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Subject:

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

ENVIRONMENT

Dear Ms. Sellwood:

Date:

November 6, 2020

On behalf of Tyco Fire Products LP (Tyco), Arcadis is providing this *Sample Results Notification* for the Tyco Fire Technology Center (FTC) per- and polyfluoroalkyl substances (PFAS) site located at 2700 Industrial Parkway South in Marinette, Wisconsin (Site).

Contact:

Ben Verburg

Phone:

414 276 7742

This *Sample Results Notification* is being provided to satisfy NR716.14(2) for soil samples that were collected from the Site in accordance with the Supplemental Site Investigation Work Plan (SSIWP) submitted in August 2020.

Email:

Ben.Verburg@arcadis.com

In September and October, a total of forty-three soil samples were collected from the Site. Analyses of eighteen samples from sixteen locations from the Outdoor Training Area (OTA) and Marine Training Area (MTA) were provided to the Wisconsin Department of Natural Resources (WDNR) on October 28, 2020. The remaining air deposition, OTA, and MTA results are summarized below.

Our ref:

30062360

Of all soil samples collected and reported herein, no samples exceed the industrial direct contact residual contaminant level (DC RCL) of 16,400 micrograms per kilogram ($\mu\text{g}/\text{kg}$) for perfluorooctanoic acid (PFOA) or perfluorooctanesulfonic acid (PFOS). The analytical results are included in **Table 1**.

The results of the latest soil data collected in September and October 2020 at the FTC, when combined with previously collected data and analyses, continue to show that aerial deposition is not a significant transport mechanism for PFAS. Soil samples collected on the perimeter of the FTC contained less PFOS and PFOA than soil found in typical urban areas (**Table 2**). In fact, the soil samples taken on our perimeter are very similar to samples of soil taken from areas in North America where there are no known local sources of PFAS. These

measurements underscore that PFOA and PFOS are found everywhere in the United States and further demonstrate that PFAS compounds are not being transported by air beyond the FTC.

Approximately 30 shallow soil samples were also collected immediately around the outdoor fire training area and test houses at the FTC. PFAS concentrations in these samples were also low and declined as the sampling moved away from locations where our foam was historically tested. Thus, given that aerial transport of PFAS was insignificant even very close to the fire training area, this provides further evidence that aerial transport did not occur outside of Tyco’s property.

Figure 1 shows the site layout and **Figure 2** shows the sample locations. The soil sample locations were proposed in the SSIWP. The soil samples were collected by Arcadis staff using grab sampling techniques. The soil samples were submitted for analysis of PFAS using Method 537 (modified) and total organic carbon (TOC) using the Llyod Kahn method following procedures detailed in the project Quality Assurance Project Plan (QAPP).

Table 2. Median values of PFOS and PFOA concentrations in soil samples (micrograms per kilogram or parts per billion) reported in published literature and along the FTC perimeter

Compound	Pristine North America Soils ¹	Global Urban Soils ²	Statewide Survey of Vermont Soils ³	FTC Perimeter Soil Collected Fall 2020
PFOS	0.39	1.88	0.40	0.29
PFOA	0.54	2.42	0.68	0.68

Note:

µg/kg = micrograms per kilogram PFOA =perfluorooctanoic acid PFOS = perfluorooctane sulfonic acid

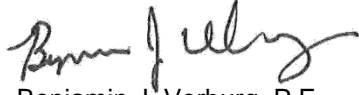
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- Strynar, M.J., Lindstrom, A.B., Nakayama, S.F., Egeghy, P.P. and Helfant, L.J., 2012. Pilot scale application of a method for the analysis of perfluorinated compounds in surface soils. *Chemosphere*, 86(3), 252-257.
- Zhu, et al., 2019. PFAS Background in Vermont Shallow Soils. March 2019.

Alyssa Sellwood
Wisconsin Department of Natural Resources
November 6, 2020

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

Sincerely,

Arcadis U.S., Inc.



Benjamin J. Verburg, P.E.
Principal Engineer

Copies:

David Neste
Bridget Kelly
Jeff Danko
Scott Wahl

Enclosures:

Figure 1 – Site Layout
Figure 2 – Soil Sample Locations
Table 1 – Soil Analytical Results
Eurofins Analytical Reports (5)

Table 1
Soil Analytical Results
Sample Results Notification
Tyco Fire Technology Center PFAS
Marinette, Wisconsin

Chemical Name	WdNR Direct Contact Residual Contaminant Levels – Industrial	Location	SS-140	SS-141	SS-142	SS-143		SS-144	SS-145	SS-146	SS-147	SS-148	SS-149	SS-150	SS-151	
		Sample ID	SS-140 (100720)	SS-141 (100720)	SS-142 (092920)	SS-143 (092920)	DUP-03 (092920)	SS-144 (092920)	SS-145 (092920)	SS-146 (092920)	SS-147 (092920)	SS-148 (092920)	SS-149 (092920)	SS-150 (092920)	SS-151 (092920)	
		Depth (ft)	0-2	0-2	0-2	0-2		0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
		Sample Date	10/7/2020	10/7/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020
		Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
		Units														
Total Organic Carbon	--	mg/kg	12,000	8,900	2,300	4,600	NA	1,600	76,000	4,000	2,900	4,800	6,900	7,300	2,600	
PFOA	16,400	µg/kg	4.9	0.94	0.37	0.37	0.36	0.33	13	0.32	0.32	0.81	0.72	1.1	3.0	
PFOS	16,400	µg/kg	9.4	2.1	1.6	2.5	2.4	5.3	15	1.1	3.6	0.54 J	1.1	2.0	0.59	
PFBS	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFHpA	--	µg/kg	1.4	0.42	0.19 J	0.22	0.23	0.12 J	3.0	0.57	0.24	0.99	0.37	1.8	1.9	
PFHxS	--	µg/kg	1.1	0.076 J	0.039 J	0.030 J	<0.20 U	0.049 J	2.1	<0.21 U	0.033 J	0.069 JN	<0.22 U	0.055 J	0.33	
PFNA	--	µg/kg	3.7	0.91	0.46	0.59	0.67	1.6	6.5	0.38	0.66	0.55	2.4	1.3	3.8	
PFDA	--	µg/kg	2.2	0.31	<0.21 U	0.24	0.13 J	0.35	6.4	0.12 J	0.31	1.0	0.097 JN	0.79	2.4	
PFDoA	--	µg/kg	0.18 J	<0.20 UJ	<0.21 U	<0.20 U	<0.20 U	<0.21 U	1.7	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFHxA	--	µg/kg	1.2	0.49	0.11 J	0.15 J	0.18 J	0.12 J	2.3	0.36	0.25	2.4	0.34	1.7	1.0	
PFTA	--	µg/kg	0.071 J	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	0.70	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFTnA	--	µg/kg	0.15 J	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	1.1	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFUnA	--	µg/kg	1.9	0.34	<0.21 U	0.055 J	0.039 J	0.039 J	4.0	<0.21 U	<0.20 U	0.22	0.10 J	0.32	0.42	
NEiFOSAA	--	µg/kg	<2.3 U	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<2.1 U	<3.6 U	<2.1 U	<2.0 U	<2.2 U	<2.2 U	<2.2 U	<2.2 U	
NMeFOSAA	--	µg/kg	<2.3 U	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<2.1 U	<3.6 U	<2.1 U	<2.0 U	<2.2 U	<2.2 U	<2.2 U	<2.2 U	
PFBA	--	µg/kg	0.27	0.22	<0.21 UB	<0.23 UB	<0.22 UB	<0.21 UB	0.55	0.64	<0.33 UB	1.4	0.27	1.6	0.68	
PFPeA	--	µg/kg	1.0	0.66	0.14 J	0.29	0.31	0.14 J	2.2	1.2	0.50	5.4	0.75	3.6	1.8	
PFHxDA	--	µg/kg	<0.23 U	<0.20 U	0.047 J	0.046 J	<0.20 U	0.048 J	0.18 J	0.051 J	0.044 J	0.053 J	0.055 J	0.049 J	0.048 J	
PFODA	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFPeS	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFHpS	--	µg/kg	0.072 J	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	0.11 J	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFNS	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	0.036 J	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFDS	--	µg/kg	<0.23 U	<0.20 UJ	<0.21 U	<0.20 U	<0.20 U	<0.21 U	0.10 J	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
PFDoS	--	µg/kg	<0.23 U	<0.20 UJ	<0.21 U	<0.20 U	<0.20 U	<0.21 U	0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
FOSA	--	µg/kg	0.23	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	0.33 J	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
NEiFOSA	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
NMeFOSA	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
NMeFOSE	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
NEiFOSE	--	µg/kg	0.18 J	0.064 J	<0.21 U	<0.20 U	<0.20 U	<0.21 U	0.47	<0.21 U	<0.20 U	0.052 J	<0.22 U	<0.22 U	<0.22 U	
4:2 FTS	--	µg/kg	<2.3 U	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<2.1 U	<3.6 U	<2.1 U	<2.0 U	<2.2 U	<2.2 U	<2.2 U	<2.2 U	
6:2 FTS	--	µg/kg	0.22 J	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<2.1 U	0.98 J	<2.1 U	<2.0 U	37 D	0.47 J	0.46 J	1.1 J	
8:2 FTS	--	µg/kg	0.64 J	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<2.1 U	4.8 J	<2.1 U	<2.0 U	1.9 J	1.5 J	<2.2 U	<2.2 U	
10:2 FTS	--	µg/kg	0.37	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	1.2	<0.21 U	<0.20 U	0.067 J	<0.22 U	<0.22 U	1.4	
DONA	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
GenX	--	µg/kg	<0.28 U	<0.26 U	<0.27 U	<0.25 U	<0.25 U	<0.26 U	<0.45 U	<0.27 U	<0.25 U	<0.28 U	<0.28 U	<0.27 U	<0.27 U	
F-53B Major	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	
F-53B Minor	--	µg/kg	<0.23 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.21 U	<0.36 U	<0.21 U	<0.20 U	<0.22 U	<0.22 U	<0.22 U	<0.22 U	

Notes on page 5.

