04:08	11/14/20 04:37	1
13C4 PFHpA	90		25 - 150				11/13/20 04:08	11/14/20 04:37	1
13C4 PFOA	100		25 - 150				11/13/20 04:08	11/14/20 04:37	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: DUP-02 (11052020)

Lab Sample ID: 500-190768-11

Date Collected: 11/05/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFNA	102		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C2 PFDA	103		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C2 PFUnA	109		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C2 PFDoA	83		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C2 PFTeDA	81		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C2 PFHxDA	88		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C3 PFBS	75		25 - 150	11/13/20 04:08	11/14/20 04:37	1
18O2 PFHxS	90		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C4 PFOS	97		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C8 FOSA	98		25 - 150	11/13/20 04:08	11/14/20 04:37	1
d3-NMeFOSAA	121		25 - 150	11/13/20 04:08	11/14/20 04:37	1
d5-NEtFOSAA	116		25 - 150	11/13/20 04:08	11/14/20 04:37	1
d-N-MeFOSA-M	77		20 - 150	11/13/20 04:08	11/14/20 04:37	1
d-N-EtFOSA-M	57		20 - 150	11/13/20 04:08	11/14/20 04:37	1
d7-N-MeFOSE-M	49		10 - 120	11/13/20 04:08	11/14/20 04:37	1
d9-N-EtFOSE-M	45		10 - 120	11/13/20 04:08	11/14/20 04:37	1
M2-4:2 FTS	88		25 - 150	11/13/20 04:08	11/14/20 04:37	1
M2-6:2 FTS	81		25 - 150	11/13/20 04:08	11/14/20 04:37	1
M2-8:2 FTS	118		25 - 150	11/13/20 04:08	11/14/20 04:37	1
13C3 HFPO-DA	80		25 - 150	11/13/20 04:08	11/14/20 04:37	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	170		14	5.5	mg/L			11/12/20 11:11	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFI	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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-431316/1-A
Matrix: Water
Analysis Batch: 431629

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431316

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorobutanesulfonic acid (PFBS)	0.205	J	2.0	0.20	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorooctanesulfonic acid (PFOS)	0.968	J	2.0	0.54	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		11/13/20 04:08	11/14/20 02:16	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		11/13/20 04:08	11/14/20 02:16	1
NEtFOSA	<2.0		2.0	0.87	ng/L		11/13/20 04:08	11/14/20 02:16	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/13/20 04:08	11/14/20 02:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		11/13/20 04:08	11/14/20 02:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		11/13/20 04:08	11/14/20 02:16	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/13/20 04:08	11/14/20 02:16	1
NEtFOSE	<2.0		2.0	0.85	ng/L		11/13/20 04:08	11/14/20 02:16	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/13/20 04:08	11/14/20 02:16	1
6:2 FTS	<5.0		5.0	2.5	ng/L		11/13/20 04:08	11/14/20 02:16	1
8:2 FTS	<2.0		2.0	0.46	ng/L		11/13/20 04:08	11/14/20 02:16	1
10:2 FTS	<2.0		2.0	0.67	ng/L		11/13/20 04:08	11/14/20 02:16	1
DONA	<2.0		2.0	0.40	ng/L		11/13/20 04:08	11/14/20 02:16	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/13/20 04:08	11/14/20 02:16	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/13/20 04:08	11/14/20 02:16	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/13/20 04:08	11/14/20 02:16	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	104		25 - 150				11/13/20 04:08	11/14/20 02:16	1
13C5 PFPeA	103		25 - 150				11/13/20 04:08	11/14/20 02:16	1
13C2 PFHxA	100		25 - 150				11/13/20 04:08	11/14/20 02:16	1
13C4 PFHpA	100		25 - 150				11/13/20 04:08	11/14/20 02:16	1
13C4 PFOA	104		25 - 150				11/13/20 04:08	11/14/20 02:16	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

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

Lab Sample ID: MB 320-431316/1-A
Matrix: Water
Analysis Batch: 431629

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431316

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFNA	96		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C2 PFDA	92		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C2 PFUnA	92		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C2 PFDoA	105		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C2 PFTeDA	91		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C2 PFHxDA	97		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C3 PFBS	104		25 - 150	11/13/20 04:08	11/14/20 02:16	1
18O2 PFHxS	110		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C4 PFOS	104		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C8 FOSA	105		25 - 150	11/13/20 04:08	11/14/20 02:16	1
d3-NMeFOSAA	108		25 - 150	11/13/20 04:08	11/14/20 02:16	1
d5-NEtFOSAA	113		25 - 150	11/13/20 04:08	11/14/20 02:16	1
d-N-MeFOSA-M	98		20 - 150	11/13/20 04:08	11/14/20 02:16	1
d-N-EtFOSA-M	100		20 - 150	11/13/20 04:08	11/14/20 02:16	1
d7-N-MeFOSE-M	87		10 - 120	11/13/20 04:08	11/14/20 02:16	1
d9-N-EtFOSE-M	94		10 - 120	11/13/20 04:08	11/14/20 02:16	1
M2-4:2 FTS	53		25 - 150	11/13/20 04:08	11/14/20 02:16	1
M2-6:2 FTS	64		25 - 150	11/13/20 04:08	11/14/20 02:16	1
M2-8:2 FTS	66		25 - 150	11/13/20 04:08	11/14/20 02:16	1
13C3 HFPO-DA	96		25 - 150	11/13/20 04:08	11/14/20 02:16	1

Lab Sample ID: LCS 320-431316/2-A
Matrix: Water
Analysis Batch: 431629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431316

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	40.3		ng/L		101	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	43.8		ng/L		109	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	41.6		ng/L		104	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	37.4		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	40.0	43.8		ng/L		109	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	43.6		ng/L		109	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	38.3		ng/L		96	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	48.5		ng/L		121	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	44.2		ng/L		110	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	46.8		ng/L		117	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	47.4		ng/L		118	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	45.8		ng/L		115	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	38.5		ng/L		109	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	41.5		ng/L		111	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.3		ng/L		103	59 - 119

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

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

Lab Sample ID: LCS 320-431316/2-A
Matrix: Water
Analysis Batch: 431629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431316

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.8		ng/L		105	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	41.3		ng/L		111	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	39.4		ng/L		103	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	39.5		ng/L		102	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	41.8		ng/L		108	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	43.4		ng/L		108	73 - 133
NMeFOSA	40.0	40.4		ng/L		101	67 - 154
N-methylperfluorooctanesulfonamide doacetic acid (NMeFOSAA)	40.0	40.9		ng/L		102	76 - 136
N-ethylperfluorooctanesulfonamide doacetic acid (NEtFOSAA)	40.0	39.5		ng/L		99	76 - 136
NMeFOSE	40.0	40.1		ng/L		100	70 - 130
NEtFOSE	40.0	42.8		ng/L		107	71 - 131
4:2 FTS	37.4	42.2		ng/L		113	79 - 139
6:2 FTS	37.9	34.2		ng/L		90	59 - 175
8:2 FTS	38.3	40.1		ng/L		105	75 - 135
10:2 FTS	38.6	42.4		ng/L		110	64 - 142
DONA	37.7	43.8		ng/L		116	79 - 139
HFPO-DA (GenX)	40.0	40.6		ng/L		102	51 - 173
F-53B Major	37.3	40.3		ng/L		108	75 - 135
F-53B Minor	37.7	40.6		ng/L		108	54 - 114

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	98		25 - 150
13C5 PFPeA	97		25 - 150
13C2 PFHxA	90		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	100		25 - 150
13C5 PFNA	87		25 - 150
13C2 PFDA	89		25 - 150
13C2 PFUnA	90		25 - 150
13C2 PFDoA	82		25 - 150
13C2 PFTeDA	79		25 - 150
13C2 PFHxDA	91		25 - 150
13C3 PFBS	98		25 - 150
18O2 PFHxS	99		25 - 150
13C4 PFOS	99		25 - 150
13C8 FOSA	99		25 - 150
d3-NMeFOSAA	94		25 - 150
d5-NEtFOSAA	97		25 - 150
d-N-MeFOSA-M	97		20 - 150
d-N-EtFOSA-M	97		20 - 150
d7-N-MeFOSE-M	77		10 - 120
d9-N-EtFOSE-M	76		10 - 120
M2-4:2 FTS	49		25 - 150

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

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

Lab Sample ID: LCS 320-431316/2-A
Matrix: Water
Analysis Batch: 431629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431316

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
M2-6:2 FTS	56		25 - 150
M2-8:2 FTS	60		25 - 150
13C3 HFPO-DA	92		25 - 150

Lab Sample ID: LCSD 320-431316/3-A
Matrix: Water
Analysis Batch: 431629

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 431316

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	%Rec. RPD	
									Limit	Limit
Perfluorobutanoic acid (PFBA)	40.0	44.6		ng/L		112	76 - 136	1		30
Perfluoropentanoic acid (PFPeA)	40.0	40.0		ng/L		100	71 - 131	1		30
Perfluorohexanoic acid (PFHxA)	40.0	42.8		ng/L		107	73 - 133	2		30
Perfluoroheptanoic acid (PFHpA)	40.0	44.2		ng/L		110	72 - 132	6		30
Perfluorooctanoic acid (PFOA)	40.0	40.2		ng/L		101	70 - 130	7		30
Perfluorononanoic acid (PFNA)	40.0	45.7		ng/L		114	75 - 135	4		30
Perfluorodecanoic acid (PFDA)	40.0	49.0		ng/L		122	76 - 136	12		30
Perfluoroundecanoic acid (PFUnA)	40.0	42.5		ng/L		106	68 - 128	10		30
Perfluorododecanoic acid (PFDoA)	40.0	41.8		ng/L		105	71 - 131	15		30
Perfluorotridecanoic acid (PFTriA)	40.0	44.0		ng/L		110	71 - 131	0		30
Perfluorotetradecanoic acid (PFTeA)	40.0	50.6		ng/L		127	70 - 130	8		30
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.7		ng/L		102	76 - 136	15		30
Perfluoro-n-octadecanoic acid (PFODA)	40.0	48.2		ng/L		121	58 - 145	5		30
Perfluorobutanesulfonic acid (PFBS)	35.4	37.5		ng/L		106	67 - 127	3		30
Perfluoropentanesulfonic acid (PFPeS)	37.5	42.2		ng/L		112	66 - 126	1		30
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.9		ng/L		104	59 - 119	2		30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	42.2		ng/L		111	76 - 136	6		30
Perfluorooctanesulfonic acid (PFOS)	37.1	42.1		ng/L		113	70 - 130	2		30
Perfluorononanesulfonic acid (PFNS)	38.4	43.8		ng/L		114	75 - 135	11		30
Perfluorodecanesulfonic acid (PFDS)	38.6	41.3		ng/L		107	71 - 131	5		30
Perfluorododecanesulfonic acid (PFDoS)	38.7	44.0		ng/L		114	67 - 127	5		30
Perfluorooctanesulfonamide (FOSA)	40.0	45.2		ng/L		113	73 - 133	4		30
NMeFOSA	40.0	40.7		ng/L		102	67 - 154	1		30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	41.0		ng/L		102	76 - 136	0		30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.5		ng/L		99	76 - 136	0		30
NMeFOSE	40.0	38.3		ng/L		96	70 - 130	4		30
NEtFOSE	40.0	40.4		ng/L		101	71 - 131	6		30

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

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

Lab Sample ID: LCSD 320-431316/3-A
Matrix: Water
Analysis Batch: 431629

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 431316

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4:2 FTS	37.4	41.0		ng/L		110	79 - 139	3	30
6:2 FTS	37.9	37.2		ng/L		98	59 - 175	8	30
8:2 FTS	38.3	36.9		ng/L		96	75 - 135	8	30
10:2 FTS	38.6	42.4		ng/L		110	64 - 142	0	30
DONA	37.7	45.1		ng/L		120	79 - 139	3	30
HFPO-DA (GenX)	40.0	41.5		ng/L		104	51 - 173	2	30
F-53B Major	37.3	40.2		ng/L		108	75 - 135	0	30
F-53B Minor	37.7	42.8		ng/L		114	54 - 114	5	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C4 PFBA	97		25 - 150
13C5 PFPeA	99		25 - 150
13C2 PFHxA	94		25 - 150
13C4 PFHpA	94		25 - 150
13C4 PFOA	96		25 - 150
13C5 PFNA	87		25 - 150
13C2 PFDA	83		25 - 150
13C2 PFUnA	91		25 - 150
13C2 PFDoA	85		25 - 150
13C2 PFTeDA	80		25 - 150
13C2 PFHxDA	96		25 - 150
13C3 PFBS	100		25 - 150
18O2 PFHxS	99		25 - 150
13C4 PFOS	98		25 - 150
13C8 FOSA	99		25 - 150
d3-NMeFOSAA	96		25 - 150
d5-NEtFOSAA	101		25 - 150
d-N-MeFOSA-M	100		20 - 150
d-N-EtFOSA-M	95		20 - 150
d7-N-MeFOSE-M	87		10 - 120
d9-N-EtFOSE-M	84		10 - 120
M2-4:2 FTS	51		25 - 150
M2-6:2 FTS	55		25 - 150
M2-8:2 FTS	63		25 - 150
13C3 HFPO-DA	94		25 - 150

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 500-571693/2-A
Matrix: Water
Analysis Batch: 571916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 571693

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.960		mg/L		96	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-571692/1-A
Matrix: Water
Analysis Batch: 571916

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 571692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.20		0.20	0.082	mg/L		11/12/20 07:34	11/12/20 21:08	1

Lab Sample ID: LCS 500-571692/2-A
Matrix: Water
Analysis Batch: 571916

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 571692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	1.05		mg/L		105	80 - 120

Lab Sample ID: MB 500-571221/1-F
Matrix: Water
Analysis Batch: 571916

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 571693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.20		0.20	0.082	mg/L		11/12/20 07:36	11/12/20 20:58	1

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-571809/32
Matrix: Water
Analysis Batch: 571809

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.47	mg/L			11/11/20 20:20	1

Lab Sample ID: LCS 500-571809/33
Matrix: Water
Analysis Batch: 571809

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.0		mg/L		100	80 - 120

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 500-572615/1-A
Matrix: Water
Analysis Batch: 572802

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	<1.0		1.0	0.47	mg/L			11/17/20 17:46	1

Lab Sample ID: LCS 500-572615/2-A
Matrix: Water
Analysis Batch: 572802

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon - Duplicate	10.0	10.8		mg/L		108	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Method: 9060A - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: LCSD 500-572615/3-A
 Matrix: Water
 Analysis Batch: 572802

Client Sample ID: Lab Control Sample Dup
 Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon - Duplicate	10.0	11.0		mg/L		110	80 - 120	3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-572284/28
 Matrix: Water
 Analysis Batch: 572284

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<5.0		5.0	3.7	mg/L			11/14/20 15:17	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 15:17	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 15:17	1

Lab Sample ID: LCS 500-572284/29
 Matrix: Water
 Analysis Batch: 572284

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	98.6		mg/L		99	90 - 110

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-571771/1
 Matrix: Water
 Analysis Batch: 571771

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			11/12/20 10:50	1

Lab Sample ID: LCS 500-571771/2
 Matrix: Water
 Analysis Batch: 571771

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	191		mg/L		96	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M01 (11052020)
Date Collected: 11/05/20 12:20
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190768-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 02:45	RS1	TAL SAC
Dissolved	Filtration	FILTRATION			571221	11/10/20 08:06	LMN	TAL CHI
Dissolved	Prep	3010A			571693	11/12/20 07:36	LMN	TAL CHI
Dissolved	Analysis	6010C		1	571916	11/12/20 21:02	JEF	TAL CHI
Total Recoverable	Prep	3005A			571692	11/12/20 07:34	LMN	TAL CHI
Total Recoverable	Analysis	6010C		1	571916	11/12/20 21:18	JEF	TAL CHI
Dissolved	Analysis	9060A		1	572802	(Start) 11/17/20 00:42 (End) 11/18/20 00:49	TMS	TAL CHI
Dissolved	Filtration	FILTRATION			572615	11/17/20 13:32	JJB	TAL CHI
Total/NA	Analysis	9060A		1	571809	11/11/20 22:14	JJB	TAL CHI
Total/NA	Analysis	SM 2320B		1	572284	11/14/20 16:07	SMO	TAL CHI
Total/NA	Analysis	SM 2540D		1	571771	(Start) 11/12/20 11:01 (End) 11/12/20 11:02	SMO	TAL CHI

Client Sample ID: GW-M02 (11052020)
Date Collected: 11/05/20 12:55
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190768-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 02:54	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771	(Start) 11/12/20 11:02 (End) 11/12/20 11:03	SMO	TAL CHI

Client Sample ID: GW-M03 (11052020)
Date Collected: 11/05/20 13:10
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190768-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 03:03	RS1	TAL SAC
Total/NA	Prep	3535	DL		431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50	431909	11/14/20 21:16	S1M	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771	(Start) 11/12/20 11:03 (End) 11/12/20 11:04	SMO	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M04 (11052020)
Date Collected: 11/05/20 13:20
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190768-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 03:13	RS1	TAL SAC
Total/NA	Prep	3535	DL		431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	431909	11/14/20 20:58	S1M	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:04		
					(End)	11/12/20 11:05		

Client Sample ID: GW-M05 (11052020)
Date Collected: 11/05/20 13:55
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190768-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 03:22	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:05		
					(End)	11/12/20 11:06		

Client Sample ID: GW-M06 (11052020)
Date Collected: 11/05/20 14:05
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190768-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 03:32	RS1	TAL SAC
Total/NA	Prep	3535	DL		431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	431909	11/14/20 21:07	S1M	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:06		
					(End)	11/12/20 11:07		

Client Sample ID: GW-M07 (11052020)
Date Collected: 11/05/20 14:20
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190768-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 03:41	RS1	TAL SAC
Total/NA	Prep	3535	DL		431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50	431909	11/14/20 21:25	S1M	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:07		
					(End)	11/12/20 11:08		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

Client Sample ID: GW-M08 (11052020)

Lab Sample ID: 500-190768-8

Date Collected: 11/05/20 15:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 04:09	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:08		
					(End)	11/12/20 11:09		

Client Sample ID: GW-M09 (11052020)

Lab Sample ID: 500-190768-9

Date Collected: 11/05/20 15:30

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 04:19	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:09		
					(End)	11/12/20 11:10		

Client Sample ID: GW-M10 (11052020)

Lab Sample ID: 500-190768-10

Date Collected: 11/05/20 15:50

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 04:28	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:10		
					(End)	11/12/20 11:11		

Client Sample ID: DUP-02 (11052020)

Lab Sample ID: 500-190768-11

Date Collected: 11/05/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431316	11/13/20 04:08	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	431629	11/14/20 04:37	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	571771		SMO	TAL CHI
					(Start)	11/12/20 11:11		
					(End)	11/12/20 11:12		

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

Laboratory: Eurofins TestAmerica, Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-21