Table 1
Soil Analytical Results
Sample Results Notification
Tyco Fire Technology Center PFAS
Marinette, Wisconsin

Chemical Name	WDNR Direct Contact Residual Contaminant Levels – Industrial	Location	SS-152	SS-153		SS-154	SS-155	SS-156	SS-157	SS-158		SS-159	SS-160	SS-161	SS-162
		Sample ID	SS-152 (092920)	SS-153 (092920)	DUP-02 (092920)	SS-154 (092920)	SS-155 (092920)	SS-156 (092920)	SS-157 (092820)	SS-158 (092820)	DUP-01 (092820)	SS-159 (092820)	SS-160 (092820)	SS-161 (092820)	SS-162 (092920)
		Depth (ft)	0-2	0-2		0-2	0-2	0-2	0-2	0-2		0-2	0-2	0-2	0-2
		Sample Date	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/28/2020	9/28/2020	9/28/2020	9/28/2020	9/28/2020	9/28/2020	9/28/2020
		Sample Type	N	N	FD	N	N	N	N	N	N	FD	N	N	N
Units															
Total Organic Carbon	--	mg/kg	1,700	5,600	NA	9,400	1,600	4,300	17,000 J-	3,400 J-	NA	2,900 J-	4,900 J-	2,200 J-	1,800
PFOA	16,400	µg/kg	0.57	2.2	2.5	0.70	0.30	0.20	0.57	1.0	1.0	29 D	3.2	0.27	0.28
PFOS	16,400	µg/kg	1.1	2.3	2.1	0.96	0.51	1.1	3.2	4.6	4.0	22 D	5.1	0.34 J	0.39 J
PFBS	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
PFHpA	--	µg/kg	0.15 J	4.7	4.5	0.36	0.19	0.24	0.28	0.15 J	0.13 J	0.36	0.092 J	0.10 J	0.098 J
PFHxS	--	µg/kg	<0.22 U	0.069 J	0.056 J	0.059 J	0.053 J	0.032 J	0.032 J	0.047 JN	0.034 JN	0.090 J	<0.20 U	<0.20 U	<0.19 U
PFNA	--	µg/kg	0.41	0.74	0.57	0.74	0.40	0.63	0.15 J	0.18 J	0.11 J	0.23	0.086 J	0.090 J	0.15 J
PFDA	--	µg/kg	<0.22 U	0.14 J	0.055 J	0.97	0.35	0.22	0.12 J	0.26	0.15 J	5.8 J+	0.36	0.14 J	0.11 J
PFDoA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	0.11 J	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	0.26	0.094 J	<0.20 U	<0.19 U
PFHxA	--	µg/kg	0.19 J	3.2	2.4	0.44	0.22	0.67	<0.26 UB	<0.20 UB	0.18 J	0.63	<0.20 UB	<0.20 UB	<0.19 UB
PFTA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
PFTnA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
PFUnA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	1.5	0.15 J	0.17 J	0.053 J	0.18 J	0.075 J	0.22	0.12 J	0.047 JN	0.042 J
NEiFOSAA	--	µg/kg	<2.2 U	<2.0 U	<2.1 U	<2.1 U	<1.9 U	<1.9 U	<2.0 U	<2.0 U	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<1.9 U
NMeFOSAA	--	µg/kg	<2.2 U	<2.0 U	<2.1 U	<2.1 U	<1.9 U	<1.9 U	<2.0 U	<2.0 U	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<1.9 U
PFBA	--	µg/kg	<0.22 UB	3.2	2.4	<0.30 UB	<0.21 UB	<0.26 UB	<0.20 UB	<0.20 U	<0.20 UB	<0.21 UB	<0.20 U	<0.20 UB	<0.19 UB
PFPeA	--	µg/kg	0.36	6.8	4.8	0.57	0.28	0.61	0.34	0.28	0.18 J	0.21	0.15 J	0.16 J	0.17 J
PFHxDA	--	µg/kg	0.048 J	0.045 J	<0.21 U	0.054 J	0.046 J	0.044 J	<0.20 UB	<0.20 UB	<0.20 UB	<0.21 U	<0.20 UB	<0.20 UB	<0.19 U
PFODA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
PFPeS	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
PFHpS	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.20 U	<0.19 U
PFNS	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	0.033 J	0.085 J	0.13 J	<0.20 U	<0.19 U
PFDS	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	0.075 J	<0.20 U	<0.20 U	0.039 J	0.13 J	0.20	<0.20 U	<0.19 U
PFDoS	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
FOSA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	0.15 J	0.44	15	3.9	<0.20 U	<0.19 U
NEiFOSA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.20 U	<0.19 U
NMeFOSA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	0.42	0.16 J	<0.20 U	<0.19 U
NMeFOSE	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
NEiFOSE	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	0.053 J	0.13 J	0.086 J	<0.21 U	0.10 J	0.17 J	<0.19 U
4:2 FTS	--	µg/kg	<2.2 U	<2.0 U	<2.1 U	<2.1 U	<1.9 U	<1.9 U	<2.0 U	<2.0 U	<2.0 U	<2.1 U	<2.0 U	<2.0 U	<1.9 U
6:2 FTS	--	µg/kg	0.78 J	0.46 J-	0.37 J	2.7 J-	0.98 J	0.19 J-	<2.0 U	<2.0 U	<2.0 U	<2.1 U	<2.0 U	0.37 J	<1.9 U
8:2 FTS	--	µg/kg	<2.2 U	<2.0 U	<2.1 U	4.9 J-	0.78 J	0.26 J-	<2.0 U	0.33 J	<2.0 U	<2.1 U	0.61 J	<2.0 U	<1.9 U
10:2 FTS	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	0.16 J	<0.19 U	0.069 J	<0.20 U	<0.20 U	<0.20 U	<0.21 U	0.080 J	<0.20 U	<0.19 U
DONA	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
GenX	--	µg/kg	<0.27 U	<0.25 U	<0.27 U	<0.26 U	<0.24 U	<0.24 U	<0.25 U	<0.25 U	<0.24 U	<0.26 U	<0.25 U	<0.25 U	<0.24 U
F-53B Major	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U
F-53B Minor	--	µg/kg	<0.22 U	<0.20 U	<0.21 U	<0.21 U	<0.19 U	<0.19 U	<0.20 U	<0.20 U	<0.20 U	<0.21 U	<0.20 U	<0.20 U	<0.19 U

Notes on page 5.

Table 1
Soil Analytical Results
Sample Results Notification
Tyco Fire Technology Center PFAS
Marinette, Wisconsin

Chemical Name	WDNR Direct Contact Residual Contaminant Levels – Industrial	Location	SS-163	SS-164	SS-165	SS-166	SS-167	SS-168	SS-169	SS-170	SS-171	SS-172	SS-173		SS-174	
		Sample ID	SS-163 (092920)	SS-164 (092920)	SS-165 (092920)	SS-166 (092920)	SS-167 (092920)	SS-168 (092920)	SS-169 (092920)	SS-170 (092920)	SS-171 (092920)	SS-172 (092920)	SS-173 (093020)		SS-174 (100720)	
		Depth (ft)	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2		0-2	
		Sample Date	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/29/2020	9/30/2020	10/7/2020	10/6/2020
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Units														
Total Organic Carbon	--	mg/kg	2,500	11,000	3,600	4,300	6,800	13,000	2,800	19,000	7,300	12,000	1,000	2,000	3,700	
PFOA	16,400	µg/kg	0.65	0.43	2.5	9.1	0.66	13	74	5.9	7.8	6.2 J-	NA	0.25	<0.21 U	
PFOS	16,400	µg/kg	0.63	1.2	0.22 J	0.29 J	1.4	6.2	0.64	3.6	0.68	12	NA	0.30 J	0.28 J	
PFBS	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	
PFHpA	--	µg/kg	0.080 J	0.71	0.064 J	0.15 J	0.32	1.4	2.4	0.27	0.62	0.76	NA	0.050 J	0.21	
PFHxS	--	µg/kg	0.055 J	0.038 J	<0.19 U	<0.20 U	0.037 J	0.33	0.057 JN	0.20 J	<0.20 U	0.10 J	NA	<0.22 U	<0.21 U	
PFNA	--	µg/kg	0.11 J	0.28	0.042 J	0.063 J	1.2	13	4.1	1.0	0.29	2.1 J+	NA	<0.22 U	0.11 J	
PFDA	--	µg/kg	0.19 J	0.32	0.12 J	1.0 J	2.0	3.0	9.5	0.99	1.1	6.4 J+	NA	<0.22 U	0.025 J	
PFDoA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	0.13 J	0.17 J	0.098 J	<0.20 U	1.3	NA	<0.22 U	<0.21 U	
PFHxA	--	µg/kg	<0.20 UB	0.23	0.16 J	0.40	0.17 J	0.97	3.6	0.35	1.3	0.88 J+	NA	0.077 J	0.12 J	
PFTeA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	0.46	NA	<0.22 U	<0.21 U	
PFTnA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	0.094 J	<0.21 U	0.084 J	<0.20 U	0.58	NA	<0.22 U	<0.21 U	
PFUnA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	0.11 J	<0.20 U	1.1	1.9	0.58	0.16 J	3.3 J+	NA	<0.22 U	<0.21 U	
NEiFOSAA	--	µg/kg	<2.0 U	<2.1 U	<1.9 U	<2.0 U	<2.0 U	<2.1 U	<2.1 U	<2.2 U	<2.0 U	2.1	NA	<2.2 U	<2.1 U	
NMeFOSAA	--	µg/kg	<2.0 U	<2.1 U	<1.9 U	<2.0 U	<2.0 U	<2.1 U	<2.1 U	<2.2 U	<2.0 U	<2.1 U	NA	<2.2 U	<2.1 U	
PFBA	--	µg/kg	<0.20 UB	<0.21 UB	<0.19 UB	<0.20 UB	<0.20 UB	0.52	1.5	<0.22 UB	0.47	<0.40 UB	NA	0.14 J	0.091 J	
PFPeA	--	µg/kg	0.15 J	0.21	0.13 J	0.17 J	0.12 J	1.2	2.0	0.76	1.6	0.66	NA	0.14 J	0.15 J	
PFHxDA	--	µg/kg	<0.20 UB	<0.21 UB	<0.19 U	<0.20 UB	<0.20 UB	<0.21 UB	<0.21 UB	<0.22 UB	<0.20 UB	0.16 J	NA	<0.22 U	<0.21 UJ	
PFODA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	0.035 J-	NA	<0.22 U	<0.21 U	
PFPeS	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	
PFHpS	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	0.045 J	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	
PFNS	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	0.050 J	NA	<0.22 U	<0.21 U	
PFDS	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	0.11 J	NA	<0.22 U	<0.21 U	
PFDoS	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 UJ-	NA	<0.22 U	<0.21 U	
FOSA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	0.099 J	0.20 J	0.18 J	<0.20 U	1.2	NA	<0.22 U	<0.21 U	
NEiFOSA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	0.033 J	NA	<0.22 U	<0.21 U	
NMeFOSA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	
NMeFOSE	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	
NEiFOSE	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	0.046 J	<0.21 U	0.099 J	<0.20 U	0.063 J	NA	0.097 J	0.055 J	
4:2 FTS	--	µg/kg	<2.0 U	<2.1 U	<1.9 U	<2.0 U	<2.0 U	<2.1 U	<2.1 U	<2.2 U	<2.0 U	<2.1 U	NA	<2.2 U	<2.1 U	
6:2 FTS	--	µg/kg	<2.0 U	<2.1 U	0.18 J	<2.0 U	<2.0 U	3.0	28 J	0.25 J	0.48 J	3.3 J	NA	<2.2 U	<2.1 U	
8:2 FTS	--	µg/kg	<2.0 U	<2.1 U	<1.9 U	<2.0 U	<2.0 U	5.9	270	0.99 J	0.31 J	16 J	NA	<2.2 U	<2.1 U	
10:2 FTS	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	0.082 J	12	0.064 J	<0.20 U	24 D	NA	<0.22 U	<0.21 U	
DONA	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	
GenX	--	µg/kg	<0.25 U	<0.26 U	<0.24 U	<0.25 U	<0.26 U	<0.26 U	<0.27 U	<0.27 U	<0.25 U	<0.26 U	NA	<0.27 U	<0.27 U	
F-53B Major	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	
F-53B Minor	--	µg/kg	<0.20 U	<0.21 U	<0.19 U	<0.20 U	<0.20 U	<0.21 U	<0.21 U	<0.22 U	<0.20 U	<0.21 U	NA	<0.22 U	<0.21 U	

Notes on page 5.

Table 1
Soil Analytical Results
Sample Results Notification
Tyco Fire Technology Center PFAS
Marinette, Wisconsin

Chemical Name	WDNR Direct Contact Residual Contaminant Levels – Industrial	Location	SS-175	SS-176	SS-177	SS-178	SS-179	SS-180	SS-181	SS-182		
		Sample ID	SS-175 (100720)	SS-176 (100720) DUP-04 (100720)	SS-177 (100720)	SS-178 (100720)	SS-179 (093020) SS-179 (100720)	SS-180 (100720)	SS-181 (100720)	SS-182 (100720)		
		Depth (ft)	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2		
		Sample Date	10/7/2020	10/7/2020	10/7/2020	10/7/2020	10/7/2020	9/30/2020	10/7/2020	10/7/2020	10/7/2020	
		Sample Type	N	N	FD	N	N	N	N	N	N	
Units												
Total Organic Carbon	--	mg/kg	5,100	4,400	NA	13,000	26,000	8,100 J-	8,000	7,000	10,000	8,500
PFOA	16,400	µg/kg	0.59	0.48	0.58	0.45	0.29	NA	0.35	0.36	0.48	0.88
PFOS	16,400	µg/kg	0.33 J	0.25 J	0.34 J	0.31 J	<0.56 U	NA	0.30 J	0.27 J	0.23 J	0.23 J
PFBS	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	0.036 J
PFHpA	--	µg/kg	0.21	0.075 J	0.24	0.16 J	0.32	NA	0.44	0.20	0.17 J	0.37
PFHxS	--	µg/kg	<0.21 U	<0.21 U	0.034 J	0.036 J	<0.23 U	NA	<0.19 U	0.034 J	<0.21 U	0.084 J
PFNA	--	µg/kg	0.068 J	<0.21 U	0.066 J	0.048 J	0.090 J	NA	0.15 J	0.067 J	0.046 J	0.098 J
PFDA	--	µg/kg	0.033 J	<0.21 U	0.050 J	<0.22 U	<0.23 U	NA	0.044 J	0.030 J	0.025 J	0.042 J
PFDoA	--	µg/kg	<0.21 UJ	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
PFHxA	--	µg/kg	0.29	0.085 J	0.33	0.18 J	0.24	NA	0.24	0.24	0.18 J	0.41
PFTA	--	µg/kg	NA R	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
PFTnA	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
PFUnA	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	0.039 J	<0.20 U	<0.21 U	0.050 J
NEtFOSAA	--	µg/kg	<2.1 UJ	<2.1 U	<2.0 U	<2.2 U	<2.3 UJ	NA	<1.9 U	<2.0 U	<2.1 U	<2.0 U
NMeFOSAA	--	µg/kg	<2.1 U	<2.1 U	<2.0 U	<2.2 U	<2.3 UJ	NA	<1.9 U	<2.0 U	<2.1 U	<2.0 U
PFBA	--	µg/kg	0.31	0.11 J	0.35	0.24	0.26	NA	0.24	0.28	0.19 J	0.44
PFPeA	--	µg/kg	0.60	0.12 J	0.70	0.30	0.39	NA	0.43	0.37	0.28	0.61
PFHxDA	--	µg/kg	NA R	<0.21 U	<0.20 U	<0.22 U	<0.23 UJ	NA	<0.19 UJ	<0.20 U	<0.21 U	<0.20 U
PFODA	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
PFPeS	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	0.024 J
PFHpS	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
PFNS	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
PFDS	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
PFDoS	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
FOSA	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
NEtFOSA	--	µg/kg	<0.21 UJ	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
NMeFOSA	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
NMeFOSE	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
NEtFOSE	--	µg/kg	0.073 J	0.054 J	0.050 J	0.076 J	0.21 J	NA	0.15 J	<0.20 U	<0.21 U	0.060 J
4:2 FTS	--	µg/kg	<2.1 U	<2.1 U	<2.0 U	<2.2 U	<2.3 U	NA	<1.9 U	<2.0 U	<2.1 U	<2.0 U
6:2 FTS	--	µg/kg	<2.1 U	<2.1 U	<2.0 U	<2.2 U	<2.3 U	NA	<1.9 U	<2.0 U	<2.1 U	<2.0 U
8:2 FTS	--	µg/kg	<2.1 U	<2.1 U	<2.0 U	<2.2 U	<2.3 U	NA	<1.9 U	<2.0 U	<2.1 U	<2.0 U
10:2 FTS	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
DONA	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	0.022 J
GenX	--	µg/kg	<0.26 U	<0.26 U	<0.25 U	<0.27 U	<0.28 U	NA	<0.24 U	<0.24 U	<0.26 U	<0.26 U
F-53B Major	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U
F-53B Minor	--	µg/kg	<0.21 U	<0.21 U	<0.20 U	<0.22 U	<0.23 U	NA	<0.19 U	<0.20 U	<0.21 U	<0.20 U

Notes on page 5.

Table 1
Soil Analytical Results
Sample Results Notification
Tyco Fire Technology Center PFAS
Marinette, Wisconsin

Notes:

Bold = Detections

< =

D = Dilution required for sample analysis

FD = Field Duplicate

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

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

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

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

N = Normal Sample

NA = not applicable

R = The result is unusable. The sample result is rejected due to serious deficiencies in meeting quality control criteria.

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

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

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

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 = Perfluoronanesulfonic 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-chloroeicosatluoro-3-oxaundecane-1-sulfonic acid (C10)

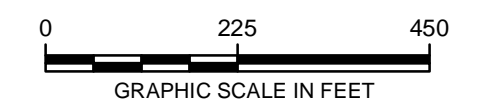
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TYCO Marinette, WI
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LEGEND:
— DITCH/STREAM



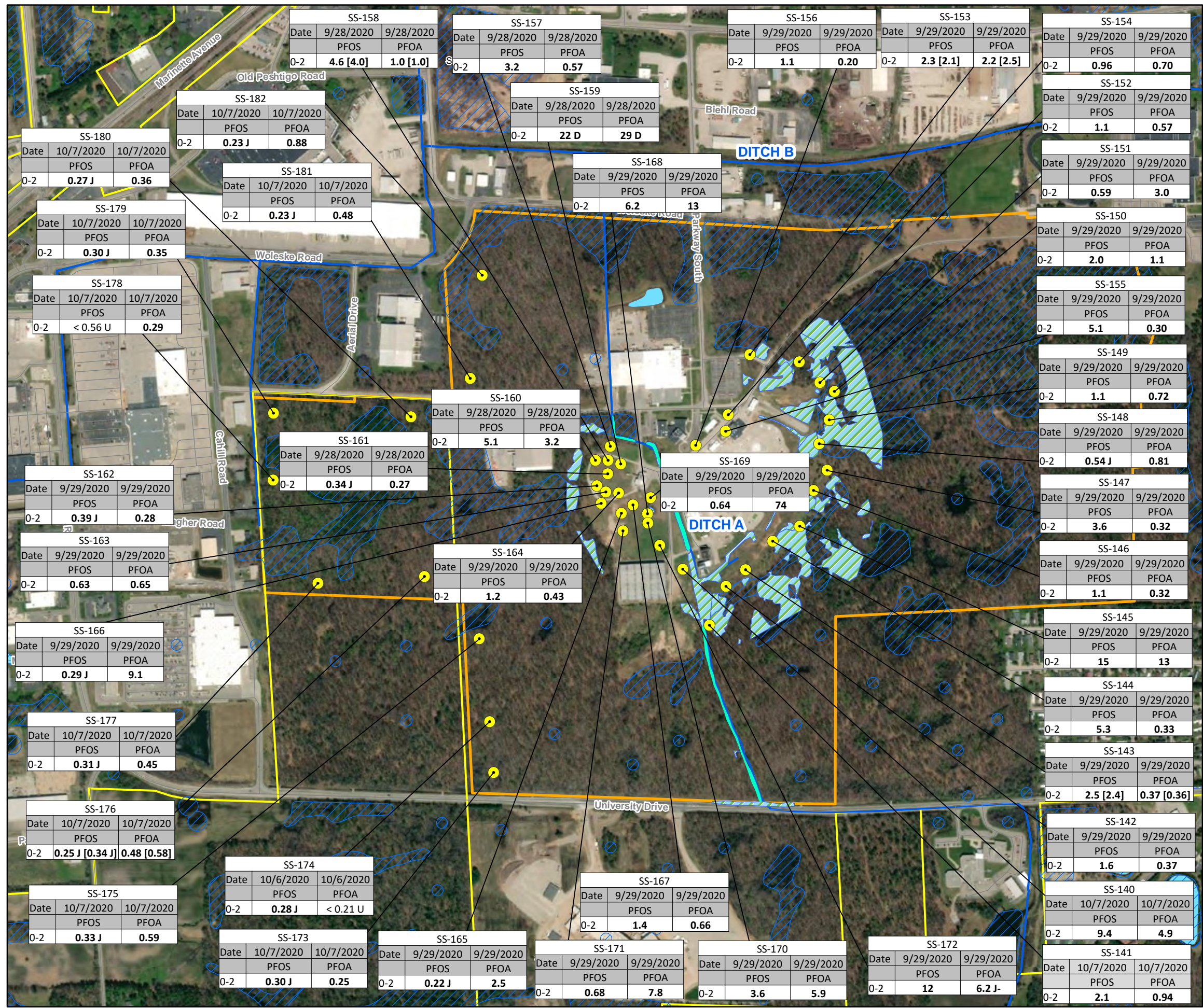
NOTES:
1. IMAGERY SOURCE: 4/27/2016, DIGITALGLOBE, VIVID - USA.



TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
SAMPLE RESULTS NOTIFICATION

SITE LAYOUT

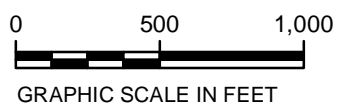
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 TYCO Marinette, WI
 D:\tyco_marinette\TRANSFER_LOCAL\MXD\2020-11\Figure 1 Soils Sample Locations PFOA.mxd 11/4/2020 1:59:38 PM



LEGEND:

- 2020 SOIL BORING LOCATIONS
- STREAMS
- DELINEATED WETLANDS
- WISCONSIN WETLANDS INVENTORY
- DITCH/STREAM
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- ROAD
- 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 DATA SOURCE: U.S. GEOLOGICAL SURVEY NATIONAL HYDROGRAPHY DATASET, ACCESSED FALL 2017.
 3. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
 4. AERIAL IMAGERY: 4/27/2016 DIGITALGLOBE, VIVID-USA
 5. WETLANDS SOURCE: WISCONSIN WETLAND INVENTORY, ACCESSED SPRING 2020.
 6. PFOS = PERFLUOROCTANESULFONIC ACID
 7. PFOA = PERFLUOROCTANOIC ACID
 8. 0-2 = 0-2 FEET BELOW GROUND SURFACE
 9. PFOA & PFOS ARE REPORTED IN MICROGRAMS PER KILOGRAM (µg/kg)



TYCO FIRE TECHNOLOGY CENTER
 MARINETTE, WISCONSIN
SAMPLE RESULTS NOTIFICATION

SOIL SAMPLE LOCATIONS

FIGURE
2

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-65223-1

Client Project/Site: Marinette Supp Site Inv - 30015294.00020

For:

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

Attn: Lisa Rutkowski



Authorized for release by:
10/15/2020 5:40:48 PM

Sandie Fredrick, Project Manager II
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LINKS

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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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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*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.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Job ID: 320-65223-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative 320-65223-1

Comments

No additional comments.

Receipt

The samples were received on 10/1/2020 9:40 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8° C and 4.0° C.

Receipt Exceptions

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): Sample#19 EB-09-29-2020 was received with container label time at 14:00, while COC list time at 14:15. Sample was logged in according to COC.320-65223-19.