Chain of Custody Record

Client Information		Sampler AS, KK, SK		Lab PM Fredrick Sandie		Carrier Tracking No(s)		COC No 500-86744-39116.7																																					
Client Contact Elizabeth Hover		Phone:		E-Mail sandra.fredrick@eurofinset.com				Page Page # of 18																																					
Company ARCADIS U.S., Inc.		Due Date Requested:		Analysis Requested						Job # 500-190768																																			
Address: 126 North Jefferson Street Suite 400		TAT Requested (days): Standard		<table border="1"> <tr> <td>Field Filtered Sample (Yes or No)</td> <td>Perform All Tests (Yes or No)</td> <td>2640D - TSS</td> <td>PFAS_IDA - PFAS, Extended List (36 Analytes)</td> <td>9080A - TOC</td> <td>2320B - Alkalinity (Total/Bicarb/Carb)</td> <td>6010C - Total Iron</td> <td>9080A_Diss - DOC</td> <td>6010C - Dissolved Iron</td> <td>Total Number of Containers</td> </tr> </table>						Field Filtered Sample (Yes or No)	Perform All Tests (Yes or No)	2640D - TSS	PFAS_IDA - PFAS, Extended List (36 Analytes)	9080A - TOC	2320B - Alkalinity (Total/Bicarb/Carb)	6010C - Total Iron	9080A_Diss - DOC	6010C - Dissolved Iron	Total Number of Containers	Preservation Codes: <table border="0"> <tr> <td>A - HCl</td> <td>M - Hexane</td> </tr> <tr> <td>B - NaOH</td> <td>N - None</td> </tr> <tr> <td>C - Zn Acetate</td> <td>O - AsNaO2</td> </tr> <tr> <td>E - Nitric Acid</td> <td>P - Na2O4S</td> </tr> <tr> <td>E - NatHSC4</td> <td>Q - Na2SO3</td> </tr> <tr> <td>F - MeOH</td> <td>R - Na2S2O3</td> </tr> <tr> <td>G - Amchlor</td> <td>S - H2SO4</td> </tr> <tr> <td>H - Ascorbic Acid</td> <td>T - TSP Dodecahydrate</td> </tr> <tr> <td>I - Ice</td> <td>U - Acetone</td> </tr> <tr> <td>J - DI Water</td> <td>V - MCAA</td> </tr> <tr> <td>K - EDTA</td> <td>W - pH 4.5</td> </tr> <tr> <td>L - EDA</td> <td>Z - other (specify)</td> </tr> </table>		A - HCl	M - Hexane	B - NaOH	N - None	C - Zn Acetate	O - AsNaO2	E - Nitric Acid	P - Na2O4S	E - NatHSC4	Q - Na2SO3	F - MeOH	R - Na2S2O3	G - Amchlor	S - H2SO4	H - Ascorbic Acid	T - TSP Dodecahydrate	I - Ice	U - Acetone	J - DI Water	V - MCAA	K - EDTA	W - pH 4.5	L - EDA	Z - other (specify)
Field Filtered Sample (Yes or No)	Perform All Tests (Yes or No)	2640D - TSS	PFAS_IDA - PFAS, Extended List (36 Analytes)							9080A - TOC	2320B - Alkalinity (Total/Bicarb/Carb)	6010C - Total Iron	9080A_Diss - DOC	6010C - Dissolved Iron	Total Number of Containers																														
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G - Amchlor	S - H2SO4																																												
H - Ascorbic Acid	T - TSP Dodecahydrate																																												
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J - DI Water	V - MCAA																																												
K - EDTA	W - pH 4.5																																												
L - EDA	Z - other (specify)																																												
City Milwaukee		PO #: 30062361.00001		Project #: 50017363		Project Name: Marinette 30062361.00001		Site: Marinette, WI																																					
State, Zip: WI, 53202		WO #:		SSOW#:		Email: Elizabeth.Hover@arcadis.com		Phone: 500-19C768 COC																																					
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code				Special Instructions/Note																																			
GW-M01 (11052020) GW-M02 (11052020) GW-M03 (11052020) GW-M04 (11052020) GW-M05 (11052020) GW-M06 (11052020) GW-M07 (11052020) GW-M08 (11052020) GW-M09 (11052020) GW-M10 (11052020) DUP-02 (11052020)		11/5/20	1220 1255 1310 1320 1355 1405 1420 1500 1530 1550	G	Water	X	X	X	X	X	X																																		
												Duplicate																																	
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																																							
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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 <i>Amy Steffer</i>		Date/Time 11/6/20 / 1500		Company Arcadis		Received by <i>Ann Scott</i>		Date/Time 11/7/20 0955		Company ETA-ETI																																			
Relinquished by		Date/Time		Company		Received by		Date/Time		Company																																			
Relinquished by		Date/Time		Company		Received by		Date/Time		Company																																			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 22 → 26, 23 → 27, 21 → 25, 17 → 18, 23 → 27, 1, 5 → 16 0.9 → 1.0, 1.9 → 2.0, 1.1 → 1.2, 0.0 → 0.1, 1.3 → 1.4																																									

TO-99-2019-001



ORIGIN ID:RRLA (262) 202-5955
GUEST: AMY PARISH
COUNTRY INN& SUITES
2020 OLD PESHTIGO CT.
MARINETTE, WI 54143
UNITED STATES US

SHIP DATE: 06OCT20
ACTWGT: 25.00 LB
CAD: 525155/CAFE34

ORIGIN ID:RRLA (262) 202-5955
GUEST: AMY PARISH
COUNTRY INN& SUITES
2020 OLD PESHTIGO CT.
MARINETTE, WI 54143
UNITED STATES US

SHIP DATE: 06OCT20
ACTWGT: 25.00 LB
CAD: 525155/CAFE3408

TO

TESTAMERICA CHICAGO
2417 BOND STREET



500-190768 Wayb

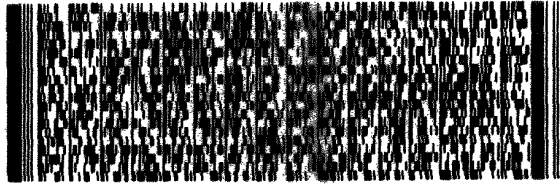
UNIVERSITY PARK IL 60484-3101

(708) 634-6200
INU:
PO:

REF:

DEPT:

RMA: 011 0001 001



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TO

TESTAMERICA CHICAGO
2417 BOND STREET

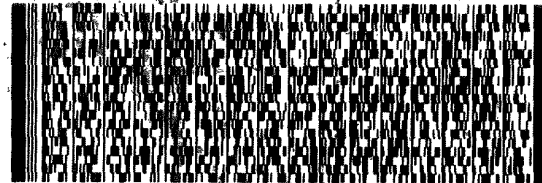
UNIVERSITY PARK IL 60484-3101

(708) 634-6200

REF:

DEPT:

RMA: 011 0001 001



FedEx
Express



FedEx

TRK# 7125 4943 3272
0221

X0 JOTA

RETURNS MON-SAT
PRIORITY OVERNIGHT

60

IL-US



FID: 832374 06Nov2020 GRBA 560G3/5108/05A2

FedEx

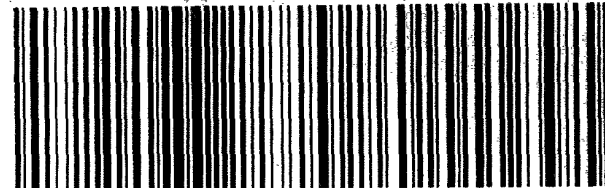
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0221

X0 JOTA

RETURNS MON-SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

60484

IL-US
ORD



FID: 832374 06Nov2020 GRBA 560G3/5108/05A2

ORIGIN ID:PHDA (330) 966-9677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
CAD: 0562071/CAFE3406

MARINETTE, WI 54143
UNITED STATES US

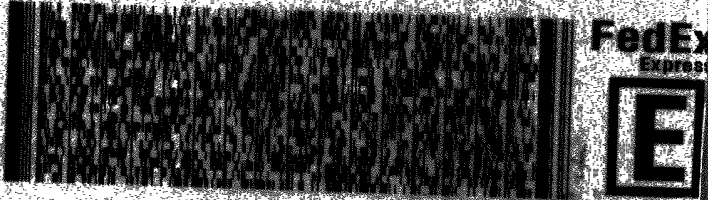
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EUROFINS TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 604843101

(708) 534-5200
REF: 8000-85568

PMA: 0111111



FedEx
TRK#
0221 9174 5385 5780

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 JOTA

60484
IL-US
ORD



FID: 832374 06Nov2020 GRBA 56063/5108/05A2

ORIGIN ID:PHDA (330) 966-9677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
CAD: 0562071/CAFE3406

MARINETTE, WI 54143
UNITED STATES US

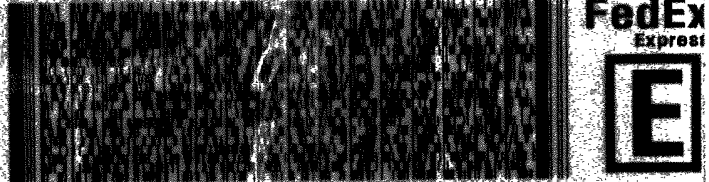
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EUROFINS TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 604843101

(708) 534-5200
REF: 8000-85568

PMA: 0111111

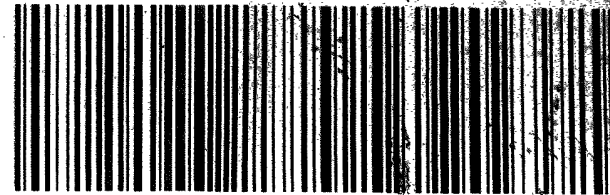


FedEx
TRK#
0221 9174 5385 5768

RETURNS MON-SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 JOTA

60484
IL-US
ORD



FID: 832374 06Nov2020 GRBA 56063/5108/05A2

ORIGIN ID: PDA (390) 966-9677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
CAD: 0582071/CAFE3406

MARINETTE, WI 54143
UNITED STATES US

TO

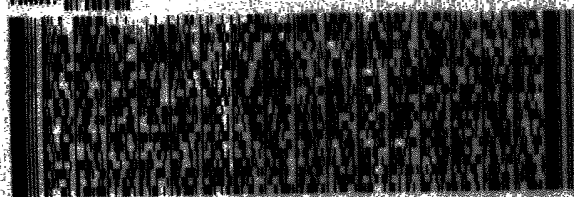
EUROFINS TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 604843101

(700) 594-5200

REF: 5500-06550

PMA: 0110100



RETURNS MON-SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0221 0174 5385 5779

X0 JOTA

67484
IL-US
ORD



FD: 832374 06Nov2020 GRBA 56DG3/51D8/05A2

ORIGIN ID: RRLA (262) 202-5955
GUEST: KAEALYN BLOTZ
COUNTRY INN & SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

MARINETTE, WI 54143
UNITED STATES US

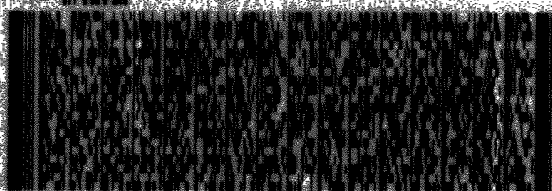
TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(700) 594-5200

PMA: 0110100



RETURNS MON-SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0221 7125 4943 4809

X0 JOTA

60484
IL-US
ORD

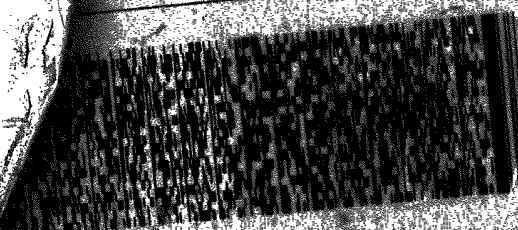


FD: 832374 06Nov2020 GRBA 56DG3/51D8/05A2

262) 202-5955

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

ERICA CHICAGO
ND STREET
SITY PARK IL 60484-3101



RETURNS MON - SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

FedEx
TRK# 7125 4943 4831

X0 JOTA

60484
IL-US
ORD



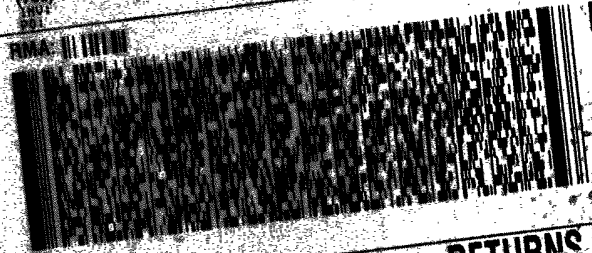
FID: 832374 06Nov2020 GRBA 56DG3/51D8/05A2

ORIGIN ID: RRLA (262) 202-5955
GUEST: KAELYN BLOTZ
COUNTRY INN SUITES
2020 OLD PESHTIGO CT.
MARINETTE, WI 54149
UNITED STATES US

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

TO
TESTAMERICA CHICAGO
2417 BOND STREET
UNIVERSITY PARK IL 60484-3101

(708) 534-6200
REF: DEPT:



RETURNS MON - SAT
SATURDAY 12:00P
PRIORITY OVERNIGHT

FedEx
TRK# 7125 4943 4820

X0 JOTA

60484
IL-US
ORD



FID: 832374 06Nov2020 GRBA 56DG3/51D8/05A2

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ORIGIN ID:RRLA (262) 202-5955
GUEST: KAELYN BLOTZ
COUNTRY INN & SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MA
CAD: 525155/CAFE340

MARINETTE, WI 54143
UNITED STATES US

TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(708) 634-5200

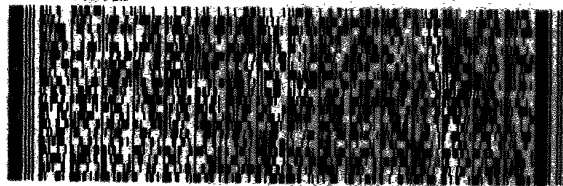
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DEPT:

RMA: ||| ||| |||



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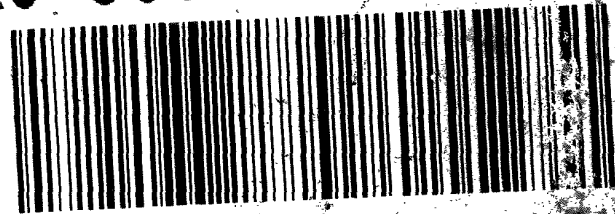
TRK#
0221

7125 4943 4810

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

X0 JOTA



FID: 832374 06Nov2020 GRBA 56DG3/5108/05A2

ORIGIN ID:RRLA (262) 202-5955
GUEST: JEREMY HAMLIN
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 06MAR20
ACTWGT: 25.00 LB MA
CAD: 525155/CAFE3211

MARINETTE, WI 54143
UNITED STATES US

TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(708) 634-5200

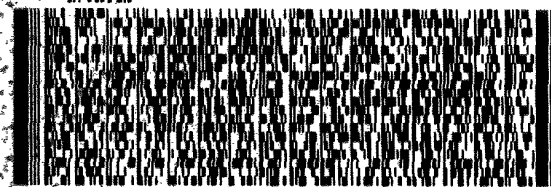
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FedEx

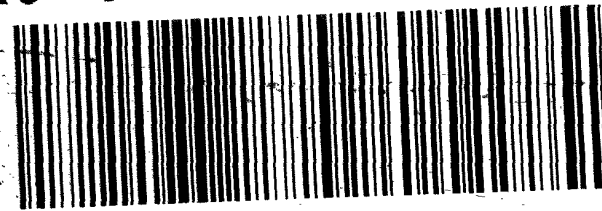
TRK#
0221

7125 4942 2106

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

X0 JOTA



FID: 832374 06Nov2020 GRBA 56DG3/5108/05A2



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Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-190768-1

Login Number: 190768

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	
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	2.6,2.7,2.5,1.8,2.7,1.6,1.0,2.0,1.2,0.1,1.4
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.	True	
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: ARCADIS U.S., Inc.

Job Number: 500-190768-1

Login Number: 190768

List Number: 2

Creator: Saephan, Kae C

List Source: Eurofins TestAmerica, Sacramento

List Creation: 11/10/20 01:48 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	1363728/1363726/1363731/1363730
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: 2.1/0.7/1.0/2.3c corr: 1.6/0.8/1.1/2.4c
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	

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

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)
500-190768-1	GW-M01 (11052020)	74	60	87	87	97	100	105	91
500-190768-2	GW-M02 (11052020)	63	48	67	67	72	66	66	60
500-190768-3	GW-M03 (11052020)	115	88		138		144	162 *5	172 *5
500-190768-3 - DL	GW-M03 (11052020)			84		86			
500-190768-4	GW-M04 (11052020)	90	70	93	99		98	96	101
500-190768-4 - DL	GW-M04 (11052020)					86			
500-190768-5	GW-M05 (11052020)	77	61	85	87	91	89	95	91
500-190768-6	GW-M06 (11052020)	79	63	92	91		94	97	99
500-190768-6 - DL	GW-M06 (11052020)					78			
500-190768-7	GW-M07 (11052020)	98					117	117	110
500-190768-7 - DL	GW-M07 (11052020)		76	68	73	71			
500-190768-8	GW-M08 (11052020)	41	34	52	54	57	54	56	62
500-190768-9	GW-M09 (11052020)	57	49	67	66	72	72	75	70
500-190768-10	GW-M10 (11052020)	81	68	94	93	97	98	105	92
500-190768-11	DUP-02 (11052020)	77	60	91	90	100	102	103	109
LCS 320-431316/2-A	Lab Control Sample	98	97	90	96	100	87	89	90
LCSD 320-431316/3-A	Lab Control Sample Dup	97	99	94	94	96	87	83	91
MB 320-431316/1-A	Method Blank	104	103	100	100	104	96	92	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
500-190768-1	GW-M01 (11052020)	81	77	72	75	90	98	95	133
500-190768-2	GW-M02 (11052020)	42	26	36	56	66	66	70	78
500-190768-3	GW-M03 (11052020)	118	121	138	111	147	146	146	193 *5
500-190768-3 - DL	GW-M03 (11052020)								
500-190768-4	GW-M04 (11052020)	90	83	78	85	99	99	104	115
500-190768-4 - DL	GW-M04 (11052020)								
500-190768-5	GW-M05 (11052020)	67	74	70	74	82	88	87	107
500-190768-6	GW-M06 (11052020)	70	73	71	75	88	93	87	82
500-190768-6 - DL	GW-M06 (11052020)								
500-190768-7	GW-M07 (11052020)	88	76	92	93	110	116	104	113
500-190768-7 - DL	GW-M07 (11052020)					77			
500-190768-8	GW-M08 (11052020)	46	36	36	42	55	54	46	64
500-190768-9	GW-M09 (11052020)	50	51	61	58	69	72	65	68
500-190768-10	GW-M10 (11052020)	70	75	82	78	96	97	85	111
500-190768-11	DUP-02 (11052020)	83	81	88	75	90	97	98	121
LCS 320-431316/2-A	Lab Control Sample	82	79	91	98	99	99	99	94
LCSD 320-431316/3-A	Lab Control Sample Dup	85	80	96	100	99	98	99	96
MB 320-431316/1-A	Method Blank	105	91	97	104	110	104	105	108

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
500-190768-1	GW-M01 (11052020)	119	107	81	95	71	93	91	140
500-190768-2	GW-M02 (11052020)	75	56	37	20	16	69	74	86
500-190768-3	GW-M03 (11052020)	170 *5	173 *5	132	146 *5	122 *5	132		208 *5
500-190768-3 - DL	GW-M03 (11052020)							104	
500-190768-4	GW-M04 (11052020)	120	82	61	55	44	81		101
500-190768-4 - DL	GW-M04 (11052020)							94	
500-190768-5	GW-M05 (11052020)	99	85	59	63	49	84	71	101

Eurofins TestAmerica, Chicago

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFm (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
500-190768-6	GW-M06 (11052020)	91	94	66	63	54	93		119
500-190768-6 - DL	GW-M06 (11052020)							101	
500-190768-7	GW-M07 (11052020)	119	112	84	92	81	104		
500-190768-7 - DL	GW-M07 (11052020)							109	86
500-190768-8	GW-M08 (11052020)	74	57	43	39	28	64	59	87
500-190768-9	GW-M09 (11052020)	70	80	60	30	27	73	72	84
500-190768-10	GW-M10 (11052020)	119	84	59	55	44	101	87	133
500-190768-11	DUP-02 (11052020)	116	77	57	49	45	88	81	118
LCS 320-431316/2-A	Lab Control Sample	97	97	97	77	76	49	56	60
LCSD 320-431316/3-A	Lab Control Sample Dup	101	100	95	87	84	51	55	63
MB 320-431316/1-A	Method Blank	113	98	100	87	94	53	64	66

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
500-190768-1	GW-M01 (11052020)	77
500-190768-2	GW-M02 (11052020)	60
500-190768-3	GW-M03 (11052020)	119
500-190768-3 - DL	GW-M03 (11052020)	
500-190768-4	GW-M04 (11052020)	86
500-190768-4 - DL	GW-M04 (11052020)	
500-190768-5	GW-M05 (11052020)	76
500-190768-6	GW-M06 (11052020)	82
500-190768-6 - DL	GW-M06 (11052020)	
500-190768-7	GW-M07 (11052020)	97
500-190768-7 - DL	GW-M07 (11052020)	
500-190768-8	GW-M08 (11052020)	46
500-190768-9	GW-M09 (11052020)	58
500-190768-10	GW-M10 (11052020)	83
500-190768-11	DUP-02 (11052020)	80
LCS 320-431316/2-A	Lab Control Sample	92
LCSD 320-431316/3-A	Lab Control Sample Dup	94
MB 320-431316/1-A	Method Blank	96

Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- PFHxDA = 13C2 PFHxDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Project/Site: Marinette 30062361.00001

Job ID: 500-190768-1

d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFm = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = ¹³C3 HFPO-DA

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ANALYTICAL REPORT

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-190770-1
Client Project/Site: Marinette 30062361.00001

For:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Attn: Lisa Rutkowski



Authorized for release by:
11/20/2020 3:08:59 PM
Robin Kintz, Project Manager II
(708)534-5200
Robin.Kintz@Eurofinset.com

Designee for
Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Job ID: 500-190770-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-190770-1

Comments

No additional comments.