LCMS

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS of the following sample: 320-65223-19. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The matrix spike (MS) recovery for Perfluorodecanoic acid (PFDA) in preparation batch 320-418642 and analytical batch 320-419682 was 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): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following samples: 320-65223-2, 320-65223-3, 320-65223-4 and 320-65223-8. 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 M2-4:2 FTS and M2-8:2 FTS in the following samples: 320-65223-1, 320-65223-5, 320-65223-6, 320-65223-7 and 320-65223-A-1-C MSD. 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 M2-4:2 FTS in the following sample: 320-65223-A-1-B MS. 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 analytes was outside of the established ratio limits. The qualitative identification of the analytes has some degree of uncertainty. However, analyst judgment was used to positively identify the analytes. 320-65223-2, 320-65223-5, 320-65223-7 and MB 320-418642/1-A

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. 320-65223-13 and 320-65223-16

Method 537 (modified): The matrix spike (MS) recovery for Perfluorodecanoic acid (PFDA) in preparation batch 320-418644 and analytical batch 320-419687 was 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): The matrix spike and matrix spike duplicate (MS/MSD) precision for Perfluorodecanoic acid (PFDA) and Perfluorooctanoic acid (PFOA) in preparation batch 320-418644 and analytical batch 320-419687 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following samples: 320-65223-9[MS], 320-65223-9[MSD], 320-65223-11, 320-65223-12, 320-65223-14, 320-65223-15 and 320-65223-16. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Job ID: 320-65223-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS in the following sample: 320-65223-13. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Results for samples 320-65223-1, 320-65223-13, 320-65223-A-1-B MS and 320-65223-A-1-C MSD 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): Results for sample 320-65223-1 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): Due to the high concentration of Perfluorooctanesulfonamide (FOSA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-418642 and analytical batch 320-419682 could not be evaluated for accuracy. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): The matrix spike duplicate (MSD) recovery for Perfluorooctanoic acid (PFOA) in preparation batch 320-418644 and analytical batch 320-419687 was 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): Isotope Dilution Analyte (IDA) recovery for M2-4:2 FTS and M2-8:2 FTS is above the method recommended limit for the following sample: 320-65223-9. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Due to the high concentration of Perfluorooctanoic acid (PFOA), the matrix spike duplicate (MSD) for preparation batch 320-418642 and analytical batch 320-420393 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery for d9-N-EtFOSE-M associated with the following sample is below the method recommended limit: LCS 320-418642/2-A. 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 method blank for preparation batch 320-418642 and analytical batch 320-419682 contained Perfluorooctanesulfonic acid (PFOS) above the reporting limit (RL). The following sample were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 537 (modified): The laboratory control sample (LCS) for preparation batch 320-418642 and analytical batch 320-419682 recovered outside control limits for the following analyte: Perfluorooctanesulfonic acid (PFOS). This analyte was biased high in the LCS. The sample was re-extracted within concurring results. This sample was used in this extraction as the batch quality control sample (QC). Unfortunately in the re-extraction this sample was not the batch QC so this set of data are reported.

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 320-418100. Method Code:3535 PFC Matrix:Water preparation batch 320-418100

Method SHAKE: The following samples: 320-65223-2 and 320-65223-3 were yellow after final volume. preparation batch 320-418642
Method: PFC_IDA/Shake_Bath_14D Matrix: Solids

Method SHAKE: The following sample: 320-65223-14 was yellow after final volume. preparation batch 320-420112 Method: PFC_IDA /

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Job ID: 320-65223-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Shake_Bath_14D Matrix: Solid

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

- 1
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- 13
- 14

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-159

Lab Sample ID: 320-65223-1

Date Collected: 09/28/20 14:05

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 94.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.19	J B	0.21	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.080	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorohexanoic acid (PFHxA)	0.63	B	0.21	0.044	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoroheptanoic acid (PFHpA)	0.36		0.21	0.030	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorononanoic acid (PFNA)	0.23		0.21	0.038	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorodecanoic acid (PFDA)	5.8	F1	0.21	0.023	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoroundecanoic acid (PFUnA)	0.22		0.21	0.038	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorododecanoic acid (PFDoA)	0.26		0.21	0.070	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.053	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.056	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		0.21	0.046	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorohexanesulfonic acid (PFHxS)	0.090	J	0.21	0.032	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorodecanesulfonic acid (PFDS)	0.13	J	0.21	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorooctanesulfonamide (FOSA)	15		0.21	0.086	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluoronanesulfonic acid (PFNS)	0.085	J	0.21	0.021	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.41	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
4:2 FTS	<2.1		2.1	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
8:2 FTS	<2.1		2.1	0.26	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
10:2 FTS	<0.21		0.21	0.052	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
NMeFOSA	0.42		0.21	0.043	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.063	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
NMeFOSE	<0.21		0.21	0.074	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
NEtFOSE	<0.21		0.21	0.038	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
F-53B Major	<0.21		0.21	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/05/20 05:28	10/08/20 01:18	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	91		25 - 150				10/05/20 05:28	10/08/20 01:18	1
13C4 PFBA	77		25 - 150				10/05/20 05:28	10/08/20 01:18	1
13C5 PFPeA	84		25 - 150				10/05/20 05:28	10/08/20 01:18	1
13C2 PFHxA	94		25 - 150				10/05/20 05:28	10/08/20 01:18	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-159

Lab Sample ID: 320-65223-1

Date Collected: 09/28/20 14:05

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 94.5

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	97		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C4 PFOA	89		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C5 PFNA	93		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C2 PFDA	92		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C2 PFUnA	96		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C2 PFDoA	99		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C2 PFTeDA	103		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C3 PFBS	87		25 - 150	10/05/20 05:28	10/08/20 01:18	1
18O2 PFHxS	93		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C4 PFOS	85		25 - 150	10/05/20 05:28	10/08/20 01:18	1
d3-NMeFOSAA	89		25 - 150	10/05/20 05:28	10/08/20 01:18	1
d5-NEtFOSAA	87		25 - 150	10/05/20 05:28	10/08/20 01:18	1
M2-4:2 FTS	206	*5	25 - 150	10/05/20 05:28	10/08/20 01:18	1
M2-6:2 FTS	122		25 - 150	10/05/20 05:28	10/08/20 01:18	1
M2-8:2 FTS	158	*5	25 - 150	10/05/20 05:28	10/08/20 01:18	1
d9-N-EtFOSE-M	54		10 - 120	10/05/20 05:28	10/08/20 01:18	1
d-N-MeFOSA-M	69		25 - 150	10/05/20 05:28	10/08/20 01:18	1
d7-N-MeFOSE-M	50		10 - 120	10/05/20 05:28	10/08/20 01:18	1
d-N-EtFOSA-M	69		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C2 PFHxDA	100		25 - 150	10/05/20 05:28	10/08/20 01:18	1
13C3 HFPO-DA	85		25 - 150	10/05/20 05:28	10/08/20 01:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	29		1.0	0.45	ug/Kg	☆	10/05/20 05:28	10/09/20 18:08	5
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	86		25 - 150	10/05/20 05:28	10/09/20 18:08	5			

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	22		2.5	1.0	ug/Kg	☆	10/08/20 21:10	10/14/20 11:58	5
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOS	98		25 - 150	10/08/20 21:10	10/14/20 11:58	5			

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.5		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	94.5		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-158

Lab Sample ID: 320-65223-2

Date Collected: 09/28/20 14:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 93.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluoropentanoic acid (PFPeA)	0.28		0.20	0.077	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorohexanoic acid (PFHxA)	0.20	B	0.20	0.042	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluoroheptanoic acid (PFHpA)	0.15	J	0.20	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorooctanoic acid (PFOA)	1.0		0.20	0.086	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorononanoic acid (PFNA)	0.18	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorodecanoic acid (PFDA)	0.26		0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluoroundecanoic acid (PFUnA)	0.18	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.062	J B	0.20	0.044	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorohexanesulfonic acid (PFHxS)	0.047	J I	0.20	0.031	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorooctanesulfonamide (FOSA)	0.15	J	0.20	0.082	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
8:2 FTS	0.33	J	2.0	0.25	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
NEtFOSE	0.13	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:28	10/08/20 01:46	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	77		25 - 150				10/05/20 05:28	10/08/20 01:46	1
13C4 PFBA	57		25 - 150				10/05/20 05:28	10/08/20 01:46	1
13C5 PFPeA	70		25 - 150				10/05/20 05:28	10/08/20 01:46	1
13C2 PFHxA	90		25 - 150				10/05/20 05:28	10/08/20 01:46	1
13C4 PFHpA	93		25 - 150				10/05/20 05:28	10/08/20 01:46	1
13C4 PFOA	85		25 - 150				10/05/20 05:28	10/08/20 01:46	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-158

Lab Sample ID: 320-65223-2

Date Collected: 09/28/20 14:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 93.3

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	91		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C2 PFDA	86		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C2 PFUnA	90		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C2 PFDoA	86		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C2 PFTeDA	91		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C3 PFBS	84		25 - 150	10/05/20 05:28	10/08/20 01:46	1
18O2 PFHxS	96		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C4 PFOS	89		25 - 150	10/05/20 05:28	10/08/20 01:46	1
d3-NMeFOSAA	62		25 - 150	10/05/20 05:28	10/08/20 01:46	1
d5-NEtFOSAA	73		25 - 150	10/05/20 05:28	10/08/20 01:46	1
M2-4:2 FTS	242	*5	25 - 150	10/05/20 05:28	10/08/20 01:46	1
M2-6:2 FTS	171	*5	25 - 150	10/05/20 05:28	10/08/20 01:46	1
M2-8:2 FTS	177	*5	25 - 150	10/05/20 05:28	10/08/20 01:46	1
d9-N-EtFOSE-M	40		10 - 120	10/05/20 05:28	10/08/20 01:46	1
d-N-MeFOSA-M	57		25 - 150	10/05/20 05:28	10/08/20 01:46	1
d7-N-MeFOSE-M	44		10 - 120	10/05/20 05:28	10/08/20 01:46	1
d-N-EtFOSA-M	50		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C2 PFHxDA	61		25 - 150	10/05/20 05:28	10/08/20 01:46	1
13C3 HFPO-DA	76		25 - 150	10/05/20 05:28	10/08/20 01:46	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	4.6		0.53	0.21	ug/Kg	☼	10/08/20 21:10	10/13/20 17:35	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	96		25 - 150	10/08/20 21:10	10/13/20 17:35	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>
Percent Moisture	6.7		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	93.3		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-157

Lab Sample ID: 320-65223-3

Date Collected: 09/28/20 14:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.047	J B	0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluoropentanoic acid (PFPeA)	0.34		0.20	0.076	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorohexanoic acid (PFHxA)	0.26	B	0.20	0.042	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluoroheptanoic acid (PFHpA)	0.28		0.20	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorooctanoic acid (PFOA)	0.57		0.20	0.085	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorononanoic acid (PFNA)	0.15	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorodecanoic acid (PFDA)	0.12	J	0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluoroundecanoic acid (PFUnA)	0.053	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.066	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.050	J B	0.20	0.044	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorohexanesulfonic acid (PFHxS)	0.032	J	0.20	0.031	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.081	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
NMeFOSE	<0.20		0.20	0.070	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
NEtFOSE	0.053	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:28	10/08/20 01:55	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	83		25 - 150				10/05/20 05:28	10/08/20 01:55	1
13C4 PFBA	56		25 - 150				10/05/20 05:28	10/08/20 01:55	1
13C5 PFPeA	71		25 - 150				10/05/20 05:28	10/08/20 01:55	1
13C2 PFHxA	81		25 - 150				10/05/20 05:28	10/08/20 01:55	1
13C4 PFHpA	86		25 - 150				10/05/20 05:28	10/08/20 01:55	1
13C4 PFOA	87		25 - 150				10/05/20 05:28	10/08/20 01:55	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-157

Lab Sample ID: 320-65223-3

Date Collected: 09/28/20 14:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.7