Receipt

The samples were received on 11/7/2020 9:55 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 11 coolers at receipt time were 0.1° C, 1.0° C, 1.2° C, 1.4° C, 1.6° C, 1.8° C, 2.0° C, 2.5° C, 2.6° C, 2.7° C and 2.7° C.

Metals

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

LCMS

Method 537 (modified): The 'l' qualifier means the transition mass ratio for Perfluorotetradecanoic acid (PFTeA) was outside of the established ratio limits. The qualitative identification of the analytes have some degree of uncertainty. However, analyst judgment was used to positively identify the analytes: The percent recovery of PFTeA is within control limits. The is no impact on the data. CCVL 320-431773/2.

Method 537 (modified): The "l" qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. 500-190770-8

Method 537 (modified): Results for samples 500-190770-8 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): The "l" qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgement was used to positively identify the analyte.
CCVL 320-432078/2

Method 537 (modified): Several Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: 500-190770-1. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s).

Method 537 (modified): The "l" qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).
500-190770-1, 500-190770-5 and 500-190770-7

Method 537 (modified): Due to the high concentration of Perfluoroheptanoic acid (PFHpA) and Perfluorobutanoic acid (PFBA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-431326 and analytical batch 320-431580 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries for several for preparation batch 320-431326 and analytical batch 320-431580 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 537 (modified): Results for samples 500-190770-2, 500-190770-2[MS], 500-190770-2[MSD], 500-190770-3, 500-190770-5, 500-190770-7 and 500-190770-11 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Job ID: 500-190770-1 (Continued)

Laboratory: Eurofins TestAmerica, Chicago (Continued)

Method 537 (modified): Due to the high concentration of several analytes, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-431326 and analytical batch 320-431897 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): Due to exceedingly high concentrations and sample matrix of M2-6:2 FTS in the original extract, the following sample required a 500x dilution: 500-190770-3 and 500-190770-11. Internal standard and isotope dilution analyte solutions were refortified into the extract after dilution so quantitation could be performed. 500-190770-3 and 500-190770-11

Method 537 (modified): Due to Isotope Dilution Analyte (IDA) exceedingly high recovery of M2-6:2 FTS in the original extract, the following sample required a 500x dilution: 500-190770-4. Internal standard and isotope dilution analyte solutions were refortified into the extract after dilution so quantitation could be performed. 500-190770-4

Method 537 (modified): Results for sample 500-190770-4 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

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

General Chemistry

Method 9060A: The DOC result for 500-190770-3 was greater than the TOC result. The results were within duplicate range. The results have been reported.

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

Organic Prep

Method 3535: The following samples were observed to be yellow and contain a thin layer of sediment at the bottom of the bottle prior to extraction: 500-190770-1, 500-190770-2, 500-190770-2[MS], 500-190770-2[MSD], 500-190770-3, 500-190770-5, 500-190770-6 and 500-190770-11.

320-431326
3535_PFC
Water

Method 3535: During the solid phase extraction process, the following samples contained non-settable particulates which clogged the solid phase extraction column: 500-190770-1, 500-190770-2, 500-190770-2[MS], 500-190770-2[MSD], 500-190770-3, 500-190770-5, 500-190770-6, 500-190770-7 and 500-190770-9.

320-431326
3535_PFC
Water

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-431737.

320-431737
Method: 3535 PFC-W

Method 3535: The following samples contained a thin layer of sediment at the bottom of the bottle prior to extraction: 500-190770-4, 500-190770-8 and 500-190770-10.

320-431737
Method: 3535 PFC-W

Method 3535: The following samples were yellow prior to extraction: 500-190770-4 and 500-190770-8.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Job ID: 500-190770-1 (Continued)

Laboratory: Eurofins TestAmerica, Chicago (Continued)

320-431737
Method: 3535 PFC-W

Method 3535: The following sample was brown prior to extraction: 500-190770-10.

320-431737
Method: 3535 PFC-W

Method 3535: During the solid phase extraction process, the following samples contain non-settable particulates which clogged the solid phase extraction column: 500-190770-4, 500-190770-8 and 500-190770-10.

320-431737
Method: 3535 PFC-W

Method 3535: The following samples are light yellow after extraction/final volume: 500-190770-4 and 500-190770-8.

320-431737
Method: 3535 PFC-W

Method 3535: The following sample is light blue after extraction/final volume: 500-190770-10.

320-431737
Method: 3535 PFC-W

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-431737.

320-431737
Method: 3535 PFC-W

Method 3535: During the solid phase extraction process, the following samples contain non-settable particulates which clogged the solid phase extraction column: 500-190770-4.

320-431737
Method: 3535 PFC-W

Method 3535: The following sample is light yellow after extraction/final volume: 500-190770-4.

320-431737
Method: 3535 PFC-W

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



Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
6010C	Metals (ICP)	SW846	TAL CHI
9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
Dilution	Dilution and Re-fortification of Standards	None	TAL SAC
FILTRATION	Sample Filtration	None	TAL CHI

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-190770-1	GW-U01 (11062020)	Water	11/06/20 08:20	11/07/20 09:55	
500-190770-2	GW-U02 (11062020)	Water	11/06/20 08:30	11/07/20 09:55	
500-190770-3	GW-U03 (11062020)	Water	11/06/20 08:55	11/07/20 09:55	
500-190770-4	GW-U04 (11062020)	Water	11/06/20 09:25	11/07/20 09:55	
500-190770-5	GW-U05 (11062020)	Water	11/06/20 10:20	11/07/20 09:55	
500-190770-6	GW-U06 (11062020)	Water	11/06/20 10:30	11/07/20 09:55	
500-190770-7	GW-U07 (11062020)	Water	11/06/20 10:50	11/07/20 09:55	
500-190770-8	GW-U08 (11062020)	Water	11/06/20 11:00	11/07/20 09:55	
500-190770-9	GW-U09 (11062020)	Water	11/06/20 11:15	11/07/20 09:55	
500-190770-10	GW-U10 (11062020)	Water	11/06/20 11:35	11/07/20 09:55	
500-190770-11	DUP-03 (11062020)	Water	11/06/20 00:00	11/07/20 09:55	



Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U01 (11062020)

Lab Sample ID: 500-190770-1

Date Collected: 11/06/20 08:20

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	31		4.9	2.3	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluoropentanoic acid (PFPeA)	52		1.9	0.48	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorohexanoic acid (PFHxA)	62		1.9	0.56	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluoroheptanoic acid (PFHpA)	38		1.9	0.24	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorooctanoic acid (PFOA)	75		1.9	0.82	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorononanoic acid (PFNA)	13		1.9	0.26	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.1	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.3	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.71	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.86	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.91	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorobutanesulfonic acid (PFBS)	1.4	J	1.9	0.19	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluoropentanesulfonic acid (PFPeS)	0.84	J	1.9	0.29	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorohexanesulfonic acid (PFHxS)	21		1.9	0.55	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.8		1.9	0.18	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorooctanesulfonic acid (PFOS)	79	I	1.9	0.52	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.36	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.94	ng/L		11/13/20 04:55	11/14/20 03:23	1
Perfluorooctanesulfonamide (FOSA)	1.1	J	1.9	0.95	ng/L		11/13/20 04:55	11/14/20 03:23	1
NEtFOSA	<1.9		1.9	0.84	ng/L		11/13/20 04:55	11/14/20 03:23	1
NMeFOSA	0.48	J	1.9	0.42	ng/L		11/13/20 04:55	11/14/20 03:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		11/13/20 04:55	11/14/20 03:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.9		4.9	1.3	ng/L		11/13/20 04:55	11/14/20 03:23	1
NMeFOSE	<3.9		3.9	1.4	ng/L		11/13/20 04:55	11/14/20 03:23	1
NEtFOSE	<1.9		1.9	0.82	ng/L		11/13/20 04:55	11/14/20 03:23	1
4:2 FTS	0.77	J	1.9	0.23	ng/L		11/13/20 04:55	11/14/20 03:23	1
6:2 FTS	78		4.9	2.4	ng/L		11/13/20 04:55	11/14/20 03:23	1
8:2 FTS	20		1.9	0.45	ng/L		11/13/20 04:55	11/14/20 03:23	1
10:2 FTS	<1.9		1.9	0.65	ng/L		11/13/20 04:55	11/14/20 03:23	1
DONA	<1.9		1.9	0.39	ng/L		11/13/20 04:55	11/14/20 03:23	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		11/13/20 04:55	11/14/20 03:23	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:55	11/14/20 03:23	1
F-53B Minor	<1.9		1.9	0.31	ng/L		11/13/20 04:55	11/14/20 03:23	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	16	*5	25 - 150				11/13/20 04:55	11/14/20 03:23	1
13C5 PFPeA	25		25 - 150				11/13/20 04:55	11/14/20 03:23	1
13C2 PFHxA	24	*5	25 - 150				11/13/20 04:55	11/14/20 03:23	1
13C4 PFHpA	24	*5	25 - 150				11/13/20 04:55	11/14/20 03:23	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U01 (11062020)

Lab Sample ID: 500-190770-1

Date Collected: 11/06/20 08:20

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOA	26		25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C5 PFNA	22	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C2 PFDA	26		25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C2 PFUnA	22	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C2 PFDoA	21	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C2 PFTeDA	20	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C2 PFHxDA	20	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C3 PFBS	24	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
18O2 PFHxS	23	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C4 PFOS	24	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C8 FOSA	26		25 - 150	11/13/20 04:55	11/14/20 03:23	1
d3-NMeFOSAA	23	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
d5-NEtFOSAA	21	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1
d-N-MeFOSA-M	26		20 - 150	11/13/20 04:55	11/14/20 03:23	1
d-N-EtFOSA-M	25		20 - 150	11/13/20 04:55	11/14/20 03:23	1
d7-N-MeFOSE-M	12		10 - 120	11/13/20 04:55	11/14/20 03:23	1
d9-N-EtFOSE-M	11		10 - 120	11/13/20 04:55	11/14/20 03:23	1
M2-4:2 FTS	28		25 - 150	11/13/20 04:55	11/14/20 03:23	1
M2-6:2 FTS	37		25 - 150	11/13/20 04:55	11/14/20 03:23	1
M2-8:2 FTS	39		25 - 150	11/13/20 04:55	11/14/20 03:23	1
13C3 HFPO-DA	22	*5	25 - 150	11/13/20 04:55	11/14/20 03:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U02 (11062020)

Lab Sample ID: 500-190770-2

Date Collected: 11/06/20 08:30

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	250		4.7	2.2	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluoroheptanoic acid (PFHpA)	270		1.9	0.23	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorononanoic acid (PFNA)	140	F1	1.9	0.25	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorodecanoic acid (PFDA)	4.2		1.9	0.29	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluoroundecanoic acid (PFUnA)	1.6	J	1.9	1.0	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorobutanesulfonic acid (PFBS)	3.9		1.9	0.19	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluoropentanesulfonic acid (PFPeS)	4.9		1.9	0.28	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorohexanesulfonic acid (PFHxS)	65	F1	1.9	0.53	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.8		1.9	0.18	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorooctanesulfonic acid (PFOS)	110	F1	1.9	0.51	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		11/13/20 04:55	11/14/20 03:32	1
Perfluorooctanesulfonamide (FOSA)	6.1		1.9	0.92	ng/L		11/13/20 04:55	11/14/20 03:32	1
NEtFOSA	<1.9		1.9	0.82	ng/L		11/13/20 04:55	11/14/20 03:32	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:55	11/14/20 03:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:55	11/14/20 03:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.4	J	4.7	1.2	ng/L		11/13/20 04:55	11/14/20 03:32	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:55	11/14/20 03:32	1
NEtFOSE	<1.9		1.9	0.80	ng/L		11/13/20 04:55	11/14/20 03:32	1
4:2 FTS	110	F1	1.9	0.22	ng/L		11/13/20 04:55	11/14/20 03:32	1
8:2 FTS	130	F1	1.9	0.43	ng/L		11/13/20 04:55	11/14/20 03:32	1
10:2 FTS	<1.9	F1	1.9	0.63	ng/L		11/13/20 04:55	11/14/20 03:32	1
DONA	<1.9		1.9	0.37	ng/L		11/13/20 04:55	11/14/20 03:32	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:55	11/14/20 03:32	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/13/20 04:55	11/14/20 03:32	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 03:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	58		25 - 150				11/13/20 04:55	11/14/20 03:32	1
13C4 PFHpA	58		25 - 150				11/13/20 04:55	11/14/20 03:32	1
13C5 PFNA	55		25 - 150				11/13/20 04:55	11/14/20 03:32	1
13C2 PFDA	62		25 - 150				11/13/20 04:55	11/14/20 03:32	1
13C2 PFUnA	53		25 - 150				11/13/20 04:55	11/14/20 03:32	1
13C2 PFDoA	59		25 - 150				11/13/20 04:55	11/14/20 03:32	1
13C2 PFTeDA	52		25 - 150				11/13/20 04:55	11/14/20 03:32	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U02 (11062020)

Lab Sample ID: 500-190770-2

Date Collected: 11/06/20 08:30

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFHxDA	50		25 - 150	11/13/20 04:55	11/14/20 03:32	1
13C3 PFBS	56		25 - 150	11/13/20 04:55	11/14/20 03:32	1
18O2 PFHxS	63		25 - 150	11/13/20 04:55	11/14/20 03:32	1
13C4 PFOS	59		25 - 150	11/13/20 04:55	11/14/20 03:32	1
13C8 FOSA	57		25 - 150	11/13/20 04:55	11/14/20 03:32	1
d3-NMeFOSAA	69		25 - 150	11/13/20 04:55	11/14/20 03:32	1
d5-NEtFOSAA	50		25 - 150	11/13/20 04:55	11/14/20 03:32	1
d-N-MeFOSA-M	55		20 - 150	11/13/20 04:55	11/14/20 03:32	1
d-N-EtFOSA-M	48		20 - 150	11/13/20 04:55	11/14/20 03:32	1
d7-N-MeFOSE-M	48		10 - 120	11/13/20 04:55	11/14/20 03:32	1
d9-N-EtFOSE-M	39		10 - 120	11/13/20 04:55	11/14/20 03:32	1
M2-4:2 FTS	74		25 - 150	11/13/20 04:55	11/14/20 03:32	1
M2-8:2 FTS	97		25 - 150	11/13/20 04:55	11/14/20 03:32	1
13C3 HFPO-DA	50		25 - 150	11/13/20 04:55	11/14/20 03:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	920		94	23	ng/L		11/13/20 04:55	11/14/20 18:50	50
Perfluorohexanoic acid (PFHxA)	750		94	27	ng/L		11/13/20 04:55	11/14/20 18:50	50
Perfluorooctanoic acid (PFOA)	1200		94	40	ng/L		11/13/20 04:55	11/14/20 18:50	50
6:2 FTS	6900		230	120	ng/L		11/13/20 04:55	11/14/20 18:50	50

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFPeA	51		25 - 150	11/13/20 04:55	11/14/20 18:50	50
13C2 PFHxA	50		25 - 150	11/13/20 04:55	11/14/20 18:50	50
13C4 PFOA	52		25 - 150	11/13/20 04:55	11/14/20 18:50	50
M2-6:2 FTS	86		25 - 150	11/13/20 04:55	11/14/20 18:50	50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	69		6.7	2.6	mg/L			11/13/20 12:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U03 (11062020)

Lab Sample ID: 500-190770-3

Date Collected: 11/06/20 08:55

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1300		470	230	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluoropentanoic acid (PFPeA)	5900		190	46	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorohexanoic acid (PFHxA)	5500		190	55	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluoroheptanoic acid (PFHpA)	2100		190	24	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorooctanoic acid (PFOA)	15000		190	80	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorononanoic acid (PFNA)	700		190	26	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorodecanoic acid (PFDA)	110	J	190	29	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluoroundecanoic acid (PFUnA)	<190		190	100	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorododecanoic acid (PFDoA)	<190		190	52	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorotridecanoic acid (PFTriA)	<190		190	120	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorotetradecanoic acid (PFTeA)	<190		190	69	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluoro-n-hexadecanoic acid (PFHxDA)	<190		190	84	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluoro-n-octadecanoic acid (PFODA)	<190		190	89	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorobutanesulfonic acid (PFBS)	<190		190	19	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluoropentanesulfonic acid (PFPeS)	<190		190	28	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorohexanesulfonic acid (PFHxS)	170	J	190	54	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluoroheptanesulfonic Acid (PFHpS)	<190		190	18	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorooctanesulfonic acid (PFOS)	1100		190	51	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorononanesulfonic acid (PFNS)	<190		190	35	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorodecanesulfonic acid (PFDS)	<190		190	30	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorododecanesulfonic acid (PFDoS)	<190		190	92	ng/L		11/13/20 04:55	11/14/20 19:18	100
Perfluorooctanesulfonamide (FOSA)	<190		190	93	ng/L		11/13/20 04:55	11/14/20 19:18	100
NEtFOSA	<190		190	82	ng/L		11/13/20 04:55	11/14/20 19:18	100
NMeFOSA	<190		190	41	ng/L		11/13/20 04:55	11/14/20 19:18	100
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<470		470	110	ng/L		11/13/20 04:55	11/14/20 19:18	100
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<470		470	120	ng/L		11/13/20 04:55	11/14/20 19:18	100
NMeFOSE	<380		380	130	ng/L		11/13/20 04:55	11/14/20 19:18	100
NEtFOSE	<190		190	80	ng/L		11/13/20 04:55	11/14/20 19:18	100
4:2 FTS	470		190	23	ng/L		11/13/20 04:55	11/14/20 19:18	100
8:2 FTS	2900		190	44	ng/L		11/13/20 04:55	11/14/20 19:18	100
10:2 FTS	<190		190	63	ng/L		11/13/20 04:55	11/14/20 19:18	100
DONA	<190		190	38	ng/L		11/13/20 04:55	11/14/20 19:18	100
HFPO-DA (GenX)	<380		380	140	ng/L		11/13/20 04:55	11/14/20 19:18	100
F-53B Major	<190		190	23	ng/L		11/13/20 04:55	11/14/20 19:18	100
F-53B Minor	<190		190	30	ng/L		11/13/20 04:55	11/14/20 19:18	100

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	69		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C5 PFPeA	65		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C2 PFHxA	64		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C4 PFHpA	63		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C4 PFOA	62		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C5 PFNA	69		25 - 150	11/13/20 04:55	11/14/20 19:18	100

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U03 (11062020)

Lab Sample ID: 500-190770-3

Date Collected: 11/06/20 08:55

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	58		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C2 PFUnA	64		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C2 PFDoA	58		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C2 PFTeDA	56		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C2 PFHxDA	49		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C3 PFBS	69		25 - 150	11/13/20 04:55	11/14/20 19:18	100
18O2 PFHxS	62		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C4 PFOS	77		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C8 FOSA	67		25 - 150	11/13/20 04:55	11/14/20 19:18	100
d3-NMeFOSAA	72		25 - 150	11/13/20 04:55	11/14/20 19:18	100
d5-NEtFOSAA	63		25 - 150	11/13/20 04:55	11/14/20 19:18	100
d-N-MeFOSA-M	48		20 - 150	11/13/20 04:55	11/14/20 19:18	100
d-N-EtFOSA-M	51		20 - 150	11/13/20 04:55	11/14/20 19:18	100
d7-N-MeFOSE-M	38		10 - 120	11/13/20 04:55	11/14/20 19:18	100
d9-N-EtFOSE-M	33		10 - 120	11/13/20 04:55	11/14/20 19:18	100
M2-4:2 FTS	70		25 - 150	11/13/20 04:55	11/14/20 19:18	100
M2-8:2 FTS	97		25 - 150	11/13/20 04:55	11/14/20 19:18	100
13C3 HFPO-DA	47		25 - 150	11/13/20 04:55	11/14/20 19:18	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	28000		2400	1200	ng/L		11/13/20 04:55	11/17/20 11:51	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
M2-6:2 FTS	108		25 - 150	11/13/20 04:55	11/17/20 11:51	1			

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	8.5		0.20	0.082	mg/L		11/12/20 07:34	11/12/20 21:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	4.8		0.20	0.082	mg/L		11/12/20 07:36	11/12/20 21:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	12		1.0	0.47	mg/L			11/11/20 22:27	1
Alkalinity	250		5.0	3.7	mg/L			11/14/20 14:53	1
Bicarbonate Alkalinity as CaCO3	250		5.0	3.7	mg/L			11/14/20 14:53	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 14:53	1
Total Suspended Solids	210		20	7.7	mg/L			11/13/20 12:39	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	15		1.0	0.47	mg/L			11/17/20 00:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U04 (11062020)

Lab Sample ID: 500-190770-4

Date Collected: 11/06/20 09:25

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1400		450	220	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluoropentanoic acid (PFPeA)	5700		180	44	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorohexanoic acid (PFHxA)	5800		180	53	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluoroheptanoic acid (PFHpA)	1900		180	23	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorooctanoic acid (PFOA)	12000		180	77	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorononanoic acid (PFNA)	350		180	24	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorodecanoic acid (PFDA)	<180		180	28	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluoroundecanoic acid (PFUnA)	<180		180	100	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorododecanoic acid (PFDoA)	<180		180	50	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorotridecanoic acid (PFTriA)	<180		180	120	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorotetradecanoic acid (PFTeA)	<180		180	66	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluoro-n-hexadecanoic acid (PFHxDA)	<180		180	81	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluoro-n-octadecanoic acid (PFODA)	<180		180	85	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorobutanesulfonic acid (PFBS)	<180		180	18	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluoropentanesulfonic acid (PFPeS)	<180		180	27	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorohexanesulfonic acid (PFHxS)	120 J		180	52	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluoroheptanesulfonic Acid (PFHpS)	<180		180	17	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorooctanesulfonic acid (PFOS)	1000		180	49	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorononanesulfonic acid (PFNS)	<180		180	34	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorodecanesulfonic acid (PFDS)	<180		180	29	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorododecanesulfonic acid (PFDoS)	<180		180	88	ng/L		11/14/20 04:46	11/17/20 19:55	100
Perfluorooctanesulfonamide (FOSA)	<180		180	89	ng/L		11/14/20 04:46	11/17/20 19:55	100
NEtFOSA	<180		180	79	ng/L		11/14/20 04:46	11/17/20 19:55	100
NMeFOSA	<180		180	39	ng/L		11/14/20 04:46	11/17/20 19:55	100
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<450		450	110	ng/L		11/14/20 04:46	11/17/20 19:55	100
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<450		450	120	ng/L		11/14/20 04:46	11/17/20 19:55	100
NMeFOSE	<360		360	130	ng/L		11/14/20 04:46	11/17/20 19:55	100
NEtFOSE	<180		180	77	ng/L		11/14/20 04:46	11/17/20 19:55	100
4:2 FTS	390		180	22	ng/L		11/14/20 04:46	11/17/20 19:55	100
8:2 FTS	3200		180	42	ng/L		11/14/20 04:46	11/17/20 19:55	100
10:2 FTS	<180		180	61	ng/L		11/14/20 04:46	11/17/20 19:55	100
DONA	<180		180	36	ng/L		11/14/20 04:46	11/17/20 19:55	100
HFPO-DA (GenX)	<360		360	140	ng/L		11/14/20 04:46	11/17/20 19:55	100
F-53B Major	<180		180	22	ng/L		11/14/20 04:46	11/17/20 19:55	100
F-53B Minor	<180		180	29	ng/L		11/14/20 04:46	11/17/20 19:55	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	76		25 - 150				11/14/20 04:46	11/17/20 19:55	100
13C5 PFPeA	73		25 - 150				11/14/20 04:46	11/17/20 19:55	100
13C2 PFHxA	79		25 - 150				11/14/20 04:46	11/17/20 19:55	100
13C4 PFHpA	76		25 - 150				11/14/20 04:46	11/17/20 19:55	100
13C4 PFOA	73		25 - 150				11/14/20 04:46	11/17/20 19:55	100
13C5 PFNA	84		25 - 150				11/14/20 04:46	11/17/20 19:55	100

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U04 (11062020)

Lab Sample ID: 500-190770-4

Date Collected: 11/06/20 09:25

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFDA	70		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C2 PFUnA	68		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C2 PFDoA	67		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C2 PFTeDA	58		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C2 PFHxDA	31		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C3 PFBS	74		25 - 150	11/14/20 04:46	11/17/20 19:55	100
18O2 PFHxS	68		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C4 PFOS	62		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C8 FOSA	60		25 - 150	11/14/20 04:46	11/17/20 19:55	100
d3-NMeFOSAA	95		25 - 150	11/14/20 04:46	11/17/20 19:55	100
d5-NEtFOSAA	81		25 - 150	11/14/20 04:46	11/17/20 19:55	100
d-N-MeFOSA-M	53		20 - 150	11/14/20 04:46	11/17/20 19:55	100
d-N-EtFOSA-M	47		20 - 150	11/14/20 04:46	11/17/20 19:55	100
d7-N-MeFOSE-M	40		10 - 120	11/14/20 04:46	11/17/20 19:55	100
d9-N-EtFOSE-M	31		10 - 120	11/14/20 04:46	11/17/20 19:55	100
M2-4:2 FTS	77		25 - 150	11/14/20 04:46	11/17/20 19:55	100
M2-8:2 FTS	102		25 - 150	11/14/20 04:46	11/17/20 19:55	100
13C3 HFPO-DA	70		25 - 150	11/14/20 04:46	11/17/20 19:55	100

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
6:2 FTS	46000		2300	1100	ng/L		11/14/20 04:46	11/18/20 17:04	1

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOS	102		25 - 150	11/14/20 04:46	11/18/20 17:04	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	1700		200	77	mg/L			11/13/20 12:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U05 (11062020)

Lab Sample ID: 500-190770-5

Date Collected: 11/06/20 10:20

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	62		4.7	2.3	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluoropentanoic acid (PFPeA)	150		1.9	0.46	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorohexanoic acid (PFHxA)	140		1.9	0.55	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluoroheptanoic acid (PFHpA)	89		1.9	0.24	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorononanoic acid (PFNA)	14		1.9	0.26	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorodecanoic acid (PFDA)	2.5		1.9	0.29	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorododecanoic acid (PFDoA)	0.64	J I	1.9	0.52	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.84	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.89	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorobutanesulfonic acid (PFBS)	1.5	J	1.9	0.19	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluoropentanesulfonic acid (PFPeS)	1.3	J	1.9	0.28	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorohexanesulfonic acid (PFHxS)	16		1.9	0.54	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.5	J	1.9	0.18	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorooctanesulfonic acid (PFOS)	190		1.9	0.51	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.92	ng/L		11/13/20 04:55	11/14/20 04:08	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.93	ng/L		11/13/20 04:55	11/14/20 04:08	1
NEtFOSA	<1.9		1.9	0.83	ng/L		11/13/20 04:55	11/14/20 04:08	1
NMeFOSA	<1.9		1.9	0.41	ng/L		11/13/20 04:55	11/14/20 04:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:55	11/14/20 04:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7		4.7	1.2	ng/L		11/13/20 04:55	11/14/20 04:08	1
NMeFOSE	<3.8		3.8	1.3	ng/L		11/13/20 04:55	11/14/20 04:08	1
NEtFOSE	<1.9		1.9	0.81	ng/L		11/13/20 04:55	11/14/20 04:08	1
4:2 FTS	<1.9		1.9	0.23	ng/L		11/13/20 04:55	11/14/20 04:08	1
6:2 FTS	37		4.7	2.4	ng/L		11/13/20 04:55	11/14/20 04:08	1
8:2 FTS	13		1.9	0.44	ng/L		11/13/20 04:55	11/14/20 04:08	1
10:2 FTS	<1.9		1.9	0.64	ng/L		11/13/20 04:55	11/14/20 04:08	1
DONA	<1.9		1.9	0.38	ng/L		11/13/20 04:55	11/14/20 04:08	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		11/13/20 04:55	11/14/20 04:08	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/13/20 04:55	11/14/20 04:08	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 04:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	56		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C5 PFPeA	61		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C2 PFHxA	57		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C4 PFHpA	56		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C5 PFNA	56		25 - 150	11/13/20 04:55	11/14/20 04:08	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U05 (11062020)

Lab Sample ID: 500-190770-5

Date Collected: 11/06/20 10:20

Matrix: Water

Date Received: 11/07/20 09:55

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

<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C2 PFDA	59		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C2 PFUnA	57		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C2 PFDoA	55		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C2 PFTeDA	44		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C2 PFHxDA	39		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C3 PFBS	59		25 - 150	11/13/20 04:55	11/14/20 04:08	1
18O2 PFHxS	60		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C4 PFOS	57		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C8 FOSA	53		25 - 150	11/13/20 04:55	11/14/20 04:08	1
d3-NMeFOSAA	58		25 - 150	11/13/20 04:55	11/14/20 04:08	1
d5-NEtFOSAA	49		25 - 150	11/13/20 04:55	11/14/20 04:08	1
d-N-MeFOSA-M	57		20 - 150	11/13/20 04:55	11/14/20 04:08	1
d-N-EtFOSA-M	49		20 - 150	11/13/20 04:55	11/14/20 04:08	1
d7-N-MeFOSE-M	39		10 - 120	11/13/20 04:55	11/14/20 04:08	1
d9-N-EtFOSE-M	33		10 - 120	11/13/20 04:55	11/14/20 04:08	1
M2-4:2 FTS	87		25 - 150	11/13/20 04:55	11/14/20 04:08	1
M2-6:2 FTS	100		25 - 150	11/13/20 04:55	11/14/20 04:08	1
M2-8:2 FTS	98		25 - 150	11/13/20 04:55	11/14/20 04:08	1
13C3 HFPO-DA	52		25 - 150	11/13/20 04:55	11/14/20 04:08	1

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

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>RL</u>	<u>MDL</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Perfluorooctanoic acid (PFOA)	480		9.5	4.0	ng/L		11/13/20 04:55	11/14/20 18:23	5
<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>			
13C4 PFOA	58		25 - 150	11/13/20 04:55	11/14/20 18:23	5			

General Chemistry

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>RL</u>	<u>MDL</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Total Suspended Solids	500		100	39	mg/L			11/13/20 12:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U06 (11062020)

Lab Sample ID: 500-190770-6

Date Collected: 11/06/20 10:30

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	67		4.7	2.2	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluoropentanoic acid (PFPeA)	160		1.9	0.46	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorohexanoic acid (PFHxA)	140		1.9	0.54	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluoroheptanoic acid (PFHpA)	94		1.9	0.23	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorooctanoic acid (PFOA)	180		1.9	0.79	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorononanoic acid (PFNA)	43		1.9	0.25	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorodecanoic acid (PFDA)	0.75	J	1.9	0.29	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluoroundecanoic acid (PFUnA)	2.6		1.9	1.0	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.51	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorobutanesulfonic acid (PFBS)	1.2	J	1.9	0.19	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluoropentanesulfonic acid (PFPeS)	0.81	J	1.9	0.28	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorohexanesulfonic acid (PFHxS)	22		1.9	0.53	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.0	J	1.9	0.18	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorooctanesulfonic acid (PFOS)	21		1.9	0.50	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.34	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.90	ng/L		11/13/20 04:55	11/14/20 04:17	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.91	ng/L		11/13/20 04:55	11/14/20 04:17	1
NEtFOSA	<1.9		1.9	0.81	ng/L		11/13/20 04:55	11/14/20 04:17	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/13/20 04:55	11/14/20 04:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		11/13/20 04:55	11/14/20 04:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7		4.7	1.2	ng/L		11/13/20 04:55	11/14/20 04:17	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:55	11/14/20 04:17	1
NEtFOSE	<1.9		1.9	0.79	ng/L		11/13/20 04:55	11/14/20 04:17	1
4:2 FTS	0.50	J	1.9	0.22	ng/L		11/13/20 04:55	11/14/20 04:17	1
6:2 FTS	60		4.7	2.3	ng/L		11/13/20 04:55	11/14/20 04:17	1
8:2 FTS	3.6		1.9	0.43	ng/L		11/13/20 04:55	11/14/20 04:17	1
10:2 FTS	<1.9		1.9	0.62	ng/L		11/13/20 04:55	11/14/20 04:17	1
DONA	<1.9		1.9	0.37	ng/L		11/13/20 04:55	11/14/20 04:17	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:55	11/14/20 04:17	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/13/20 04:55	11/14/20 04:17	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 04:17	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	73		25 - 150				11/13/20 04:55	11/14/20 04:17	1
13C5 PFPeA	85		25 - 150				11/13/20 04:55	11/14/20 04:17	1
13C2 PFHxA	79		25 - 150				11/13/20 04:55	11/14/20 04:17	1
13C4 PFHpA	73		25 - 150				11/13/20 04:55	11/14/20 04:17	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U06 (11062020)

Lab Sample ID: 500-190770-6

Date Collected: 11/06/20 10:30

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOA	71		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C5 PFNA	74		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C2 PFDA	81		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C2 PFUnA	72		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C2 PFDoA	75		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C2 PFTeDA	69		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C2 PFHxDA	65		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C3 PFBS	80		25 - 150	11/13/20 04:55	11/14/20 04:17	1
18O2 PFHxS	78		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C4 PFOS	77		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C8 FOSA	68		25 - 150	11/13/20 04:55	11/14/20 04:17	1
d3-NMeFOSAA	72		25 - 150	11/13/20 04:55	11/14/20 04:17	1
d5-NEtFOSAA	56		25 - 150	11/13/20 04:55	11/14/20 04:17	1
d-N-MeFOSA-M	75		20 - 150	11/13/20 04:55	11/14/20 04:17	1
d-N-EtFOSA-M	72		20 - 150	11/13/20 04:55	11/14/20 04:17	1
d7-N-MeFOSE-M	55		10 - 120	11/13/20 04:55	11/14/20 04:17	1
d9-N-EtFOSE-M	49		10 - 120	11/13/20 04:55	11/14/20 04:17	1
M2-4:2 FTS	110		25 - 150	11/13/20 04:55	11/14/20 04:17	1
M2-6:2 FTS	111		25 - 150	11/13/20 04:55	11/14/20 04:17	1
M2-8:2 FTS	116		25 - 150	11/13/20 04:55	11/14/20 04:17	1
13C3 HFPO-DA	72		25 - 150	11/13/20 04:55	11/14/20 04:17	1

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	370		50	19	mg/L			11/13/20 12:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U07 (11062020)