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	87		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C2 PFDA	86		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C2 PFUnA	88		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C2 PFDoA	87		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C2 PFTeDA	93		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C3 PFBS	76		25 - 150	10/05/20 05:28	10/08/20 01:55	1
18O2 PFHxS	85		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C4 PFOS	84		25 - 150	10/05/20 05:28	10/08/20 01:55	1
d3-NMeFOSAA	71		25 - 150	10/05/20 05:28	10/08/20 01:55	1
d5-NEtFOSAA	74		25 - 150	10/05/20 05:28	10/08/20 01:55	1
M2-4:2 FTS	202	*5	25 - 150	10/05/20 05:28	10/08/20 01:55	1
M2-6:2 FTS	174	*5	25 - 150	10/05/20 05:28	10/08/20 01:55	1
M2-8:2 FTS	183	*5	25 - 150	10/05/20 05:28	10/08/20 01:55	1
d9-N-EtFOSE-M	45		10 - 120	10/05/20 05:28	10/08/20 01:55	1
d-N-MeFOSA-M	57		25 - 150	10/05/20 05:28	10/08/20 01:55	1
d7-N-MeFOSE-M	45		10 - 120	10/05/20 05:28	10/08/20 01:55	1
d-N-EtFOSA-M	58		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C2 PFHxDA	81		25 - 150	10/05/20 05:28	10/08/20 01:55	1
13C3 HFPO-DA	72		25 - 150	10/05/20 05:28	10/08/20 01:55	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	3.2		0.51	0.20	ug/Kg	☆	10/08/20 21:10	10/13/20 17:45	1
<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>			
13C4 PFOS	92		25 - 150	10/08/20 21:10	10/13/20 17:45	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>
Percent Moisture	4.3		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	95.7		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-160

Lab Sample ID: 320-65223-4

Date Collected: 09/28/20 14:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluoropentanoic acid (PFPeA)	0.15	J	0.20	0.076	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorohexanoic acid (PFHxA)	0.16	J B	0.20	0.042	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluoroheptanoic acid (PFHpA)	0.092	J	0.20	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorooctanoic acid (PFOA)	3.2		0.20	0.085	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorononanoic acid (PFNA)	0.086	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorodecanoic acid (PFDA)	0.36		0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluoroundecanoic acid (PFUnA)	0.12	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorododecanoic acid (PFDoA)	0.094	J	0.20	0.066	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.052	J B	0.20	0.044	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorodecanesulfonic acid (PFDS)	0.20		0.20	0.039	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorooctanesulfonamide (FOSA)	3.9		0.20	0.081	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorononanesulfonic acid (PFNS)	0.13	J	0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
8:2 FTS	0.61	J	2.0	0.25	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
10:2 FTS	0.080	J	0.20	0.050	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
NMeFOSA	0.16	J	0.20	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
NMeFOSE	<0.20		0.20	0.070	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
NEtFOSE	0.10	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:28	10/08/20 02:04	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	87		25 - 150				10/05/20 05:28	10/08/20 02:04	1
13C4 PFBA	68		25 - 150				10/05/20 05:28	10/08/20 02:04	1
13C5 PFPeA	75		25 - 150				10/05/20 05:28	10/08/20 02:04	1
13C2 PFHxA	86		25 - 150				10/05/20 05:28	10/08/20 02:04	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-160

Lab Sample ID: 320-65223-4

Date Collected: 09/28/20 14:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.8

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	89		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C4 PFOA	89		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C5 PFNA	92		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C2 PFDA	91		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C2 PFUnA	85		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C2 PFDoA	78		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C2 PFTeDA	82		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C3 PFBS	79		25 - 150	10/05/20 05:28	10/08/20 02:04	1
18O2 PFHxS	86		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C4 PFOS	84		25 - 150	10/05/20 05:28	10/08/20 02:04	1
d3-NMeFOSAA	73		25 - 150	10/05/20 05:28	10/08/20 02:04	1
d5-NEtFOSAA	74		25 - 150	10/05/20 05:28	10/08/20 02:04	1
M2-4:2 FTS	235	*5	25 - 150	10/05/20 05:28	10/08/20 02:04	1
M2-6:2 FTS	165	*5	25 - 150	10/05/20 05:28	10/08/20 02:04	1
M2-8:2 FTS	171	*5	25 - 150	10/05/20 05:28	10/08/20 02:04	1
d9-N-EtFOSE-M	42		10 - 120	10/05/20 05:28	10/08/20 02:04	1
d-N-MeFOSA-M	60		25 - 150	10/05/20 05:28	10/08/20 02:04	1
d7-N-MeFOSE-M	44		10 - 120	10/05/20 05:28	10/08/20 02:04	1
d-N-EtFOSA-M	59		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C2 PFHxDA	67		25 - 150	10/05/20 05:28	10/08/20 02:04	1
13C3 HFPO-DA	77		25 - 150	10/05/20 05:28	10/08/20 02:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	5.1		0.53	0.21	ug/Kg	☆	10/08/20 21:10	10/13/20 17:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	87		25 - 150	10/08/20 21:10	10/13/20 17:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.2		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	92.8		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-161

Lab Sample ID: 320-65223-5

Date Collected: 09/28/20 15:20

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 93.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.10	J B	0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluoropentanoic acid (PFPeA)	0.16	J	0.20	0.077	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorohexanoic acid (PFHxA)	0.10	J B	0.20	0.042	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluoroheptanoic acid (PFHpA)	0.10	J	0.20	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorooctanoic acid (PFOA)	0.27		0.20	0.086	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorononanoic acid (PFNA)	0.090	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorodecanoic acid (PFDA)	0.14	J	0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluoroundecanoic acid (PFUnA)	0.047	J I	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.045	J B	0.20	0.044	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
6:2 FTS	0.37	J	2.0	0.15	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:28	10/08/20 02:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	87		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C4 PFBA	67		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C5 PFPeA	74		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C2 PFHxA	88		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C4 PFHpA	90		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C4 PFOA	82		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C5 PFNA	88		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C2 PFDA	87		25 - 150	10/05/20 05:28	10/08/20 02:32	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-161

Lab Sample ID: 320-65223-5

Date Collected: 09/28/20 15:20

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 93.4

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	89		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C2 PFDoA	82		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C2 PFTeDA	96		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C3 PFBS	77		25 - 150	10/05/20 05:28	10/08/20 02:32	1
18O2 PFHxS	85		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C4 PFOS	81		25 - 150	10/05/20 05:28	10/08/20 02:32	1
d3-NMeFOSAA	83		25 - 150	10/05/20 05:28	10/08/20 02:32	1
d5-NEtFOSAA	85		25 - 150	10/05/20 05:28	10/08/20 02:32	1
M2-4:2 FTS	219	*5	25 - 150	10/05/20 05:28	10/08/20 02:32	1
M2-6:2 FTS	147		25 - 150	10/05/20 05:28	10/08/20 02:32	1
M2-8:2 FTS	170	*5	25 - 150	10/05/20 05:28	10/08/20 02:32	1
d-N-MeFOSA-M	55		25 - 150	10/05/20 05:28	10/08/20 02:32	1
d7-N-MeFOSE-M	47		10 - 120	10/05/20 05:28	10/08/20 02:32	1
d-N-EtFOSA-M	56		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C2 PFHxDA	91		25 - 150	10/05/20 05:28	10/08/20 02:32	1
13C3 HFPO-DA	72		25 - 150	10/05/20 05:28	10/08/20 02:32	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	0.34	J	0.49	0.20	ug/Kg	☼	10/08/20 21:10	10/13/20 18:03	1
NEtFOSE	0.17	J	0.20	0.035	ug/Kg	☼	10/08/20 21:10	10/13/20 18:03	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	98		25 - 150	10/08/20 21:10	10/13/20 18:03	1			
d9-N-EtFOSE-M	59		10 - 120	10/08/20 21:10	10/13/20 18:03	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>
Percent Moisture	6.6		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	93.4		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-162

Lab Sample ID: 320-65223-6

Date Collected: 09/29/20 10:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 94.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.049	J B	0.19	0.027	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluoropentanoic acid (PFPeA)	0.17	J	0.19	0.074	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorohexanoic acid (PFHxA)	0.12	J B	0.19	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluoroheptanoic acid (PFHpA)	0.098	J	0.19	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorooctanoic acid (PFOA)	0.28		0.19	0.083	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorononanoic acid (PFNA)	0.15	J	0.19	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorodecanoic acid (PFDA)	0.11	J	0.19	0.021	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluoroundecanoic acid (PFUnA)	0.042	J	0.19	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorododecanoic acid (PFDoA)	<0.19		0.19	0.065	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorotridecanoic acid (PFTriA)	<0.19		0.19	0.049	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorotetradecanoic acid (PFTeA)	<0.19		0.19	0.052	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.19		0.19	0.042	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.19		0.19	0.027	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		0.19	0.024	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.19		0.19	0.030	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		0.19	0.034	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorodecanesulfonic acid (PFDS)	<0.19		0.19	0.038	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorooctanesulfonamide (FOSA)	<0.19		0.19	0.079	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluoropentanesulfonic acid (PFPeS)	<0.19		0.19	0.019	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorononanesulfonic acid (PFNS)	<0.19		0.19	0.019	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.9		1.9	0.38	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		1.9	0.36	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
4:2 FTS	<1.9		1.9	0.36	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
6:2 FTS	<1.9		1.9	0.14	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
8:2 FTS	<1.9		1.9	0.24	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
10:2 FTS	<0.19		0.19	0.048	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
NEtFOSA	<0.19		0.19	0.023	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
NMeFOSA	<0.19		0.19	0.040	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
Perfluorododecanesulfonic acid (PFDoS)	<0.19		0.19	0.058	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
NMeFOSE	<0.19		0.19	0.069	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
NEtFOSE	<0.19		0.19	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
F-53B Major	<0.19		0.19	0.026	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
HFPO-DA (GenX)	<0.24		0.24	0.11	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
F-53B Minor	<0.19		0.19	0.021	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1
DONA	<0.19		0.19	0.017	ug/Kg	☼	10/05/20 05:28	10/08/20 02:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	91		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C4 PFBA	72		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C5 PFPeA	79		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C2 PFHxA	92		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C4 PFHpA	89		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C4 PFOA	88		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C5 PFNA	92		25 - 150	10/05/20 05:28	10/08/20 02:42	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-162

Lab Sample ID: 320-65223-6

Date Collected: 09/29/20 10:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 94.8

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	89		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C2 PFUnA	87		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C2 PFDoA	92		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C2 PFTeDA	100		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C3 PFBS	79		25 - 150	10/05/20 05:28	10/08/20 02:42	1
18O2 PFHxS	88		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C4 PFOS	84		25 - 150	10/05/20 05:28	10/08/20 02:42	1
d3-NMeFOSAA	85		25 - 150	10/05/20 05:28	10/08/20 02:42	1
d5-NEtFOSAA	88		25 - 150	10/05/20 05:28	10/08/20 02:42	1
M2-4:2 FTS	234	*5	25 - 150	10/05/20 05:28	10/08/20 02:42	1
M2-6:2 FTS	143		25 - 150	10/05/20 05:28	10/08/20 02:42	1
M2-8:2 FTS	172	*5	25 - 150	10/05/20 05:28	10/08/20 02:42	1
d9-N-EtFOSE-M	51		10 - 120	10/05/20 05:28	10/08/20 02:42	1
d-N-MeFOSA-M	58		25 - 150	10/05/20 05:28	10/08/20 02:42	1
d7-N-MeFOSE-M	49		10 - 120	10/05/20 05:28	10/08/20 02:42	1
d-N-EtFOSA-M	58		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C2 PFHxDA	86		25 - 150	10/05/20 05:28	10/08/20 02:42	1
13C3 HFPO-DA	80		25 - 150	10/05/20 05:28	10/08/20 02:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.39	J	0.50	0.20	ug/Kg	☼	10/08/20 21:10	10/13/20 18:13	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	101		25 - 150	10/08/20 21:10	10/13/20 18:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.2		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	94.8		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-163