Lab Sample ID: 500-190770-7

Date Collected: 11/06/20 10:50

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	97		4.6	2.2	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluoropentanoic acid (PFPeA)	270		1.8	0.45	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorohexanoic acid (PFHxA)	190		1.8	0.53	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluoroheptanoic acid (PFHpA)	110		1.8	0.23	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorooctanoic acid (PFOA)	140		1.8	0.78	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorononanoic acid (PFNA)	67		1.8	0.25	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorodecanoic acid (PFDA)	1.1	J	1.8	0.28	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluoroundecanoic acid (PFUnA)	3.4	I	1.8	1.0	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.50	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.81	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.86	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorobutanesulfonic acid (PFBS)	1.9		1.8	0.18	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluoropentanesulfonic acid (PFPeS)	2.5		1.8	0.27	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorohexanesulfonic acid (PFHxS)	36		1.8	0.52	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.7	J	1.8	0.17	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorooctanesulfonic acid (PFOS)	39		1.8	0.49	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.89	ng/L		11/13/20 04:55	11/14/20 04:26	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.90	ng/L		11/13/20 04:55	11/14/20 04:26	1
NEtFOSA	<1.8		1.8	0.80	ng/L		11/13/20 04:55	11/14/20 04:26	1
NMeFOSA	<1.8		1.8	0.39	ng/L		11/13/20 04:55	11/14/20 04:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		11/13/20 04:55	11/14/20 04:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		11/13/20 04:55	11/14/20 04:26	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:55	11/14/20 04:26	1
NEtFOSE	<1.8		1.8	0.78	ng/L		11/13/20 04:55	11/14/20 04:26	1
4:2 FTS	2.5		1.8	0.22	ng/L		11/13/20 04:55	11/14/20 04:26	1
8:2 FTS	8.0		1.8	0.42	ng/L		11/13/20 04:55	11/14/20 04:26	1
10:2 FTS	<1.8		1.8	0.61	ng/L		11/13/20 04:55	11/14/20 04:26	1
DONA	<1.8		1.8	0.37	ng/L		11/13/20 04:55	11/14/20 04:26	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:55	11/14/20 04:26	1
F-53B Major	<1.8		1.8	0.22	ng/L		11/13/20 04:55	11/14/20 04:26	1
F-53B Minor	<1.8		1.8	0.29	ng/L		11/13/20 04:55	11/14/20 04:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	44		25 - 150				11/13/20 04:55	11/14/20 04:26	1
13C5 PFPeA	40		25 - 150				11/13/20 04:55	11/14/20 04:26	1
13C2 PFHxA	40		25 - 150				11/13/20 04:55	11/14/20 04:26	1
13C4 PFHpA	41		25 - 150				11/13/20 04:55	11/14/20 04:26	1
13C4 PFOA	41		25 - 150				11/13/20 04:55	11/14/20 04:26	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U07 (11062020)

Lab Sample ID: 500-190770-7

Date Collected: 11/06/20 10:50

Matrix: Water

Date Received: 11/07/20 09:55

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

<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C5 PFNA	38		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C2 PFDA	44		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C2 PFUnA	39		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C2 PFDoA	35		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C2 PFTeDA	36		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C2 PFHxDA	39		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C3 PFBS	38		25 - 150	11/13/20 04:55	11/14/20 04:26	1
18O2 PFHxS	41		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C4 PFOS	41		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C8 FOSA	38		25 - 150	11/13/20 04:55	11/14/20 04:26	1
d3-NMeFOSAA	40		25 - 150	11/13/20 04:55	11/14/20 04:26	1
d5-NEtFOSAA	31		25 - 150	11/13/20 04:55	11/14/20 04:26	1
d-N-MeFOSA-M	36		20 - 150	11/13/20 04:55	11/14/20 04:26	1
d-N-EtFOSA-M	31		20 - 150	11/13/20 04:55	11/14/20 04:26	1
d7-N-MeFOSE-M	29		10 - 120	11/13/20 04:55	11/14/20 04:26	1
d9-N-EtFOSE-M	27		10 - 120	11/13/20 04:55	11/14/20 04:26	1
M2-4:2 FTS	44		25 - 150	11/13/20 04:55	11/14/20 04:26	1
M2-8:2 FTS	67		25 - 150	11/13/20 04:55	11/14/20 04:26	1
13C3 HFPO-DA	37		25 - 150	11/13/20 04:55	11/14/20 04:26	1

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

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>RL</u>	<u>MDL</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
6:2 FTS	350		9.2	4.6	ng/L		11/13/20 04:55	11/14/20 18:32	2
<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>			
M2-6:2 FTS	59		25 - 150	11/13/20 04:55	11/14/20 18:32	2			

General Chemistry

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>RL</u>	<u>MDL</u>	<u>Unit</u>	<u>D</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Total Suspended Solids	240		50	19	mg/L			11/13/20 12:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U08 (11062020)

Lab Sample ID: 500-190770-8

Date Collected: 11/06/20 11:00

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	89		4.6	2.2	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluoropentanoic acid (PFPeA)	230		1.8	0.45	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorohexanoic acid (PFHxA)	190		1.8	0.54	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluoroheptanoic acid (PFHpA)	130		1.8	0.23	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorooctanoic acid (PFOA)	350		1.8	0.79	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorononanoic acid (PFNA)	27		1.8	0.25	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorodecanoic acid (PFDA)	0.88	J	1.8	0.29	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.51	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.82	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.87	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorobutanesulfonic acid (PFBS)	5.8		1.8	0.18	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluoropentanesulfonic acid (PFPeS)	5.7		1.8	0.28	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorohexanesulfonic acid (PFHxS)	150		1.8	0.53	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.0		1.8	0.18	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorooctanesulfonic acid (PFOS)	48	I	1.8	0.50	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.30	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.90	ng/L		11/14/20 04:46	11/14/20 19:31	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.91	ng/L		11/14/20 04:46	11/14/20 19:31	1
NEtFOSA	<1.8		1.8	0.80	ng/L		11/14/20 04:46	11/14/20 19:31	1
NMeFOSA	<1.8		1.8	0.40	ng/L		11/14/20 04:46	11/14/20 19:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		11/14/20 04:46	11/14/20 19:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		11/14/20 04:46	11/14/20 19:31	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/14/20 04:46	11/14/20 19:31	1
NEtFOSE	<1.8		1.8	0.79	ng/L		11/14/20 04:46	11/14/20 19:31	1
4:2 FTS	4.9		1.8	0.22	ng/L		11/14/20 04:46	11/14/20 19:31	1
10:2 FTS	<1.8		1.8	0.62	ng/L		11/14/20 04:46	11/14/20 19:31	1
DONA	<1.8		1.8	0.37	ng/L		11/14/20 04:46	11/14/20 19:31	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/14/20 04:46	11/14/20 19:31	1
F-53B Major	<1.8		1.8	0.22	ng/L		11/14/20 04:46	11/14/20 19:31	1
F-53B Minor	<1.8		1.8	0.30	ng/L		11/14/20 04:46	11/14/20 19:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	57		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C5 PFPeA	55		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C2 PFHxA	67		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C4 PFHpA	71		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C4 PFOA	77		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C5 PFNA	73		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C2 PFDA	72		25 - 150	11/14/20 04:46	11/14/20 19:31	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U08 (11062020)

Lab Sample ID: 500-190770-8

Date Collected: 11/06/20 11:00

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFluA	72		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C2 PFlDoA	64		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C2 PFlTeDA	65		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C2 PFlHxDA	60		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C3 PFlBS	62		25 - 150	11/14/20 04:46	11/14/20 19:31	1
18O2 PFlHxS	70		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C4 PFlOS	70		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C8 FOSA	56		25 - 150	11/14/20 04:46	11/14/20 19:31	1
d3-NMeFOSAA	66		25 - 150	11/14/20 04:46	11/14/20 19:31	1
d5-NEtFOSAA	69		25 - 150	11/14/20 04:46	11/14/20 19:31	1
d-N-MeFOSA-M	47		20 - 150	11/14/20 04:46	11/14/20 19:31	1
d-N-EtFOSA-M	40		20 - 150	11/14/20 04:46	11/14/20 19:31	1
d7-N-MeFOSE-M	50		10 - 120	11/14/20 04:46	11/14/20 19:31	1
d9-N-EtFOSE-M	47		10 - 120	11/14/20 04:46	11/14/20 19:31	1
M2-4:2 FTS	116		25 - 150	11/14/20 04:46	11/14/20 19:31	1
13C3 HFPO-DA	59		25 - 150	11/14/20 04:46	11/14/20 19:31	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
6:2 FTS	280		46	23	ng/L		11/14/20 04:46	11/16/20 10:35	10
8:2 FTS	10	J	18	4.2	ng/L		11/14/20 04:46	11/16/20 10:35	10
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>			
M2-6:2 FTS	71		25 - 150	11/14/20 04:46	11/16/20 10:35	10			
M2-8:2 FTS	108		25 - 150	11/14/20 04:46	11/16/20 10:35	10			

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	160		33	13	mg/L			11/13/20 12:44	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U09 (11062020)

Lab Sample ID: 500-190770-9

Date Collected: 11/06/20 11:15

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	38		4.7	2.2	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluoropentanoic acid (PFPeA)	90		1.9	0.46	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorohexanoic acid (PFHxA)	63		1.9	0.54	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluoroheptanoic acid (PFHpA)	45		1.9	0.23	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorooctanoic acid (PFOA)	70		1.9	0.80	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorononanoic acid (PFNA)	5.9		1.9	0.25	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorodecanoic acid (PFDA)	1.9		1.9	0.29	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorododecanoic acid (PFDoA)	0.61	J	1.9	0.52	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.28	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorohexanesulfonic acid (PFHxS)	5.6		1.9	0.53	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorooctanesulfonic acid (PFOS)	8.1		1.9	0.51	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		11/13/20 04:55	11/14/20 04:54	1
Perfluorooctanesulfonamide (FOSA)	1.1	J	1.9	0.92	ng/L		11/13/20 04:55	11/14/20 04:54	1
NEtFOSA	<1.9		1.9	0.82	ng/L		11/13/20 04:55	11/14/20 04:54	1
NMeFOSA	0.60	J	1.9	0.40	ng/L		11/13/20 04:55	11/14/20 04:54	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	1.3	J	4.7	1.1	ng/L		11/13/20 04:55	11/14/20 04:54	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	2.0	J	4.7	1.2	ng/L		11/13/20 04:55	11/14/20 04:54	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/13/20 04:55	11/14/20 04:54	1
NEtFOSE	<1.9		1.9	0.80	ng/L		11/13/20 04:55	11/14/20 04:54	1
4:2 FTS	0.54	J	1.9	0.22	ng/L		11/13/20 04:55	11/14/20 04:54	1
6:2 FTS	44		4.7	2.3	ng/L		11/13/20 04:55	11/14/20 04:54	1
8:2 FTS	4.8		1.9	0.43	ng/L		11/13/20 04:55	11/14/20 04:54	1
10:2 FTS	<1.9		1.9	0.63	ng/L		11/13/20 04:55	11/14/20 04:54	1
DONA	<1.9		1.9	0.37	ng/L		11/13/20 04:55	11/14/20 04:54	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/13/20 04:55	11/14/20 04:54	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/13/20 04:55	11/14/20 04:54	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/13/20 04:55	11/14/20 04:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	38		25 - 150				11/13/20 04:55	11/14/20 04:54	1
13C5 PFPeA	38		25 - 150				11/13/20 04:55	11/14/20 04:54	1
13C2 PFHxA	36		25 - 150				11/13/20 04:55	11/14/20 04:54	1
13C4 PFHpA	36		25 - 150				11/13/20 04:55	11/14/20 04:54	1

Eurofins TestAmerica, Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U09 (11062020)

Lab Sample ID: 500-190770-9

Date Collected: 11/06/20 11:15

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	37		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C5 PFNA	33		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C2 PFDA	34		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C2 PFUnA	32		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C2 PFDoA	31		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C2 PFTeDA	33		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C2 PFHxDA	34		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C3 PFBS	34		25 - 150	11/13/20 04:55	11/14/20 04:54	1
18O2 PFHxS	37		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C4 PFOS	37		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C8 FOSA	31		25 - 150	11/13/20 04:55	11/14/20 04:54	1
d3-NMeFOSAA	27		25 - 150	11/13/20 04:55	11/14/20 04:54	1
d5-NEtFOSAA	24	*5	25 - 150	11/13/20 04:55	11/14/20 04:54	1
d-N-MeFOSA-M	31		20 - 150	11/13/20 04:55	11/14/20 04:54	1
d-N-EtFOSA-M	27		20 - 150	11/13/20 04:55	11/14/20 04:54	1
d7-N-MeFOSE-M	21		10 - 120	11/13/20 04:55	11/14/20 04:54	1
d9-N-EtFOSE-M	20		10 - 120	11/13/20 04:55	11/14/20 04:54	1
M2-4:2 FTS	59		25 - 150	11/13/20 04:55	11/14/20 04:54	1
M2-6:2 FTS	53		25 - 150	11/13/20 04:55	11/14/20 04:54	1
M2-8:2 FTS	50		25 - 150	11/13/20 04:55	11/14/20 04:54	1
13C3 HFPO-DA	33		25 - 150	11/13/20 04:55	11/14/20 04:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	210		29	11	mg/L			11/13/20 12:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U10 (11062020)

Lab Sample ID: 500-190770-10

Date Collected: 11/06/20 11:35

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	16		4.9	2.4	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluoropentanoic acid (PFPeA)	37		2.0	0.48	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorohexanoic acid (PFHxA)	23		2.0	0.57	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluoroheptanoic acid (PFHpA)	12		2.0	0.25	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorooctanoic acid (PFOA)	6.8		2.0	0.84	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorononanoic acid (PFNA)	0.28	J	2.0	0.27	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.54	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.72	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.88	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.93	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorobutanesulfonic acid (PFBS)	0.49	J	2.0	0.20	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorohexanesulfonic acid (PFHxS)	1.2	J	2.0	0.56	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.53	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.96	ng/L		11/14/20 04:46	11/14/20 19:59	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.97	ng/L		11/14/20 04:46	11/14/20 19:59	1
NEtFOSA	<2.0		2.0	0.86	ng/L		11/14/20 04:46	11/14/20 19:59	1
NMeFOSA	<2.0		2.0	0.42	ng/L		11/14/20 04:46	11/14/20 19:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		11/14/20 04:46	11/14/20 19:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.9		4.9	1.3	ng/L		11/14/20 04:46	11/14/20 19:59	1
NMeFOSE	<3.9		3.9	1.4	ng/L		11/14/20 04:46	11/14/20 19:59	1
NEtFOSE	<2.0		2.0	0.84	ng/L		11/14/20 04:46	11/14/20 19:59	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/14/20 04:46	11/14/20 19:59	1
6:2 FTS	9.8		4.9	2.5	ng/L		11/14/20 04:46	11/14/20 19:59	1
8:2 FTS	<2.0		2.0	0.45	ng/L		11/14/20 04:46	11/14/20 19:59	1
10:2 FTS	<2.0		2.0	0.66	ng/L		11/14/20 04:46	11/14/20 19:59	1
DONA	<2.0		2.0	0.39	ng/L		11/14/20 04:46	11/14/20 19:59	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		11/14/20 04:46	11/14/20 19:59	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/14/20 04:46	11/14/20 19:59	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/14/20 04:46	11/14/20 19:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	54		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C5 PFPeA	50		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C2 PFHxA	65		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C4 PFHpA	73		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C4 PFOA	77		25 - 150	11/14/20 04:46	11/14/20 19:59	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U10 (11062020)

Lab Sample ID: 500-190770-10

Date Collected: 11/06/20 11:35

Matrix: Water

Date Received: 11/07/20 09:55

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	74		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C2 PFDA	67		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C2 PFUnA	58		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C2 PFDoA	39		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C2 PFTeDA	15	*5	25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C2 PFHxDA	10	*5	25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C3 PFBS	59		25 - 150	11/14/20 04:46	11/14/20 19:59	1
18O2 PFHxS	66		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C4 PFOS	64		25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C8 FOSA	45		25 - 150	11/14/20 04:46	11/14/20 19:59	1
d3-NMeFOSAA	65		25 - 150	11/14/20 04:46	11/14/20 19:59	1
d5-NEtFOSAA	60		25 - 150	11/14/20 04:46	11/14/20 19:59	1
d-N-MeFOSA-M	20		20 - 150	11/14/20 04:46	11/14/20 19:59	1
d-N-EtFOSA-M	13	*5	20 - 150	11/14/20 04:46	11/14/20 19:59	1
d7-N-MeFOSE-M	17		10 - 120	11/14/20 04:46	11/14/20 19:59	1
d9-N-EtFOSE-M	11		10 - 120	11/14/20 04:46	11/14/20 19:59	1
M2-4:2 FTS	125		25 - 150	11/14/20 04:46	11/14/20 19:59	1
M2-6:2 FTS	165	*5	25 - 150	11/14/20 04:46	11/14/20 19:59	1
M2-8:2 FTS	209	*5	25 - 150	11/14/20 04:46	11/14/20 19:59	1
13C3 HFPO-DA	55		25 - 150	11/14/20 04:46	11/14/20 19:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	2500		200	77	mg/L			11/13/20 12:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: DUP-03 (11062020)

Lab Sample ID: 500-190770-11

Date Collected: 11/06/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1300		480	230	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluoropentanoic acid (PFPeA)	4900		190	47	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorohexanoic acid (PFHxA)	5300		190	55	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluoroheptanoic acid (PFHpA)	2400		190	24	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorooctanoic acid (PFOA)	15000		190	81	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorononanoic acid (PFNA)	630		190	26	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorodecanoic acid (PFDA)	67	J	190	30	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluoroundecanoic acid (PFUnA)	<190		190	100	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorododecanoic acid (PFDoA)	<190		190	52	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorotridecanoic acid (PFTriA)	<190		190	120	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorotetradecanoic acid (PFTeA)	<190		190	70	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluoro-n-hexadecanoic acid (PFHxDA)	<190		190	85	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluoro-n-octadecanoic acid (PFODA)	<190		190	90	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorobutanesulfonic acid (PFBS)	<190		190	19	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluoropentanesulfonic acid (PFPeS)	<190		190	29	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorohexanesulfonic acid (PFHxS)	160	J	190	54	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluoroheptanesulfonic Acid (PFHpS)	<190		190	18	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorooctanesulfonic acid (PFOS)	890		190	51	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorononanesulfonic acid (PFNS)	<190		190	35	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorodecanesulfonic acid (PFDS)	<190		190	30	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorododecanesulfonic acid (PFDoS)	<190		190	92	ng/L		11/13/20 04:55	11/14/20 19:27	100
Perfluorooctanesulfonamide (FOSA)	<190		190	93	ng/L		11/13/20 04:55	11/14/20 19:27	100
NEtFOSA	<190		190	83	ng/L		11/13/20 04:55	11/14/20 19:27	100
NMeFOSA	<190		190	41	ng/L		11/13/20 04:55	11/14/20 19:27	100
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<480		480	110	ng/L		11/13/20 04:55	11/14/20 19:27	100
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<480		480	120	ng/L		11/13/20 04:55	11/14/20 19:27	100
NMeFOSE	<380		380	130	ng/L		11/13/20 04:55	11/14/20 19:27	100
NEtFOSE	<190		190	81	ng/L		11/13/20 04:55	11/14/20 19:27	100
4:2 FTS	390		190	23	ng/L		11/13/20 04:55	11/14/20 19:27	100
8:2 FTS	2100		190	44	ng/L		11/13/20 04:55	11/14/20 19:27	100
10:2 FTS	<190		190	64	ng/L		11/13/20 04:55	11/14/20 19:27	100
DONA	<190		190	38	ng/L		11/13/20 04:55	11/14/20 19:27	100
HFPO-DA (GenX)	<380		380	140	ng/L		11/13/20 04:55	11/14/20 19:27	100
F-53B Major	<190		190	23	ng/L		11/13/20 04:55	11/14/20 19:27	100
F-53B Minor	<190		190	30	ng/L		11/13/20 04:55	11/14/20 19:27	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	85		25 - 150				11/13/20 04:55	11/14/20 19:27	100
13C5 PFPeA	88		25 - 150				11/13/20 04:55	11/14/20 19:27	100
13C2 PFHxA	81		25 - 150				11/13/20 04:55	11/14/20 19:27	100
13C4 PFHpA	73		25 - 150				11/13/20 04:55	11/14/20 19:27	100
13C4 PFOA	78		25 - 150				11/13/20 04:55	11/14/20 19:27	100
13C5 PFNA	77		25 - 150				11/13/20 04:55	11/14/20 19:27	100