Lab Sample ID: 320-65223-7

Date Collected: 09/29/20 10:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.091	J B	0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluoropentanoic acid (PFPeA)	0.15	J	0.20	0.077	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorohexanoic acid (PFHxA)	0.12	J I B	0.20	0.042	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluoroheptanoic acid (PFHpA)	0.080	J	0.20	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorooctanoic acid (PFOA)	0.65		0.20	0.086	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorononanoic acid (PFNA)	0.11	J	0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorodecanoic acid (PFDA)	0.19	J	0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorotridecanoic acid (PFTrIA)	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.046	J B	0.20	0.044	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorohexanesulfonic acid (PFHxS)	0.055	J	0.20	0.031	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:28	10/08/20 02:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	95		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C4 PFBA	72		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C5 PFPeA	80		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C2 PFHxA	88		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C4 PFHpA	92		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C4 PFOA	87		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C5 PFNA	90		25 - 150	10/05/20 05:28	10/08/20 02:51	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-163

Lab Sample ID: 320-65223-7

Date Collected: 09/29/20 10:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.8

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	90		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C2 PFUnA	90		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C2 PFDoA	88		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C2 PFTeDA	99		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C3 PFBS	82		25 - 150	10/05/20 05:28	10/08/20 02:51	1
18O2 PFHxS	86		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C4 PFOS	84		25 - 150	10/05/20 05:28	10/08/20 02:51	1
d3-NMeFOSAA	80		25 - 150	10/05/20 05:28	10/08/20 02:51	1
d5-NEtFOSAA	83		25 - 150	10/05/20 05:28	10/08/20 02:51	1
M2-4:2 FTS	225	*5	25 - 150	10/05/20 05:28	10/08/20 02:51	1
M2-6:2 FTS	129		25 - 150	10/05/20 05:28	10/08/20 02:51	1
M2-8:2 FTS	159	*5	25 - 150	10/05/20 05:28	10/08/20 02:51	1
d9-N-EtFOSE-M	41		10 - 120	10/05/20 05:28	10/08/20 02:51	1
d-N-MeFOSA-M	64		25 - 150	10/05/20 05:28	10/08/20 02:51	1
d7-N-MeFOSE-M	39		10 - 120	10/05/20 05:28	10/08/20 02:51	1
d-N-EtFOSA-M	62		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C2 PFHxDA	90		25 - 150	10/05/20 05:28	10/08/20 02:51	1
13C3 HFPO-DA	82		25 - 150	10/05/20 05:28	10/08/20 02:51	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	0.63		0.47	0.19	ug/Kg	☼	10/08/20 21:10	10/13/20 18:41	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	96		25 - 150	10/08/20 21:10	10/13/20 18:41	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>
Percent Moisture	4.2		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	95.8		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-164

Lab Sample ID: 320-65223-8

Date Collected: 09/29/20 10:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 93.1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.17	J B	0.21	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.081	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorohexanoic acid (PFHxA)	0.23	B	0.21	0.044	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluoroheptanoic acid (PFHpA)	0.71		0.21	0.030	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorooctanoic acid (PFOA)	0.43		0.21	0.090	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorononanoic acid (PFNA)	0.28		0.21	0.038	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorodecanoic acid (PFDA)	0.32		0.21	0.023	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.038	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.070	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorotridecanoic acid (PFTrIA)	<0.21		0.21	0.054	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.057	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.048	J B	0.21	0.046	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.029	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorohexanesulfonic acid (PFHxS)	0.038	J	0.21	0.033	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.041	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.086	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.41	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
4:2 FTS	<2.1		2.1	0.39	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
8:2 FTS	<2.1		2.1	0.26	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
10:2 FTS	<0.21		0.21	0.052	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
NMeFOSA	<0.21		0.21	0.043	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.063	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
NMeFOSE	<0.21		0.21	0.074	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
NEtFOSE	<0.21		0.21	0.038	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
F-53B Major	<0.21		0.21	0.028	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
HFPO-DA (GenX)	<0.26		0.26	0.12	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/05/20 05:28	10/08/20 03:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	94		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C4 PFBA	73		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C5 PFPeA	81		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C2 PFHxA	87		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C4 PFHpA	90		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C4 PFOA	91		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C5 PFNA	96		25 - 150	10/05/20 05:28	10/08/20 03:01	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-164

Lab Sample ID: 320-65223-8

Date Collected: 09/29/20 10:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 93.1

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	99		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C2 PFUnA	95		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C2 PFDoA	94		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C2 PFTeDA	104		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C3 PFBS	82		25 - 150	10/05/20 05:28	10/08/20 03:01	1
18O2 PFHxS	87		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C4 PFOS	84		25 - 150	10/05/20 05:28	10/08/20 03:01	1
d3-NMeFOSAA	92		25 - 150	10/05/20 05:28	10/08/20 03:01	1
d5-NEtFOSAA	93		25 - 150	10/05/20 05:28	10/08/20 03:01	1
M2-4:2 FTS	178	*5	25 - 150	10/05/20 05:28	10/08/20 03:01	1
M2-6:2 FTS	154	*5	25 - 150	10/05/20 05:28	10/08/20 03:01	1
M2-8:2 FTS	187	*5	25 - 150	10/05/20 05:28	10/08/20 03:01	1
d9-N-EtFOSE-M	36		10 - 120	10/05/20 05:28	10/08/20 03:01	1
d-N-MeFOSA-M	64		25 - 150	10/05/20 05:28	10/08/20 03:01	1
d7-N-MeFOSE-M	36		10 - 120	10/05/20 05:28	10/08/20 03:01	1
d-N-EtFOSA-M	66		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C2 PFHxDA	93		25 - 150	10/05/20 05:28	10/08/20 03:01	1
13C3 HFPO-DA	81		25 - 150	10/05/20 05:28	10/08/20 03:01	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	1.2		0.51	0.21	ug/Kg	☼	10/08/20 21:10	10/13/20 18:50	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	97		25 - 150	10/08/20 21:10	10/13/20 18:50	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>
Percent Moisture	6.9		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	93.1		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-166

Lab Sample ID: 320-65223-9

Date Collected: 09/29/20 10:55

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.035	J B	0.20	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluoropentanoic acid (PFPeA)	0.17	J	0.20	0.077	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorohexanoic acid (PFHxA)	0.40		0.20	0.042	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluoroheptanoic acid (PFHpA)	0.15	J	0.20	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorooctanoic acid (PFOA)	9.1	F2	0.20	0.086	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorononanoic acid (PFNA)	0.063	J	0.20	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorodecanoic acid (PFDA)	1.0	F2 F1	0.20	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluoroundecanoic acid (PFUnA)	0.11	J	0.20	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.044	J B	0.20	0.044	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:32	10/08/20 04:15	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	93		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C4 PFBA	72		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C5 PFPeA	79		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C2 PFHxA	92		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C4 PFHpA	91		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C4 PFOA	89		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C5 PFNA	93		25 - 150	10/05/20 05:32	10/08/20 04:15	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-166

Lab Sample ID: 320-65223-9

Date Collected: 09/29/20 10:55

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.2

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	96		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C2 PFUnA	92		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C2 PFDoA	94		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C2 PFTeDA	95		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C3 PFBS	82		25 - 150	10/05/20 05:32	10/08/20 04:15	1
18O2 PFHxS	85		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C4 PFOS	85		25 - 150	10/05/20 05:32	10/08/20 04:15	1
d3-NMeFOSAA	88		25 - 150	10/05/20 05:32	10/08/20 04:15	1
d5-NEtFOSAA	86		25 - 150	10/05/20 05:32	10/08/20 04:15	1
M2-4:2 FTS	231	*5	25 - 150	10/05/20 05:32	10/08/20 04:15	1
M2-6:2 FTS	139		25 - 150	10/05/20 05:32	10/08/20 04:15	1
M2-8:2 FTS	168	*5	25 - 150	10/05/20 05:32	10/08/20 04:15	1
d9-N-EtFOSE-M	53		10 - 120	10/05/20 05:32	10/08/20 04:15	1
d-N-MeFOSA-M	65		25 - 150	10/05/20 05:32	10/08/20 04:15	1
d7-N-MeFOSE-M	51		10 - 120	10/05/20 05:32	10/08/20 04:15	1
d-N-EtFOSA-M	61		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C2 PFHxDA	92		25 - 150	10/05/20 05:32	10/08/20 04:15	1
13C3 HFPO-DA	79		25 - 150	10/05/20 05:32	10/08/20 04:15	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	0.29	J	0.51	0.20	ug/Kg	☼	10/08/20 21:10	10/13/20 18:59	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	103		25 - 150	10/08/20 21:10	10/13/20 18:59	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>
Percent Moisture	3.8		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	96.2		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-165

Lab Sample ID: 320-65223-10

Date Collected: 09/29/20 11:05

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.12	J B	0.19	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluoropentanoic acid (PFPeA)	0.13	J	0.19	0.075	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorohexanoic acid (PFHxA)	0.16	J	0.19	0.041	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluoroheptanoic acid (PFHpA)	0.064	J	0.19	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorooctanoic acid (PFOA)	2.5		0.19	0.083	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorononanoic acid (PFNA)	0.042	J	0.19	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorodecanoic acid (PFDA)	0.12	J	0.19	0.021	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluoroundecanoic acid (PFUnA)	<0.19		0.19	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorododecanoic acid (PFDoA)	<0.19		0.19	0.065	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorotridecanoic acid (PFTriA)	<0.19		0.19	0.049	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorotetradecanoic acid (PFTeA)	<0.19		0.19	0.052	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.19		0.19	0.043	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.19		0.19	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		0.19	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorohexanesulfonic acid (PFHxS)	<0.19		0.19	0.030	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		0.19	0.034	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorodecanesulfonic acid (PFDS)	<0.19		0.19	0.038	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorooctanesulfonamide (FOSA)	<0.19		0.19	0.080	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluoropentanesulfonic acid (PFPeS)	<0.19		0.19	0.019	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorononanesulfonic acid (PFNS)	<0.19		0.19	0.019	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.9		1.9	0.38	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		1.9	0.36	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
4:2 FTS	<1.9		1.9	0.36	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
6:2 FTS	0.18	J	1.9	0.15	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
8:2 FTS	<1.9		1.9	0.24	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
10:2 FTS	<0.19		0.19	0.048	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
NEtFOSA	<0.19		0.19	0.023	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
NMeFOSA	<0.19		0.19	0.040	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
Perfluorododecanesulfonic acid (PFDoS)	<0.19		0.19	0.058	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
NMeFOSE	<0.19		0.19	0.069	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
NEtFOSE	<0.19		0.19	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
F-53B Major	<0.19		0.19	0.026	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
HFPO-DA (GenX)	<0.24		0.24	0.11	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
F-53B Minor	<0.19		0.19	0.021	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1
DONA	<0.19		0.19	0.017	ug/Kg	☼	10/05/20 05:32	10/08/20 04:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	86		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C4 PFBA	78		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C5 PFPeA	80		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C2 PFHxA	86		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C4 PFHpA	91		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C4 PFOA	87		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C5 PFNA	96		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C2 PFDA	91		25 - 150	10/05/20 05:32	10/08/20 04:44	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-165

Lab Sample ID: 320-65223-10

Date Collected: 09/29/20 11:05

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.0

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	87		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C2 PFDoA	93		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C2 PFTeDA	104		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C3 PFBS	80		25 - 150	10/05/20 05:32	10/08/20 04:44	1
18O2 PFHxS	85		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C4 PFOS	86		25 - 150	10/05/20 05:32	10/08/20 04:44	1
d3-NMeFOSAA	55		25 - 150	10/05/20 05:32	10/08/20 04:44	1
d5-NEtFOSAA	52		25 - 150	10/05/20 05:32	10/08/20 04:44	1
M2-4:2 FTS	112		25 - 150	10/05/20 05:32	10/08/20 04:44	1
M2-6:2 FTS	92		25 - 150	10/05/20 05:32	10/08/20 04:44	1
M2-8:2 FTS	94		25 - 150	10/05/20 05:32	10/08/20 04:44	1
d9-N-EtFOSE-M	18		10 - 120	10/05/20 05:32	10/08/20 04:44	1
d-N-MeFOSA-M	75		25 - 150	10/05/20 05:32	10/08/20 04:44	1
d7-N-MeFOSE-M	17		10 - 120	10/05/20 05:32	10/08/20 04:44	1
d-N-EtFOSA-M	68		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C2 PFHxDA	96		25 - 150	10/05/20 05:32	10/08/20 04:44	1
13C3 HFPO-DA	84		25 - 150	10/05/20 05:32	10/08/20 04:44	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	0.22	J	0.51	0.20	ug/Kg	☼	10/08/20 21:10	10/13/20 19:27	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	107		25 - 150	10/08/20 21:10	10/13/20 19:27	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>
Percent Moisture	4.0		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	96.0		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-167

Lab Sample ID: 320-65223-11

Date Collected: 09/29/20 11:15

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.12	J B	0.20	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluoropentanoic acid (PFPeA)	0.12	J	0.20	0.079	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorohexanoic acid (PFHxA)	0.17	J	0.20	0.043	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluoroheptanoic acid (PFHpA)	0.32		0.20	0.030	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorooctanoic acid (PFOA)	0.66		0.20	0.088	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorononanoic acid (PFNA)	1.2		0.20	0.037	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorodecanoic acid (PFDA)	2.0		0.20	0.023	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.037	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.069	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.052	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.055	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.050	J B	0.20	0.045	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.026	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorohexanesulfonic acid (PFHxS)	0.037	J	0.20	0.032	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.040	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.084	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.40	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.38	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
4:2 FTS	<2.0		2.0	0.38	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
8:2 FTS	<2.0		2.0	0.26	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
10:2 FTS	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
NEtFOSA	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
NMeFOSA	<0.20		0.20	0.042	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.061	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
NMeFOSE	<0.20		0.20	0.073	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
NEtFOSE	<0.20		0.20	0.037	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
F-53B Major	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
F-53B Minor	<0.20		0.20	0.023	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:32	10/08/20 04:53	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	86		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C4 PFBA	68		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C5 PFPeA	78		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C2 PFHxA	87		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C4 PFHpA	88		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C4 PFOA	86		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C5 PFNA	91		25 - 150	10/05/20 05:32	10/08/20 04:53	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-167

Lab Sample ID: 320-65223-11

Date Collected: 09/29/20 11:15

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.7

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	88		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C2 PFUnA	92		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C2 PFDoA	92		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C2 PFTeDA	101		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C3 PFBS	78		25 - 150	10/05/20 05:32	10/08/20 04:53	1
18O2 PFHxS	82		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C4 PFOS	84		25 - 150	10/05/20 05:32	10/08/20 04:53	1
d3-NMeFOSAA	90		25 - 150	10/05/20 05:32	10/08/20 04:53	1
d5-NEtFOSAA	95		25 - 150	10/05/20 05:32	10/08/20 04:53	1
M2-4:2 FTS	214	*5	25 - 150	10/05/20 05:32	10/08/20 04:53	1
M2-6:2 FTS	183	*5	25 - 150	10/05/20 05:32	10/08/20 04:53	1
M2-8:2 FTS	219	*5	25 - 150	10/05/20 05:32	10/08/20 04:53	1
d9-N-EtFOSE-M	59		10 - 120	10/05/20 05:32	10/08/20 04:53	1
d-N-MeFOSA-M	68		25 - 150	10/05/20 05:32	10/08/20 04:53	1
d7-N-MeFOSE-M	59		10 - 120	10/05/20 05:32	10/08/20 04:53	1
d-N-EtFOSA-M	70		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C2 PFHxDA	89		25 - 150	10/05/20 05:32	10/08/20 04:53	1
13C3 HFPO-DA	78		25 - 150	10/05/20 05:32	10/08/20 04:53	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	1.4		0.52	0.21	ug/Kg	☼	10/08/20 21:14	10/13/20 20:42	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	93		25 - 150	10/08/20 21:14	10/13/20 20:42	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>
Percent Moisture	7.3		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	92.7		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-168

Lab Sample ID: 320-65223-12

Date Collected: 09/29/20 11:25

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.52	B	0.21	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluoropentanoic acid (PFPeA)	1.2		0.21	0.079	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorohexanoic acid (PFHxA)	0.97		0.21	0.043	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluoroheptanoic acid (PFHpA)	1.4		0.21	0.030	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorooctanoic acid (PFOA)	13		0.21	0.089	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorononanoic acid (PFNA)	13		0.21	0.037	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorodecanoic acid (PFDA)	3.0		0.21	0.023	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluoroundecanoic acid (PFUnA)	1.1		0.21	0.037	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorododecanoic acid (PFDoA)	0.13	J	0.21	0.069	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorotridecanoic acid (PFTriA)	0.094	J	0.21	0.053	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.056	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.045	J B	0.21	0.045	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorohexanesulfonic acid (PFHxS)	0.33		0.21	0.032	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.045	J	0.21	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.040	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorooctanesulfonamide (FOSA)	0.099	J	0.21	0.084	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.40	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.38	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
4:2 FTS	<2.1		2.1	0.38	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
6:2 FTS	3.0		2.1	0.15	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
8:2 FTS	5.9		2.1	0.26	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
10:2 FTS	0.082	J	0.21	0.051	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
NMeFOSA	<0.21		0.21	0.042	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.062	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
NMeFOSE	<0.21		0.21	0.073	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
NEtFOSE	0.046	J	0.21	0.037	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
F-53B Major	<0.21		0.21	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/05/20 05:32	10/08/20 05:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	86		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C4 PFBA	65		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C5 PFPeA	73		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C2 PFHxA	88		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C4 PFHpA	88		25 - 150	10/05/20 05:32	10/08/20 05:02	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-168

Lab Sample ID: 320-65223-12

Date Collected: 09/29/20 11:25

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.0

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	85		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C5 PFNA	87		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C2 PFDA	86		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C2 PFUnA	85		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C2 PFDoA	87		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C2 PFTeDA	97		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C3 PFBS	78		25 - 150	10/05/20 05:32	10/08/20 05:02	1
18O2 PFHxS	88		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C4 PFOS	81		25 - 150	10/05/20 05:32	10/08/20 05:02	1
d3-NMeFOSAA	69		25 - 150	10/05/20 05:32	10/08/20 05:02	1
d5-NEtFOSAA	76		25 - 150	10/05/20 05:32	10/08/20 05:02	1
M2-4:2 FTS	247	*5	25 - 150	10/05/20 05:32	10/08/20 05:02	1
M2-6:2 FTS	171	*5	25 - 150	10/05/20 05:32	10/08/20 05:02	1
M2-8:2 FTS	185	*5	25 - 150	10/05/20 05:32	10/08/20 05:02	1
d9-N-EtFOSE-M	47		10 - 120	10/05/20 05:32	10/08/20 05:02	1
d-N-MeFOSA-M	53		25 - 150	10/05/20 05:32	10/08/20 05:02	1
d7-N-MeFOSE-M	41		10 - 120	10/05/20 05:32	10/08/20 05:02	1
d-N-EtFOSA-M	54		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C2 PFHxDA	91		25 - 150	10/05/20 05:32	10/08/20 05:02	1
13C3 HFPO-DA	78		25 - 150	10/05/20 05:32	10/08/20 05:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	6.2		0.49	0.20	ug/Kg	☼	10/08/20 21:14	10/13/20 21:10	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	94		25 - 150	10/08/20 21:14	10/13/20 21:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.0		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	96.0		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-169

Lab Sample ID: 320-65223-13

Date Collected: 09/29/20 11:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.5	B	0.21	0.030	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluoropentanoic acid (PFPeA)	2.0		0.21	0.082	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorohexanoic acid (PFHxA)	3.6		0.21	0.045	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluoroheptanoic acid (PFHpA)	2.4		0.21	0.031	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorononanoic acid (PFNA)	4.1		0.21	0.038	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorodecanoic acid (PFDA)	9.5		0.21	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluoroundecanoic acid (PFUnA)	1.9		0.21	0.038	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorododecanoic acid (PFDoA)	0.17	J	0.21	0.072	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.055	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.058	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.051	J B	0.21	0.047	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.030	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorohexanesulfonic acid (PFHxS)	0.057	J I	0.21	0.033	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.042	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorooctanesulfonamide (FOSA)	0.20	J	0.21	0.088	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.42	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.40	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
4:2 FTS	<2.1		2.1	0.40	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
NEtFOSA	<0.21		0.21	0.026	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
NMeFOSA	<0.21		0.21	0.044	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.064	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
NMeFOSE	<0.21		0.21	0.076	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
NEtFOSE	<0.21		0.21	0.038	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
F-53B Major	<0.21		0.21	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
F-53B Minor	<0.21		0.21	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/05/20 05:32	10/08/20 05:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	79		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C4 PFBA	81		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C5 PFPeA	90		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C2 PFHxA	97		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C4 PFHpA	98		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C4 PFOA	86		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C5 PFNA	105		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C2 PFDA	82		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C2 PFUnA	103		25 - 150	10/05/20 05:32	10/08/20 05:30	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-169

Lab Sample ID: 320-65223-13

Date Collected: 09/29/20 11:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.8

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	107		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C2 PFTeDA	112		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C3 PFBS	90		25 - 150	10/05/20 05:32	10/08/20 05:30	1
18O2 PFHxS	94		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C4 PFOS	97		25 - 150	10/05/20 05:32	10/08/20 05:30	1
d3-NMeFOSAA	73		25 - 150	10/05/20 05:32	10/08/20 05:30	1
d5-NEtFOSAA	111		25 - 150	10/05/20 05:32	10/08/20 05:30	1
M2-4:2 FTS	208	*5	25 - 150	10/05/20 05:32	10/08/20 05:30	1
d9-N-EtFOSE-M	45		10 - 120	10/05/20 05:32	10/08/20 05:30	1
d-N-MeFOSA-M	66		25 - 150	10/05/20 05:32	10/08/20 05:30	1
d7-N-MeFOSE-M	45		10 - 120	10/05/20 05:32	10/08/20 05:30	1
d-N-EtFOSA-M	64		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C2 PFHxDA	103		25 - 150	10/05/20 05:32	10/08/20 05:30	1
13C3 HFPO-DA	89		25 - 150	10/05/20 05:32	10/08/20 05:30	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)	74		4.3	1.8	ug/Kg	☼	10/05/20 05:32	10/09/20 18:36	20
6:2 FTS	28	J	43	3.2	ug/Kg	☼	10/05/20 05:32	10/09/20 18:36	20
8:2 FTS	270		43	5.3	ug/Kg	☼	10/05/20 05:32	10/09/20 18:36	20
10:2 FTS	12		4.3	1.1	ug/Kg	☼	10/05/20 05:32	10/09/20 18:36	20

<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	83		25 - 150	10/05/20 05:32	10/09/20 18:36	20
M2-6:2 FTS	91		25 - 150	10/05/20 05:32	10/09/20 18:36	20
M2-8:2 FTS	120		25 - 150	10/05/20 05:32	10/09/20 18:36	20