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Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: DUP-03 (11062020)

Lab Sample ID: 500-190770-11

Date Collected: 11/06/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFDA	87		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C2 PFUnA	79		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C2 PFDoA	72		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C2 PFTeDA	69		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C2 PFHxDA	50		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C3 PFBS	87		25 - 150	11/13/20 04:55	11/14/20 19:27	100
18O2 PFHxS	85		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C4 PFOS	98		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C8 FOSA	92		25 - 150	11/13/20 04:55	11/14/20 19:27	100
d3-NMeFOSAA	92		25 - 150	11/13/20 04:55	11/14/20 19:27	100
d5-NEtFOSAA	88		25 - 150	11/13/20 04:55	11/14/20 19:27	100
d-N-MeFOSA-M	63		20 - 150	11/13/20 04:55	11/14/20 19:27	100
d-N-EtFOSA-M	61		20 - 150	11/13/20 04:55	11/14/20 19:27	100
d7-N-MeFOSE-M	44		10 - 120	11/13/20 04:55	11/14/20 19:27	100
d9-N-EtFOSE-M	38		10 - 120	11/13/20 04:55	11/14/20 19:27	100
M2-4:2 FTS	101		25 - 150	11/13/20 04:55	11/14/20 19:27	100
M2-8:2 FTS	129		25 - 150	11/13/20 04:55	11/14/20 19:27	100
13C3 HFPO-DA	73		25 - 150	11/13/20 04:55	11/14/20 19:27	100

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
6:2 FTS	32000		2400	1200	ng/L		11/13/20 04:55	11/17/20 12:00	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>			
M2-6:2 FTS	112		25 - 150	11/13/20 04:55	11/17/20 12:00	1			

General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Total Suspended Solids	55		5.0	1.9	mg/L			11/13/20 12:47	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-431326/1-A
Matrix: Water
Analysis Batch: 431580

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431326

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		11/13/20 04:55	11/14/20 03:04	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		11/13/20 04:55	11/14/20 03:04	1
NEtFOSA	<2.0		2.0	0.87	ng/L		11/13/20 04:55	11/14/20 03:04	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/13/20 04:55	11/14/20 03:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		11/13/20 04:55	11/14/20 03:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		11/13/20 04:55	11/14/20 03:04	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/13/20 04:55	11/14/20 03:04	1
NEtFOSE	<2.0		2.0	0.85	ng/L		11/13/20 04:55	11/14/20 03:04	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/13/20 04:55	11/14/20 03:04	1
6:2 FTS	<5.0		5.0	2.5	ng/L		11/13/20 04:55	11/14/20 03:04	1
8:2 FTS	<2.0		2.0	0.46	ng/L		11/13/20 04:55	11/14/20 03:04	1
10:2 FTS	<2.0		2.0	0.67	ng/L		11/13/20 04:55	11/14/20 03:04	1
DONA	<2.0		2.0	0.40	ng/L		11/13/20 04:55	11/14/20 03:04	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/13/20 04:55	11/14/20 03:04	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/13/20 04:55	11/14/20 03:04	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/13/20 04:55	11/14/20 03:04	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	90		25 - 150				11/13/20 04:55	11/14/20 03:04	1
13C5 PFPeA	93		25 - 150				11/13/20 04:55	11/14/20 03:04	1
13C2 PFHxA	93		25 - 150				11/13/20 04:55	11/14/20 03:04	1
13C4 PFHpA	91		25 - 150				11/13/20 04:55	11/14/20 03:04	1
13C4 PFOA	100		25 - 150				11/13/20 04:55	11/14/20 03:04	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: MB 320-431326/1-A
Matrix: Water
Analysis Batch: 431580

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431326

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFNA	92		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C2 PFDA	92		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C2 PFUnA	89		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C2 PFDoA	91		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C2 PFTeDA	104		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C2 PFHxDA	106		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C3 PFBS	92		25 - 150	11/13/20 04:55	11/14/20 03:04	1
18O2 PFHxS	96		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C4 PFOS	104		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C8 FOSA	97		25 - 150	11/13/20 04:55	11/14/20 03:04	1
d3-NMeFOSAA	89		25 - 150	11/13/20 04:55	11/14/20 03:04	1
d5-NEtFOSAA	104		25 - 150	11/13/20 04:55	11/14/20 03:04	1
d-N-MeFOSA-M	71		20 - 150	11/13/20 04:55	11/14/20 03:04	1
d-N-EtFOSA-M	57		20 - 150	11/13/20 04:55	11/14/20 03:04	1
d7-N-MeFOSE-M	30		10 - 120	11/13/20 04:55	11/14/20 03:04	1
d9-N-EtFOSE-M	23		10 - 120	11/13/20 04:55	11/14/20 03:04	1
M2-4:2 FTS	88		25 - 150	11/13/20 04:55	11/14/20 03:04	1
M2-6:2 FTS	89		25 - 150	11/13/20 04:55	11/14/20 03:04	1
M2-8:2 FTS	92		25 - 150	11/13/20 04:55	11/14/20 03:04	1
13C3 HFPO-DA	83		25 - 150	11/13/20 04:55	11/14/20 03:04	1

Lab Sample ID: LCS 320-431326/2-A
Matrix: Water
Analysis Batch: 431580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	39.5		ng/L		99	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	44.5		ng/L		111	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	42.3		ng/L		106	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	39.0		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	40.0	47.4		ng/L		119	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	43.0		ng/L		107	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	39.5		ng/L		99	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	39.3		ng/L		98	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	42.0		ng/L		105	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	45.9		ng/L		115	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	43.4		ng/L		109	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	52.5		ng/L		131	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	37.1		ng/L		105	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	42.2		ng/L		113	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.5		ng/L		103	59 - 119

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: LCS 320-431326/2-A
Matrix: Water
Analysis Batch: 431580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.2		ng/L		113	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	41.6		ng/L		112	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	41.2		ng/L		107	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	40.3		ng/L		105	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	38.8		ng/L		100	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	44.3		ng/L		111	73 - 133
NMeFOSA	40.0	41.2		ng/L		103	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	40.3		ng/L		101	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	42.9		ng/L		107	76 - 136
NMeFOSE	40.0	45.0		ng/L		113	70 - 130
NEtFOSE	40.0	36.6		ng/L		91	71 - 131
4:2 FTS	37.4	40.8		ng/L		109	79 - 139
6:2 FTS	37.9	37.3		ng/L		98	59 - 175
8:2 FTS	38.3	37.3		ng/L		97	75 - 135
10:2 FTS	38.6	33.7		ng/L		87	64 - 142
DONA	37.7	40.1		ng/L		106	79 - 139
HFPO-DA (GenX)	40.0	45.4		ng/L		114	51 - 173
F-53B Major	37.3	37.1		ng/L		99	75 - 135
F-53B Minor	37.7	41.4		ng/L		110	54 - 114

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	97		25 - 150
13C5 PFPeA	96		25 - 150
13C2 PFHxA	95		25 - 150
13C4 PFHpA	101		25 - 150
13C4 PFOA	98		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	99		25 - 150
13C2 PFUnA	97		25 - 150
13C2 PFDoA	108		25 - 150
13C2 PFTeDA	105		25 - 150
13C2 PFHxDA	108		25 - 150
13C3 PFBS	95		25 - 150
18O2 PFHxS	102		25 - 150
13C4 PFOS	102		25 - 150
13C8 FOSA	102		25 - 150
d3-NMeFOSAA	88		25 - 150
d5-NEtFOSAA	90		25 - 150
d-N-MeFOSA-M	77		20 - 150
d-N-EtFOSA-M	60		20 - 150
d7-N-MeFOSE-M	31		10 - 120
d9-N-EtFOSE-M	26		10 - 120
M2-4:2 FTS	87		25 - 150

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: LCS 320-431326/2-A
Matrix: Water
Analysis Batch: 431580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431326

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
M2-6:2 FTS	88		25 - 150
M2-8:2 FTS	106		25 - 150
13C3 HFPO-DA	86		25 - 150

Lab Sample ID: 500-190770-2 MS
Matrix: Water
Analysis Batch: 431580

Client Sample ID: GW-U02 (11062020)
Prep Type: Total/NA
Prep Batch: 431326

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Perfluorobutanoic acid (PFBA)	250		39.1	325	4	ng/L		196	76 - 136
Perfluoroheptanoic acid (PFHpA)	270		39.1	360	4	ng/L		227	72 - 132
Perfluorononanoic acid (PFNA)	140	F1	39.1	223	F1	ng/L		209	75 - 135
Perfluorodecanoic acid (PFDA)	4.2		39.1	41.0		ng/L		94	76 - 136
Perfluoroundecanoic acid (PFUnA)	1.6	J	39.1	45.5		ng/L		112	68 - 128
Perfluorododecanoic acid (PFDoA)	<1.9		39.1	43.9		ng/L		112	71 - 131
Perfluorotridecanoic acid (PFTriA)	<1.9		39.1	33.5		ng/L		86	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<1.9		39.1	47.9		ng/L		122	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		39.1	39.4		ng/L		101	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		39.1	47.3		ng/L		121	58 - 145
Perfluorobutanesulfonic acid (PFBS)	3.9		34.6	42.5		ng/L		112	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	4.9		36.7	45.0		ng/L		109	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	65	F1	35.6	116	F1	ng/L		143	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	2.8		37.2	40.0		ng/L		100	76 - 136
Perfluorooctanesulfonic acid (PFOS)	110	F1	36.3	161	F1	ng/L		144	70 - 130
Perfluorononanesulfonic acid (PFNS)	<1.9		37.5	40.5		ng/L		108	75 - 135
Perfluorodecanesulfonic acid (PFDS)	<1.9		37.7	37.4		ng/L		99	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	<1.9		37.8	32.8		ng/L		87	67 - 127
Perfluorooctanesulfonamide (FOSA)	6.1		39.1	52.0		ng/L		117	73 - 133
NMeFOSA	<1.9		39.1	40.2		ng/L		103	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		39.1	40.5		ng/L		104	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.4	J	39.1	46.8		ng/L		111	76 - 136
NMeFOSE	<3.7		39.1	42.6		ng/L		109	70 - 130
NEtFOSE	<1.9		39.1	42.0		ng/L		107	71 - 131
4:2 FTS	110	F1	36.5	172	F1	ng/L		173	79 - 139
8:2 FTS	130	F1	37.5	171		ng/L		120	75 - 135
10:2 FTS	<1.9	F1	37.7	19.8	F1	ng/L		52	64 - 142

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: 500-190770-2 MSD

Client Sample ID: GW-U02 (11062020)

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 431580

Prep Batch: 431326

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoropentanesulfonic acid (PFPeS)	4.9		37.0	43.0		ng/L		103	66 - 126	5	30
Perfluorohexanesulfonic acid (PFHxS)	65	F1	35.9	120	F1	ng/L		152	59 - 119	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	2.8		37.6	39.3		ng/L		97	76 - 136	2	30
Perfluorooctanesulfonic acid (PFOS)	110	F1	36.6	156		ng/L		129	70 - 130	3	30
Perfluorononanesulfonic acid (PFNS)	<1.9		37.9	35.4		ng/L		94	75 - 135	13	30
Perfluorodecanesulfonic acid (PFDS)	<1.9		38.0	34.7		ng/L		91	71 - 131	7	30
Perfluorododecanesulfonic acid (PFDoS)	<1.9		38.2	30.4		ng/L		80	67 - 127	8	30
Perfluorooctanesulfonamide (FOSA)	6.1		39.4	50.5		ng/L		112	73 - 133	3	30
NMeFOSA	<1.9		39.4	41.1		ng/L		104	67 - 154	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		39.4	41.5		ng/L		105	76 - 136	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.4	J	39.4	45.1		ng/L		106	76 - 136	4	30
NMeFOSE	<3.7		39.4	42.3		ng/L		107	70 - 130	1	30
NEtFOSE	<1.9		39.4	43.2		ng/L		109	71 - 131	3	30
4:2 FTS	110	F1	36.8	171	F1	ng/L		169	79 - 139	0	30
8:2 FTS	130	F1	37.8	179	F1	ng/L		140	75 - 135	5	30
10:2 FTS	<1.9	F1	38.0	21.2	F1	ng/L		56	64 - 142	7	30
DONA	<1.9		37.2	38.4		ng/L		103	79 - 139	7	30
HFPO-DA (GenX)	<3.7		39.4	43.7		ng/L		111	51 - 173	2	30
F-53B Major	<1.9		36.8	34.9		ng/L		95	75 - 135	0	30
F-53B Minor	<1.9		37.2	34.9		ng/L		94	54 - 114	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA	65		25 - 150
13C4 PFHpA	63		25 - 150
13C5 PFNA	62		25 - 150
13C2 PFDA	66		25 - 150
13C2 PFUnA	58		25 - 150
13C2 PFDoA	60		25 - 150
13C2 PFTeDA	59		25 - 150
13C2 PFHxDA	58		25 - 150
13C3 PFBS	65		25 - 150
18O2 PFHxS	61		25 - 150
13C4 PFOS	64		25 - 150
13C8 FOSA	63		25 - 150
d3-NMeFOSAA	75		25 - 150
d5-NEtFOSAA	60		25 - 150
d-N-MeFOSA-M	53		20 - 150
d-N-EtFOSA-M	49		20 - 150
d7-N-MeFOSE-M	39		10 - 120
d9-N-EtFOSE-M	37		10 - 120
M2-4:2 FTS	65		25 - 150

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: 500-190770-2 MSD
Matrix: Water
Analysis Batch: 431580

Client Sample ID: GW-U02 (11062020)
Prep Type: Total/NA
Prep Batch: 431326

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
M2-8:2 FTS	102		25 - 150
13C3 HFPO-DA	56		25 - 150

Lab Sample ID: MB 320-431737/1-A
Matrix: Water
Analysis Batch: 431886

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 431737

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		11/14/20 04:46	11/14/20 16:15	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		11/14/20 04:46	11/14/20 16:15	1
NEtFOSA	<2.0		2.0	0.87	ng/L		11/14/20 04:46	11/14/20 16:15	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/14/20 04:46	11/14/20 16:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		11/14/20 04:46	11/14/20 16:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		11/14/20 04:46	11/14/20 16:15	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/14/20 04:46	11/14/20 16:15	1
NEtFOSE	<2.0		2.0	0.85	ng/L		11/14/20 04:46	11/14/20 16:15	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/14/20 04:46	11/14/20 16:15	1
6:2 FTS	<5.0		5.0	2.5	ng/L		11/14/20 04:46	11/14/20 16:15	1
8:2 FTS	<2.0		2.0	0.46	ng/L		11/14/20 04:46	11/14/20 16:15	1
10:2 FTS	<2.0		2.0	0.67	ng/L		11/14/20 04:46	11/14/20 16:15	1
DONA	<2.0		2.0	0.40	ng/L		11/14/20 04:46	11/14/20 16:15	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/14/20 04:46	11/14/20 16:15	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/14/20 04:46	11/14/20 16:15	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/14/20 04:46	11/14/20 16:15	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

<i>Isotope Dilution</i>	<i>MB</i>	<i>MB</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>%Recovery</i>	<i>Qualifier</i>				
13C4 PFBA	78		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C5 PFPeA	81		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C2 PFHxA	85		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C4 PFHpA	89		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C4 PFOA	93		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C5 PFNA	87		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C2 PFDA	89		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C2 PFUnA	87		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C2 PFDoA	86		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C2 PFTeDA	86		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C2 PFHxDA	82		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C3 PFBS	83		25 - 150	11/14/20 04:46	11/14/20 16:15	1
18O2 PFHxS	88		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C4 PFOS	87		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C8 FOSA	85		25 - 150	11/14/20 04:46	11/14/20 16:15	1
d3-NMeFOSAA	65		25 - 150	11/14/20 04:46	11/14/20 16:15	1
d5-NEtFOSAA	72		25 - 150	11/14/20 04:46	11/14/20 16:15	1
d-N-MeFOSA-M	64		20 - 150	11/14/20 04:46	11/14/20 16:15	1
d-N-EtFOSA-M	49		20 - 150	11/14/20 04:46	11/14/20 16:15	1
d7-N-MeFOSE-M	33		10 - 120	11/14/20 04:46	11/14/20 16:15	1
d9-N-EtFOSE-M	29		10 - 120	11/14/20 04:46	11/14/20 16:15	1
M2-4:2 FTS	77		25 - 150	11/14/20 04:46	11/14/20 16:15	1
M2-6:2 FTS	84		25 - 150	11/14/20 04:46	11/14/20 16:15	1
M2-8:2 FTS	94		25 - 150	11/14/20 04:46	11/14/20 16:15	1
13C3 HFPO-DA	77		25 - 150	11/14/20 04:46	11/14/20 16:15	1

Lab Sample ID: LCS 320-431737/2-A
Matrix: Water
Analysis Batch: 431886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431737
%Rec.

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
Perfluorobutanoic acid (PFBA)	40.0	47.4		ng/L		118	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	44.2		ng/L		110	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	44.4		ng/L		111	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	45.8		ng/L		115	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	41.4		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	40.0	44.3		ng/L		111	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	46.5		ng/L		116	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	51.0		ng/L		128	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	44.6		ng/L		111	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	49.6		ng/L		124	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	47.8		ng/L		120	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	44.0		ng/L		110	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	47.3		ng/L		118	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	40.8		ng/L		115	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	46.9		ng/L		125	66 - 126

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: LCS 320-431737/2-A
Matrix: Water
Analysis Batch: 431886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431737

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.7		ng/L		106	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	45.3		ng/L		119	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	41.9		ng/L		113	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	41.9		ng/L		109	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	42.5		ng/L		110	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	40.5		ng/L		105	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	48.4		ng/L		121	73 - 133
NMeFOSA	40.0	44.4		ng/L		111	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	48.7		ng/L		122	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	44.0		ng/L		110	76 - 136
NMeFOSE	40.0	41.1		ng/L		103	70 - 130
NEtFOSE	40.0	45.3		ng/L		113	71 - 131
4:2 FTS	37.4	42.8		ng/L		115	79 - 139
6:2 FTS	37.9	39.1		ng/L		103	59 - 175
8:2 FTS	38.3	45.4		ng/L		118	75 - 135
10:2 FTS	38.6	48.7		ng/L		126	64 - 142
DONA	37.7	43.2		ng/L		115	79 - 139
HFPO-DA (GenX)	40.0	47.1		ng/L		118	51 - 173
F-53B Major	37.3	42.3		ng/L		113	75 - 135
F-53B Minor	37.7	41.0		ng/L		109	54 - 114

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	75		25 - 150
13C5 PFPeA	79		25 - 150
13C2 PFHxA	82		25 - 150
13C4 PFHpA	85		25 - 150
13C4 PFOA	91		25 - 150
13C5 PFNA	87		25 - 150
13C2 PFDA	85		25 - 150
13C2 PFUnA	80		25 - 150
13C2 PFDoA	84		25 - 150
13C2 PFTeDA	81		25 - 150
13C2 PFHxDA	79		25 - 150
13C3 PFBS	80		25 - 150
18O2 PFHxS	86		25 - 150
13C4 PFOS	84		25 - 150
13C8 FOSA	76		25 - 150
d3-NMeFOSAA	62		25 - 150
d5-NEtFOSAA	67		25 - 150
d-N-MeFOSA-M	58		20 - 150
d-N-EtFOSA-M	43		20 - 150
d7-N-MeFOSE-M	25		10 - 120

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: LCS 320-431737/2-A
Matrix: Water
Analysis Batch: 431886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 431737

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>d9-N-EtFOSE-M</i>	21		10 - 120
<i>M2-4:2 FTS</i>	76		25 - 150
<i>M2-6:2 FTS</i>	77		25 - 150
<i>M2-8:2 FTS</i>	84		25 - 150
<i>13C3 HFPO-DA</i>	75		25 - 150

Lab Sample ID: LCSD 320-431737/3-A
Matrix: Water
Analysis Batch: 431886

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 431737

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	45.2		ng/L		113	76 - 136	5	30
Perfluoropentanoic acid (PFPeA)	40.0	41.9		ng/L		105	71 - 131	5	30
Perfluorohexanoic acid (PFHxA)	40.0	45.1		ng/L		113	73 - 133	2	30
Perfluoroheptanoic acid (PFHpA)	40.0	44.5		ng/L		111	72 - 132	3	30
Perfluorooctanoic acid (PFOA)	40.0	41.3		ng/L		103	70 - 130	0	30
Perfluorononanoic acid (PFNA)	40.0	44.7		ng/L		112	75 - 135	1	30
Perfluorodecanoic acid (PFDA)	40.0	46.6		ng/L		116	76 - 136	0	30
Perfluoroundecanoic acid (PFUnA)	40.0	48.0		ng/L		120	68 - 128	6	30
Perfluorododecanoic acid (PFDoA)	40.0	43.8		ng/L		109	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)	40.0	47.7		ng/L		119	71 - 131	4	30
Perfluorotetradecanoic acid (PFTeA)	40.0	49.2		ng/L		123	70 - 130	3	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	43.0		ng/L		107	76 - 136	2	30
Perfluoro-n-octadecanoic acid (PFODA)	40.0	46.9		ng/L		117	58 - 145	1	30
Perfluorobutanesulfonic acid (PFBS)	35.4	40.7		ng/L		115	67 - 127	0	30
Perfluoropentanesulfonic acid (PFPeS)	37.5	46.3		ng/L		123	66 - 126	1	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.3		ng/L		105	59 - 119	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.2		ng/L		113	76 - 136	5	30
Perfluorooctanesulfonic acid (PFOS)	37.1	41.3		ng/L		111	70 - 130	1	30
Perfluorononanesulfonic acid (PFNS)	38.4	42.1		ng/L		110	75 - 135	0	30
Perfluorodecanesulfonic acid (PFDS)	38.6	43.3		ng/L		112	71 - 131	2	30
Perfluorododecanesulfonic acid (PFDoS)	38.7	38.9		ng/L		101	67 - 127	4	30
Perfluorooctanesulfonamide (FOSA)	40.0	46.5		ng/L		116	73 - 133	4	30
NMeFOSA	40.0	46.8		ng/L		117	67 - 154	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	47.1		ng/L		118	76 - 136	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	46.6		ng/L		117	76 - 136	6	30

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: LCSD 320-431737/3-A
Matrix: Water
Analysis Batch: 431886

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 431737

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
NMeFOSE	40.0	40.7		ng/L		102	70 - 130	1	30
NEtFOSE	40.0	40.5		ng/L		101	71 - 131	11	30
4:2 FTS	37.4	44.9		ng/L		120	79 - 139	5	30
6:2 FTS	37.9	37.1		ng/L		98	59 - 175	5	30
8:2 FTS	38.3	41.0		ng/L		107	75 - 135	10	30
10:2 FTS	38.6	43.5		ng/L		113	64 - 142	11	30
DONA	37.7	43.0		ng/L		114	79 - 139	1	30
HFPO-DA (GenX)	40.0	45.3		ng/L		113	51 - 173	4	30
F-53B Major	37.3	42.3		ng/L		113	75 - 135	0	30
F-53B Minor	37.7	41.2		ng/L		109	54 - 114	0	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C4 PFBA	71		25 - 150
13C5 PFPeA	74		25 - 150
13C2 PFHxA	77		25 - 150
13C4 PFHpA	81		25 - 150
13C4 PFOA	82		25 - 150
13C5 PFNA	80		25 - 150
13C2 PFDA	77		25 - 150
13C2 PFUnA	78		25 - 150
13C2 PFDoA	78		25 - 150
13C2 PFTeDA	75		25 - 150
13C2 PFHxDA	73		25 - 150
13C3 PFBS	75		25 - 150
18O2 PFHxS	80		25 - 150
13C4 PFOS	78		25 - 150
13C8 FOSA	72		25 - 150
d3-NMeFOSAA	58		25 - 150
d5-NEtFOSAA	60		25 - 150
d-N-MeFOSA-M	51		20 - 150
d-N-EtFOSA-M	39		20 - 150
d7-N-MeFOSE-M	25		10 - 120
d9-N-EtFOSE-M	21		10 - 120
M2-4:2 FTS	63		25 - 150
M2-6:2 FTS	74		25 - 150
M2-8:2 FTS	82		25 - 150
13C3 HFPO-DA	72		25 - 150

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

Lab Sample ID: 500-190770-2 MS
Matrix: Water
Analysis Batch: 431897

Client Sample ID: GW-U02 (11062020)
Prep Type: Total/NA
Prep Batch: 431326

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA) - DL	920		39.1	1080	4	ng/L		409	71 - 131
Perfluorohexanoic acid (PFHxA) - DL	750		39.1	934	4	ng/L		462	73 - 133

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Lab Sample ID: 500-190770-2 MS

Matrix: Water

Analysis Batch: 431897

Client Sample ID: GW-U02 (11062020)

Prep Type: Total/NA

Prep Batch: 431326

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanoic acid (PFOA) - DL	1200		39.1	1470	4	ng/L		578	70 - 130
6:2 FTS - DL	6900		37.1	6850	4	ng/L		-8	59 - 175
		MS MS							
Isotope Dilution	%Recovery	Qualifier	Limits						
13C5 PFPeA - DL	54		25 - 150						
13C2 PFHxA - DL	49		25 - 150						
13C4 PFOA - DL	50		25 - 150						
M2-6:2 FTS - DL	110		25 - 150						

Lab Sample ID: 500-190770-2 MSD

Matrix: Water

Analysis Batch: 431897

Client Sample ID: GW-U02 (11062020)

Prep Type: Total/NA

Prep Batch: 431326

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Perfluoropentanoic acid (PFPeA) - DL	920		39.4	1080	4	ng/L		402	71 - 131	0	30
Perfluorohexanoic acid (PFHxA) - DL	750		39.4	940	4	ng/L		473	73 - 133	1	30
Perfluorooctanoic acid (PFOA) - DL	1200		39.4	1470	4	ng/L		573	70 - 130	0	30
6:2 FTS - DL	6900		37.4	7530	4	ng/L		1803	59 - 175	9	30
		MSD MSD									
Isotope Dilution	%Recovery	Qualifier	Limits								
13C5 PFPeA - DL	57		25 - 150								
13C2 PFHxA - DL	49		25 - 150								
13C4 PFOA - DL	50		25 - 150								
M2-6:2 FTS - DL	101		25 - 150								

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 500-571693/2-A

Matrix: Water

Analysis Batch: 571916

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 571693

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.960		mg/L		96	80 - 120

Lab Sample ID: MB 500-571692/1-A

Matrix: Water

Analysis Batch: 571916

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 571692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.20		0.20	0.082	mg/L		11/12/20 07:34	11/12/20 21:08	1

Lab Sample ID: LCS 500-571692/2-A

Matrix: Water

Analysis Batch: 571916

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 571692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	1.05		mg/L		105	80 - 120

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-571221/1-F
 Matrix: Water
 Analysis Batch: 571916

Client Sample ID: Method Blank
 Prep Type: Dissolved
 Prep Batch: 571693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.20		0.20	0.082	mg/L		11/12/20 07:36	11/12/20 20:58	1

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-571809/32
 Matrix: Water
 Analysis Batch: 571809

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.47	mg/L			11/11/20 20:20	1

Lab Sample ID: LCS 500-571809/33
 Matrix: Water
 Analysis Batch: 571809

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.0		mg/L		100	80 - 120

Method: 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 500-572615/1-A
 Matrix: Water
 Analysis Batch: 572802

Client Sample ID: Method Blank
 Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	<1.0		1.0	0.47	mg/L			11/17/20 17:46	1

Lab Sample ID: LCS 500-572615/2-A
 Matrix: Water
 Analysis Batch: 572802

Client Sample ID: Lab Control Sample
 Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon - Duplicate	10.0	10.8		mg/L		108	80 - 120

Lab Sample ID: LCSD 500-572615/3-A
 Matrix: Water
 Analysis Batch: 572802

Client Sample ID: Lab Control Sample Dup
 Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon - Duplicate	10.0	11.0		mg/L		110	80 - 120	3	20

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-572284/3
Matrix: Water
Analysis Batch: 572284

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity	<5.0		5.0	3.7	mg/L			11/14/20 11:39	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 11:39	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	3.7	mg/L			11/14/20 11:39	1

Lab Sample ID: LCS 500-572284/4
Matrix: Water
Analysis Batch: 572284

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-572024/1
Matrix: Water
Analysis Batch: 572024

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	<5.0		5.0	1.9	mg/L			11/13/20 12:25	1

Lab Sample ID: LCS 500-572024/2
Matrix: Water
Analysis Batch: 572024

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 500-190770-2 MS
Matrix: Water
Analysis Batch: 572024

Client Sample ID: GW-U02 (11062020)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 500-190770-2 MSD
Matrix: Water
Analysis Batch: 572024

Client Sample ID: GW-U02 (11062020)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U01 (11062020)
Date Collected: 11/06/20 08:20
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190770-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		1	431580	11/14/20 03:23	RS1	TAL SAC

Client Sample ID: GW-U02 (11062020)
Date Collected: 11/06/20 08:30
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190770-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		1	431580	11/14/20 03:32	RS1	TAL SAC
Total/NA	Prep	3535	DL		431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50	431897	11/14/20 18:50	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024	(Start) 11/13/20 12:36 (End) 11/13/20 12:37	SMO	TAL CHI

Client Sample ID: GW-U03 (11062020)
Date Collected: 11/06/20 08:55
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190770-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		100	431897	11/14/20 19:18	RS1	TAL SAC
Total/NA	Prep	3535	DL		431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Cleanup	Dilution	DL		432432	11/17/20 06:56	AJM	TAL SAC
Total/NA	Analysis	537 (modified)	DL	1	432501	11/17/20 11:51	D1R	TAL SAC
Dissolved	Filtration	FILTRATION			571221	11/10/20 08:06	LMN	TAL CHI
Dissolved	Prep	3010A			571693	11/12/20 07:36	LMN	TAL CHI
Dissolved	Analysis	6010C		1	571916	11/12/20 21:05	JEF	TAL CHI
Total Recoverable	Prep	3005A			571692	11/12/20 07:34	LMN	TAL CHI
Total Recoverable	Analysis	6010C		1	571916	11/12/20 21:32	JEF	TAL CHI
Dissolved	Analysis	9060A		1	572802	(Start) 11/17/20 00:49 (End) 11/18/20 01:29	TMS	TAL CHI
Dissolved	Filtration	FILTRATION			572615	11/17/20 13:32	JJB	TAL CHI
Total/NA	Analysis	9060A		1	571809	11/11/20 22:27	JJB	TAL CHI
Total/NA	Analysis	SM 2320B		1	572284	11/14/20 14:53	SMO	TAL CHI
Total/NA	Analysis	SM 2540D		1	572024	(Start) 11/13/20 12:39 (End) 11/13/20 12:40	SMO	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U04 (11062020)
Date Collected: 11/06/20 09:25
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190770-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431737	11/14/20 04:46	EG	TAL SAC
Total/NA	Analysis	537 (modified)		100	432932	11/17/20 19:55	IK	TAL SAC
Total/NA	Prep	3535	DL		431737	11/14/20 04:46	EG	TAL SAC
Total/NA	Cleanup	Dilution	DL		433048	11/18/20 13:02	IK	TAL SAC
Total/NA	Analysis	537 (modified)	DL	1	433053	11/18/20 17:04	IK	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:40		
					(End)	11/13/20 12:41		

Client Sample ID: GW-U05 (11062020)
Date Collected: 11/06/20 10:20
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190770-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		1	431580	11/14/20 04:08	RS1	TAL SAC
Total/NA	Prep	3535	DL		431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5	431897	11/14/20 18:23	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:41		
					(End)	11/13/20 12:42		

Client Sample ID: GW-U06 (11062020)
Date Collected: 11/06/20 10:30
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190770-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		1	431580	11/14/20 04:17	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:42		
					(End)	11/13/20 12:43		

Client Sample ID: GW-U07 (11062020)
Date Collected: 11/06/20 10:50
Date Received: 11/07/20 09:55

Lab Sample ID: 500-190770-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		1	431580	11/14/20 04:26	RS1	TAL SAC
Total/NA	Prep	3535	DL		431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)	DL	2	431897	11/14/20 18:32	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:43		
					(End)	11/13/20 12:44		

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Client Sample ID: GW-U08 (11062020)

Lab Sample ID: 500-190770-8

Date Collected: 11/06/20 11:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431737	11/14/20 04:46	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431886	11/14/20 19:31	K1S	TAL SAC
Total/NA	Prep	3535	DL		431737	11/14/20 04:46	EG	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	432078	11/16/20 10:35	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:44		
					(End)	11/13/20 12:45		

Client Sample ID: GW-U09 (11062020)

Lab Sample ID: 500-190770-9

Date Collected: 11/06/20 11:15

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		1	431580	11/14/20 04:54	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:45		
					(End)	11/13/20 12:46		

Client Sample ID: GW-U10 (11062020)

Lab Sample ID: 500-190770-10

Date Collected: 11/06/20 11:35

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431737	11/14/20 04:46	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	431886	11/14/20 19:59	K1S	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:46		
					(End)	11/13/20 12:47		

Client Sample ID: DUP-03 (11062020)

Lab Sample ID: 500-190770-11

Date Collected: 11/06/20 00:00

Matrix: Water

Date Received: 11/07/20 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Analysis	537 (modified)		100	431897	11/14/20 19:27	RS1	TAL SAC
Total/NA	Prep	3535	DL		431326	11/13/20 04:55	LB	TAL SAC
Total/NA	Cleanup	Dilution	DL		432432	11/17/20 06:56	AJM	TAL SAC
Total/NA	Analysis	537 (modified)	DL	1	432501	11/17/20 12:00	D1R	TAL SAC
Total/NA	Analysis	SM 2540D		1	572024		SMO	TAL CHI
					(Start)	11/13/20 12:47		
					(End)	11/13/20 12:48		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

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Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

Laboratory: Eurofins TestAmerica, Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-21

Fredrick, Sandie

From: Rutkowski, Lisa <Lisa.Rutkowski@arcadis.com>
Sent: Tuesday, November 17, 2020 8:27 AM
To: Fredrick, Sandie
Subject: RE: Complex Dilution Request for PFC_IDA Job 500-190770 samples 3 & 11

EXTERNAL EMAIL*

Yes, please run complex dilution. Thanks!

From: Fredrick, Sandie <Sandra.Fredrick@Eurofinset.com>
Sent: Tuesday, November 17, 2020 8:16 AM
To: Rutkowski, Lisa <Lisa.Rutkowski@arcadis.com>
Subject: FW: Complex Dilution Request for PFC_IDA Job 500-190770 samples 3 & 11
Importance: High

Hi Lisa,
Please see below. Are we running the complex dilution on this one?
These were requested for TAT of Thursday, so need to know quickly.
Thanks,
Sandie

Please note our adjusted hours for Thanksgiving >>

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

We are thankful for your business and hope that you have a wonderful day!

Sandie Fredrick
Project Manager

Eurofins TestAmerica
2417 Bond Street
University Park, IL 60484 USA

Phone: 920-261-1660
E-mail: sandra.fredrick@eurofinset.com

www.EurofinsUS.com | www.TestAmericainc.com | [Facebook](#) | [LinkedIn](#)

From: Vang, Mai Yee <MaiYee.Vang@Eurofinset.com>
Sent: Tuesday, November 17, 2020 7:49 AM
To: Fredrick, Sandie <Sandra.Fredrick@Eurofinset.com>

Cc: Sacramento-LCMS-Inst <Sacramento-LCMS-Inst@eurofinset.com>

Subject: Complex Dilution Request for PFC_IDA Job 500-190770 samples 3 & 11

Good Morning Sandie,

PFC_IDA job 500-190770, samples #3 and 11, M2-6:2 FTS has high percent recovery at the maximum 100 X dilution due to contribution from the native analyte. This in turn is producing a low bias to the native 6:2 FTS results. Please advise if the client would like to acquire a more accurate result via complex dilution (at an extra cost) or report with an NCM.

Sample	X over Calibration	Final Result (ng/L) for 6:2 FTS	IDA-M2-6:2 FTS %R
500-190770 sample #3	1.57	16,000	281%
500-190770 sample #11	1.75	17,000	302%

Thanks,

Mai Yee Vang

Analyst I

Eurofins TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

880 Riverside Parkway
West Sacramento, CA 95605

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Chain of Custody Record

Client Information		Sampler: AS, KK, SK		Lab PM: Fredrick, Sandie		Carrier Tracking No(s):		COC No: 500-86744-39116.8			
Client Contact: Elizabeth Hover		Phone:		E-Mail: sandra.fredrick@eurofinset.com				Page 1 of 1			
Company: ARCADIS U.S., Inc.		Due Date Requested:		Analysis Requested						Job #: 500-190770	
Address: 126 North Jefferson Street Suite 400		TAT Requested (days): Standard		Field Filtered Sample (Yes or No)		Performance/MSD (Yes or No)		2640D - TSS		Preservation Codes:	
City: Milwaukee		PC #: 30062361.00001		PFAS - PFAS, Extended List (36 Analytes)		9060A - TOC		2320B - Alkalinity (Total/Bicarb/Carb)		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)	
State, Zip: WI, 53202		W/O #		9060A - TOC		9010C - Total Iron		9060A_Diss - DOC		Other:	
Phone:		Project #: 50017363		9010C - Dissolved Iron						Total Number of Containers:	
Email: Elizabeth.Hover@arcadis.com 500-190770 COC		SSOW#									
Project Name: Marinette 30062361.00001											
Site: Marinette, WI											
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastewat, BT=Tissue, A=Air)		Special Instructions/Note:	
						Preservation Code:					
GW-U01 (11062020)		11/16/20		820		G		Water		No TSS, limited vol	
GW-U02 (11062020)				830				Water		MS/MSD	
GW-U03 (11062020)				855				Water			
GW-U04 (11062020)				925				Water			
GW-U05 (11062020)				1020				Water			
GW-U06 (11062020)				1030				Water			
GW-U07 (11062020)				1050				Water			
GW-U08 (11062020)				1100				Water			
GW-U09 (11062020)				1115				Water		Limited vol	
GW-U10 (11062020)				1135				Water			
DUP-03 (11062020)								Water		Duplicate	
Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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: Amy Sheffer		Date/Time: 11/16/20 1500		Company: Arcadis		Received by: [Signature]		Date/Time: 11/17/20 0955		Company: EPA-CERL	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Copper Temperature(s) °C and Other Remarks: 2.2 → 2.6, 2.3 → 2.7, 2.1 → 2.5, 1.7 → 1.8, 2.3 → 2.7, 1.5 → 1.6 0.9 → 1.0, 1.9 → 2.0, 1.1 → 1.2, 0.0 → 0.1, 1.3 → 1.4							

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ORIGIN ID:RRLA (262) 202-5955
GUEST: AMY PARISH
COUNTRY INN& SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 06OCT20
ACTWGT: 25.00 LB 1
CAD: 525155/CAFE34

MARINETTE, WI 54143
UNITED STATES US

TO

**TESTAMERICA CHICAGO
2417 BOND STREET**



500-19C770 Wayb

UNIVERSITY PARK IL 60484-3101

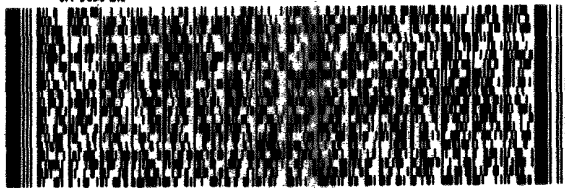
(708) 684-6200

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ORIGIN ID:RRLA (262) 202-5955
GUEST: AMY PARISH
COUNTRY INN& SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 06OCT20
ACTWGT: 25.00 LB 1
CAD: 525155/CAFE3408

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UNITED STATES US

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**TESTAMERICA CHICAGO
2417 BOND STREET**

UNIVERSITY PARK IL 60484-3101

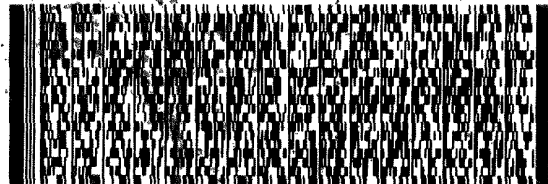
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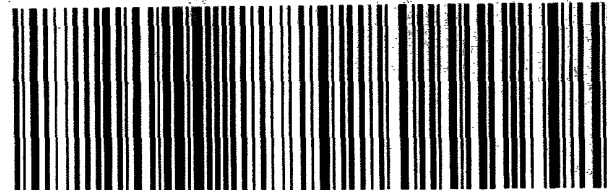
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FID: 832374 06Nov2020 GRBA 560G3/51DB/05A2

ORIGIN ID:PHDA (330) 966-9677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
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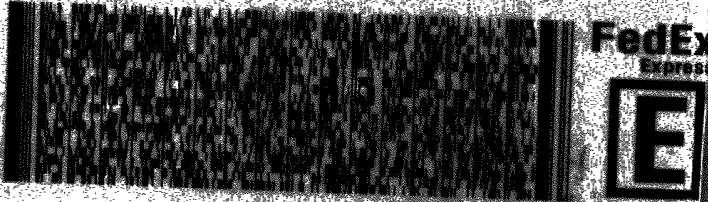
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ORIGIN ID:PHDA (330) 966-9677
GUEST: AMY PARISH
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
ACTWGT: 10.00 LB
CAD: 0562071/CAFE3406

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UNITED STATES US

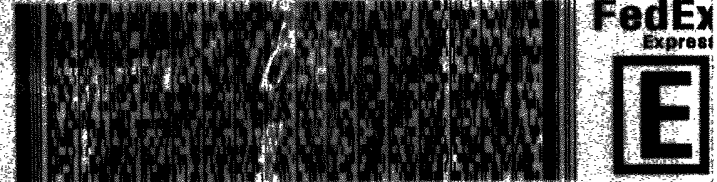
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2417 BOND STREET

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(708) 634-5200
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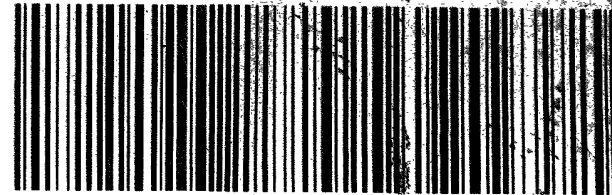


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GUEST: AMY PARISH
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2020 OLD PESHTIGO RD

SHIP DATE: 24SEP20
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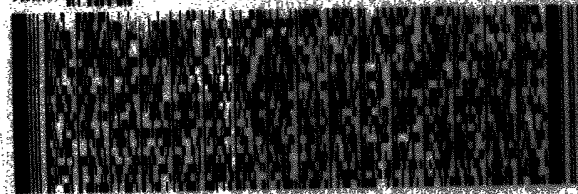
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ORIGIN ID: RRLA (262) 202-5955
GUEST: KAEALYN BLOTZ
COUNTRY INN & SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

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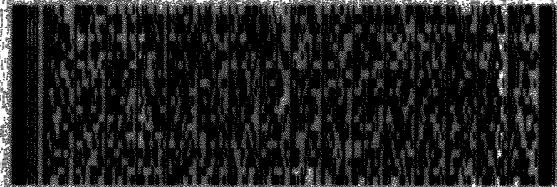
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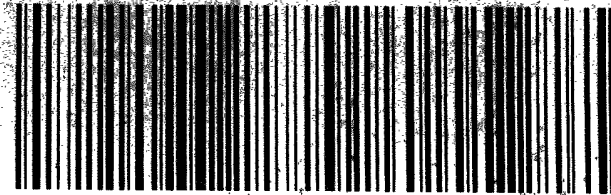


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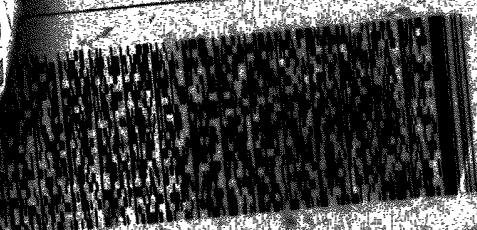


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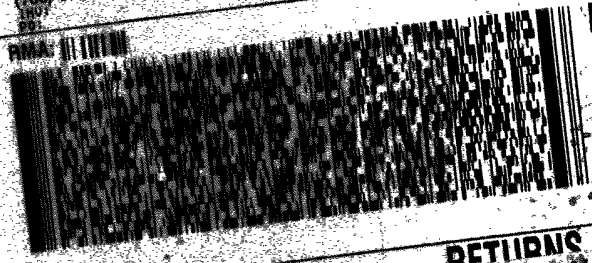
FID: 832374 06Nov2020 GRBA 560G3/51D8/05A2

ORIGIN ID: RRLA (262) 202-5955
GUEST: KAELYN BLOTZ
COUNTRY INN& SUITES
2020 OLD PESHTIGD. CT.
MARINETTE, WI 54143
UNITED STATES US

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3406

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ORIGIN ID:RRLA (262) 202-5955
GUEST: KAELYN BLOTZ
COUNTRY INN & SUITES
2020 OLD PESHTIGO CT.

SHIP DATE: 30OCT20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE340

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2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(708) 584-5200

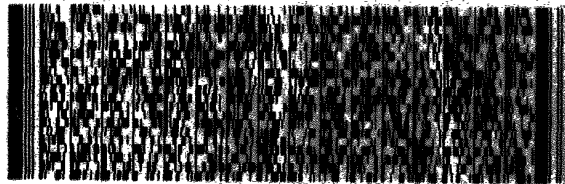
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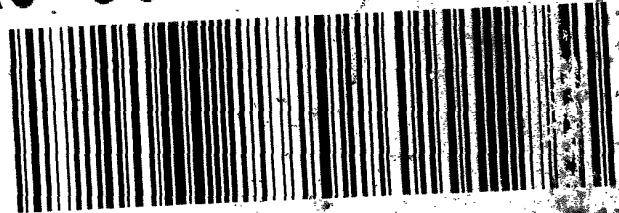
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SATURDAY 12:00P
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60484
IL-US
ORD

X0 JOTA



FID: 832374 06Nov2020 GRBA 560G3/51DB/05A2

ORIGIN ID:RRLA (262) 202-5955
GUEST: JEREMY HAMLIN
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD

SHIP DATE: 06MAR20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3211

MARINETTE, WI 54143
UNITED STATES US

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2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

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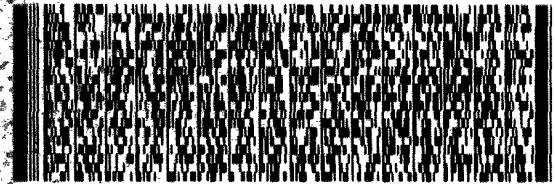
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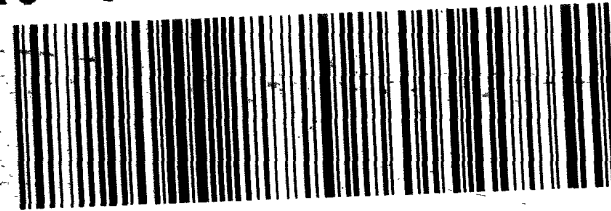
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FID: 832374 06Nov2020 GRBA 560G3/51DB/05A2



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0221

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD

X0 JOTA



F10-832874 86802828 5888 5803/5108/8582

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Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-190770-1

Login Number: 190770

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	
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	2.6,2.7,2.5,1.8,2.7,1.6,1.0,2.0,1.2,0.1,1.4
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.	True	
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: ARCADIS U.S., Inc.

Job Number: 500-190770-1

Login Number: 190770

List Number: 2

Creator: Saephan, Kae C

List Source: Eurofins TestAmerica, Sacramento

List Creation: 11/10/20 01:48 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	1363728/1363726/1363731/1363730
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: 2.1/0.7/1.0/2.3c corr: 1.6/0.8/1.1/2.4c
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	



500-190770 Field Sheet

Tracking #: 189344500866

SO PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other _____

Job: _____

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: AK-5 Corr. Factor: (+) 0.5 °C

Ice X Wet X Gel _____ Other _____

Cooler Custody Seal: 1363728

Cooler ID: 1 OF 4

Temp Observed: 2.1 °C Corrected: 1.6 °C
From: Temp Blank Sample

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooler Temperature is acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Initials: [Signature] Date: 11/10/20

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

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

Initials: [Signature] Date: 11/10/20

Notes: _____

Trizma Lot #(s): _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NCM Filed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Log Release checked in TALS?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initials: [Signature] Date: 11/10/20

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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)
500-190770-1	GW-U01 (11062020)	16 *5	25	24 *5	24 *5	26	22 *5	26	22 *5
500-190770-2	GW-U02 (11062020)	58			58		55	62	53
500-190770-2 - DL	GW-U02 (11062020)		51	50		52			
500-190770-2 MS	GW-U02 (11062020)	71			67		67	74	65
500-190770-2 MS - DL	GW-U02 (11062020)		54	49		50			
500-190770-2 MSD	GW-U02 (11062020)	65			63		62	66	58
500-190770-2 MSD - DL	GW-U02 (11062020)		57	49		50			
500-190770-3	GW-U03 (11062020)	69	65	64	63	62	69	58	64
500-190770-3 - DL	GW-U03 (11062020)								
500-190770-4	GW-U04 (11062020)	76	73	79	76	73	84	70	68
500-190770-4 - DL	GW-U04 (11062020)								
500-190770-5	GW-U05 (11062020)	56	61	57	56		56	59	57
500-190770-5 - DL	GW-U05 (11062020)					58			
500-190770-6	GW-U06 (11062020)	73	85	79	73	71	74	81	72
500-190770-7	GW-U07 (11062020)	44	40	40	41	41	38	44	39
500-190770-7 - DL	GW-U07 (11062020)								
500-190770-8	GW-U08 (11062020)	57	55	67	71	77	73	72	72
500-190770-8 - DL	GW-U08 (11062020)								
500-190770-9	GW-U09 (11062020)	38	38	36	36	37	33	34	32
500-190770-10	GW-U10 (11062020)	54	50	65	73	77	74	67	58
500-190770-11	DUP-03 (11062020)	85	88	81	73	78	77	87	79
500-190770-11 - DL	DUP-03 (11062020)								
LCS 320-431326/2-A	Lab Control Sample	97	96	95	101	98	93	99	97
LCS 320-431737/2-A	Lab Control Sample	75	79	82	85	91	87	85	80
LCS 320-431737/3-A	Lab Control Sample Dup	71	74	77	81	82	80	77	78
MB 320-431326/1-A	Method Blank	90	93	93	91	100	92	92	89
MB 320-431737/1-A	Method Blank	78	81	85	89	93	87	89	87

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
500-190770-1	GW-U01 (11062020)	21 *5	20 *5	20 *5	24 *5	23 *5	24 *5	26	23 *5
500-190770-2	GW-U02 (11062020)	59	52	50	56	63	59	57	69
500-190770-2 - DL	GW-U02 (11062020)								
500-190770-2 MS	GW-U02 (11062020)	65	59	64	66	71	67	71	76
500-190770-2 MS - DL	GW-U02 (11062020)								
500-190770-2 MSD	GW-U02 (11062020)	60	59	58	65	61	64	63	75
500-190770-2 MSD - DL	GW-U02 (11062020)								
500-190770-3	GW-U03 (11062020)	58	56	49	69	62	77	67	72
500-190770-3 - DL	GW-U03 (11062020)								
500-190770-4	GW-U04 (11062020)	67	58	31	74	68	62	60	95
500-190770-4 - DL	GW-U04 (11062020)						102		
500-190770-5	GW-U05 (11062020)	55	44	39	59	60	57	53	58
500-190770-5 - DL	GW-U05 (11062020)								
500-190770-6	GW-U06 (11062020)	75	69	65	80	78	77	68	72
500-190770-7	GW-U07 (11062020)	35	36	39	38	41	41	38	40
500-190770-7 - DL	GW-U07 (11062020)								
500-190770-8	GW-U08 (11062020)	64	65	60	62	70	70	56	66
500-190770-8 - DL	GW-U08 (11062020)								
500-190770-9	GW-U09 (11062020)	31	33	34	34	37	37	31	27

Eurofins TestAmerica, Chicago

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
500-190770-10	GW-U10 (11062020)	39	15 *5	10 *5	59	66	64	45	65
500-190770-11	DUP-03 (11062020)	72	69	50	87	85	98	92	92
500-190770-11 - DL	DUP-03 (11062020)								
LCS 320-431326/2-A	Lab Control Sample	108	105	108	95	102	102	102	88
LCS 320-431737/2-A	Lab Control Sample	84	81	79	80	86	84	76	62
LCSD 320-431737/3-A	Lab Control Sample Dup	78	75	73	75	80	78	72	58
MB 320-431326/1-A	Method Blank	91	104	106	92	96	104	97	89
MB 320-431737/1-A	Method Blank	86	86	82	83	88	87	85	65

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFm (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
500-190770-1	GW-U01 (11062020)	21 *5	26	25	12	11	28	37	39
500-190770-2	GW-U02 (11062020)	50	55	48	48	39	74		97
500-190770-2 - DL	GW-U02 (11062020)							86	
500-190770-2 MS	GW-U02 (11062020)	65	60	55	48	42	70		107
500-190770-2 MS - DL	GW-U02 (11062020)							110	
500-190770-2 MSD	GW-U02 (11062020)	60	53	49	39	37	65		102
500-190770-2 MSD - DL	GW-U02 (11062020)							101	
500-190770-3	GW-U03 (11062020)	63	48	51	38	33	70		97
500-190770-3 - DL	GW-U03 (11062020)							108	
500-190770-4	GW-U04 (11062020)	81	53	47	40	31	77		102
500-190770-4 - DL	GW-U04 (11062020)								
500-190770-5	GW-U05 (11062020)	49	57	49	39	33	87	100	98
500-190770-5 - DL	GW-U05 (11062020)								
500-190770-6	GW-U06 (11062020)	56	75	72	55	49	110	111	116
500-190770-7	GW-U07 (11062020)	31	36	31	29	27	44		67
500-190770-7 - DL	GW-U07 (11062020)							59	
500-190770-8	GW-U08 (11062020)	69	47	40	50	47	116		
500-190770-8 - DL	GW-U08 (11062020)							71	108
500-190770-9	GW-U09 (11062020)	24 *5	31	27	21	20	59	53	50
500-190770-10	GW-U10 (11062020)	60	20	13 *5	17	11	125	165 *5	209 *5
500-190770-11	DUP-03 (11062020)	88	63	61	44	38	101		129
500-190770-11 - DL	DUP-03 (11062020)							112	
LCS 320-431326/2-A	Lab Control Sample	90	77	60	31	26	87	88	106
LCS 320-431737/2-A	Lab Control Sample	67	58	43	25	21	76	77	84
LCSD 320-431737/3-A	Lab Control Sample Dup	60	51	39	25	21	63	74	82
MB 320-431326/1-A	Method Blank	104	71	57	30	23	88	89	92
MB 320-431737/1-A	Method Blank	72	64	49	33	29	77	84	94

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
500-190770-1	GW-U01 (11062020)	22 *5
500-190770-2	GW-U02 (11062020)	50
500-190770-2 - DL	GW-U02 (11062020)	
500-190770-2 MS	GW-U02 (11062020)	63
500-190770-2 MS - DL	GW-U02 (11062020)	
500-190770-2 MSD	GW-U02 (11062020)	56
500-190770-2 MSD - DL	GW-U02 (11062020)	
500-190770-3	GW-U03 (11062020)	47

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette 30062361.00001

Job ID: 500-190770-1

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
500-190770-3 - DL	GW-U03 (11062020)	
500-190770-4	GW-U04 (11062020)	70
500-190770-4 - DL	GW-U04 (11062020)	
500-190770-5	GW-U05 (11062020)	52
500-190770-5 - DL	GW-U05 (11062020)	
500-190770-6	GW-U06 (11062020)	72
500-190770-7	GW-U07 (11062020)	37
500-190770-7 - DL	GW-U07 (11062020)	
500-190770-8	GW-U08 (11062020)	59
500-190770-8 - DL	GW-U08 (11062020)	
500-190770-9	GW-U09 (11062020)	33
500-190770-10	GW-U10 (11062020)	55
500-190770-11	DUP-03 (11062020)	73
500-190770-11 - DL	DUP-03 (11062020)	
LCS 320-431326/2-A	Lab Control Sample	86
LCS 320-431737/2-A	Lab Control Sample	75
LCSD 320-431737/3-A	Lab Control Sample Dup	72
MB 320-431326/1-A	Method Blank	83
MB 320-431737/1-A	Method Blank	77

Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- PFHxDA = 13C2 PFHxDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- dMeFOSA = d-N-MeFOSA-M
- dEtFOSA = d-N-EtFOSA-M
- NMFM = d7-N-MeFOSE-M
- NEFM = d9-N-EtFOSE-M
- M242FTS = M2-4:2 FTS
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS
- HFPODA = 13C3 HFPO-DA