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

<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>
Perfluorooctanesulfonic acid (PFOS)	0.64		0.51	0.20	ug/Kg	☼	10/08/20 21:14	10/13/20 21:20	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	105		25 - 150	10/08/20 21:14	10/13/20 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>
Percent Moisture	7.2		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	92.8		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-170

Lab Sample ID: 320-65223-14

Date Collected: 09/29/20 11:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 89.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.057	J B	0.22	0.031	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluoropentanoic acid (PFPeA)	0.76		0.22	0.084	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorohexanoic acid (PFHxA)	0.35		0.22	0.046	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluoroheptanoic acid (PFHpA)	0.27		0.22	0.032	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorooctanoic acid (PFOA)	5.9		0.22	0.094	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorononanoic acid (PFNA)	1.0		0.22	0.039	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorodecanoic acid (PFDA)	0.99		0.22	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluoroundecanoic acid (PFUnA)	0.58		0.22	0.039	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorododecanoic acid (PFDoA)	0.098	J	0.22	0.073	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorotridecanoic acid (PFTriA)	0.084	J	0.22	0.056	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.059	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.055	J B	0.22	0.048	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.031	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorohexanesulfonic acid (PFHxS)	0.20	J	0.22	0.034	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.038	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.043	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorooctanesulfonamide (FOSA)	0.18	J	0.22	0.089	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.43	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.40	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
4:2 FTS	<2.2		2.2	0.40	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
6:2 FTS	0.25	J	2.2	0.16	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
8:2 FTS	0.99	J	2.2	0.27	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
10:2 FTS	0.064	J	0.22	0.055	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
NEtFOSA	<0.22		0.22	0.026	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
NMeFOSA	<0.22		0.22	0.045	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.065	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
NMeFOSE	<0.22		0.22	0.077	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
NEtFOSE	0.099	J	0.22	0.039	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
F-53B Major	<0.22		0.22	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
F-53B Minor	<0.22		0.22	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1
DONA	<0.22		0.22	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 05:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	81		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C4 PFBA	55		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C5 PFPeA	67		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C2 PFHxA	83		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C4 PFHpA	85		25 - 150	10/05/20 05:32	10/08/20 05:40	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-170

Lab Sample ID: 320-65223-14

Date Collected: 09/29/20 11:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 89.8

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	85		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C5 PFNA	88		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C2 PFDA	82		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C2 PFUnA	89		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C2 PFDoA	85		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C2 PFTeDA	96		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C3 PFBS	79		25 - 150	10/05/20 05:32	10/08/20 05:40	1
18O2 PFHxS	85		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C4 PFOS	81		25 - 150	10/05/20 05:32	10/08/20 05:40	1
d3-NMeFOSAA	80		25 - 150	10/05/20 05:32	10/08/20 05:40	1
d5-NEtFOSAA	83		25 - 150	10/05/20 05:32	10/08/20 05:40	1
M2-4:2 FTS	255	*5	25 - 150	10/05/20 05:32	10/08/20 05:40	1
M2-6:2 FTS	215	*5	25 - 150	10/05/20 05:32	10/08/20 05:40	1
M2-8:2 FTS	202	*5	25 - 150	10/05/20 05:32	10/08/20 05:40	1
d9-N-EtFOSE-M	49		10 - 120	10/05/20 05:32	10/08/20 05:40	1
d-N-MeFOSA-M	55		25 - 150	10/05/20 05:32	10/08/20 05:40	1
d7-N-MeFOSE-M	49		10 - 120	10/05/20 05:32	10/08/20 05:40	1
d-N-EtFOSA-M	57		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C2 PFHxDA	93		25 - 150	10/05/20 05:32	10/08/20 05:40	1
13C3 HFPO-DA	76		25 - 150	10/05/20 05:32	10/08/20 05:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	3.6		0.54	0.22	ug/Kg	☆	10/08/20 21:14	10/13/20 21:29	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	100		25 - 150	10/08/20 21:14	10/13/20 21:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.2		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	89.8		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-171

Lab Sample ID: 320-65223-15

Date Collected: 09/29/20 11:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.47	B	0.20	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluoropentanoic acid (PFPeA)	1.6		0.20	0.077	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorohexanoic acid (PFHxA)	1.3		0.20	0.042	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluoroheptanoic acid (PFHpA)	0.62		0.20	0.029	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorooctanoic acid (PFOA)	7.8		0.20	0.086	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorononanoic acid (PFNA)	0.29		0.20	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorodecanoic acid (PFDA)	1.1		0.20	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluoroundecanoic acid (PFUnA)	0.16	J	0.20	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.046	J B	0.20	0.044	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
6:2 FTS	0.48	J	2.0	0.15	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
8:2 FTS	0.31	J	2.0	0.25	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:32	10/08/20 05:49	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	92		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C4 PFBA	68		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C5 PFPeA	76		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C2 PFHxA	87		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C4 PFHpA	90		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C4 PFOA	87		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C5 PFNA	91		25 - 150	10/05/20 05:32	10/08/20 05:49	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-171

Lab Sample ID: 320-65223-15

Date Collected: 09/29/20 11:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.6

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	91		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C2 PFUnA	89		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C2 PFDoA	92		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C2 PFTeDA	106		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C3 PFBS	81		25 - 150	10/05/20 05:32	10/08/20 05:49	1
18O2 PFHxS	85		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C4 PFOS	89		25 - 150	10/05/20 05:32	10/08/20 05:49	1
d3-NMeFOSAA	81		25 - 150	10/05/20 05:32	10/08/20 05:49	1
d5-NEtFOSAA	85		25 - 150	10/05/20 05:32	10/08/20 05:49	1
M2-4:2 FTS	220	*5	25 - 150	10/05/20 05:32	10/08/20 05:49	1
M2-6:2 FTS	163	*5	25 - 150	10/05/20 05:32	10/08/20 05:49	1
M2-8:2 FTS	181	*5	25 - 150	10/05/20 05:32	10/08/20 05:49	1
d9-N-EtFOSE-M	51		10 - 120	10/05/20 05:32	10/08/20 05:49	1
d-N-MeFOSA-M	59		25 - 150	10/05/20 05:32	10/08/20 05:49	1
d7-N-MeFOSE-M	45		10 - 120	10/05/20 05:32	10/08/20 05:49	1
d-N-EtFOSA-M	60		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C2 PFHxDA	90		25 - 150	10/05/20 05:32	10/08/20 05:49	1
13C3 HFPO-DA	74		25 - 150	10/05/20 05:32	10/08/20 05:49	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	0.68		0.52	0.21	ug/Kg	☼	10/08/20 21:14	10/13/20 21:57	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	103		25 - 150	10/08/20 21:14	10/13/20 21:57	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>
Percent Moisture	7.4		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	92.6		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: DUP-01

Lab Sample ID: 320-65223-16

Date Collected: 09/28/20 00:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 97.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.028	J B	0.20	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluoropentanoic acid (PFPeA)	0.18	J	0.20	0.075	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorohexanoic acid (PFHxA)	0.18	J	0.20	0.041	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluoroheptanoic acid (PFHpA)	0.13	J	0.20	0.028	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorooctanoic acid (PFOA)	1.0		0.20	0.084	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorononanoic acid (PFNA)	0.11	J	0.20	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorodecanoic acid (PFDA)	0.15	J	0.20	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluoroundecanoic acid (PFUnA)	0.075	J	0.20	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.066	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.050	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.053	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.058	J B	0.20	0.043	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.027	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorohexanesulfonic acid (PFHxS)	0.034	J I	0.20	0.030	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.034	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorodecanesulfonic acid (PFDS)	0.039	J	0.20	0.038	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorooctanesulfonamide (FOSA)	0.44		0.20	0.080	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorononanesulfonic acid (PFNS)	0.033	J	0.20	0.020	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.38	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.36	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
4:2 FTS	<2.0		2.0	0.36	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
8:2 FTS	<2.0		2.0	0.24	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
10:2 FTS	<0.20		0.20	0.049	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
NMeFOSA	<0.20		0.20	0.040	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.059	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
NMeFOSE	<0.20		0.20	0.070	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
NEtFOSE	0.086	J	0.20	0.035	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
F-53B Major	<0.20		0.20	0.026	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
HFPO-DA (GenX)	<0.24		0.24	0.11	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/05/20 05:32	10/08/20 05:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	83		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C4 PFBA	64		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C5 PFPeA	71		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C2 PFHxA	83		25 - 150	10/05/20 05:32	10/08/20 05:58	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: DUP-01

Lab Sample ID: 320-65223-16

Date Collected: 09/28/20 00:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 97.2

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	87		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C4 PFOA	85		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C5 PFNA	87		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C2 PFDA	81		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C2 PFUnA	92		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C2 PFDoA	79		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C2 PFTeDA	98		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C3 PFBS	78		25 - 150	10/05/20 05:32	10/08/20 05:58	1
18O2 PFHxS	89		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C4 PFOS	80		25 - 150	10/05/20 05:32	10/08/20 05:58	1
d3-NMeFOSAA	67		25 - 150	10/05/20 05:32	10/08/20 05:58	1
d5-NEtFOSAA	77		25 - 150	10/05/20 05:32	10/08/20 05:58	1
M2-4:2 FTS	230	*5	25 - 150	10/05/20 05:32	10/08/20 05:58	1
M2-6:2 FTS	154	*5	25 - 150	10/05/20 05:32	10/08/20 05:58	1
M2-8:2 FTS	159	*5	25 - 150	10/05/20 05:32	10/08/20 05:58	1
d9-N-EtFOSE-M	45		10 - 120	10/05/20 05:32	10/08/20 05:58	1
d-N-MeFOSA-M	57		25 - 150	10/05/20 05:32	10/08/20 05:58	1
d7-N-MeFOSE-M	52		10 - 120	10/05/20 05:32	10/08/20 05:58	1
d-N-EtFOSA-M	41		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C2 PFHxDA	53		25 - 150	10/05/20 05:32	10/08/20 05:58	1
13C3 HFPO-DA	75		25 - 150	10/05/20 05:32	10/08/20 05:58	1

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

<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>
Perfluorooctanesulfonic acid (PFOS)	4.0		0.51	0.20	ug/Kg	☆	10/08/20 21:14	10/13/20 22:06	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	99		25 - 150	10/08/20 21:14	10/13/20 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>
Percent Moisture	2.8		0.1	0.1	%			10/02/20 12:06	1
Percent Solids	97.2		0.1	0.1	%			10/02/20 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: EB-09-28-2020

Lab Sample ID: 320-65223-17

Date Collected: 09/28/20 14:10

Matrix: Water

Date Received: 10/01/20 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.6		4.6	2.2	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluoropentanoic acid (PFPeA)	<1.8		1.8	0.45	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorohexanoic acid (PFHxA)	<1.8		1.8	0.53	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluoroheptanoic acid (PFHpA)	<1.8		1.8	0.23	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorooctanoic acid (PFOA)	<1.8		1.8	0.78	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorononanoic acid (PFNA)	<1.8		1.8	0.25	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.29	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.51	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.82	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.86	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorobutanesulfonic acid (PFBS)	<1.8		1.8	0.18	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.28	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorohexanesulfonic acid (PFHxS)	<1.8		1.8	0.52	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	0.50	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.89	ng/L		10/02/20 11:49	10/03/20 12:24	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.90	ng/L		10/02/20 11:49	10/03/20 12:24	1
NEtFOSA	<1.8		1.8	0.80	ng/L		10/02/20 11:49	10/03/20 12:24	1
NMeFOSA	<1.8		1.8	0.40	ng/L		10/02/20 11:49	10/03/20 12:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/02/20 11:49	10/03/20 12:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		10/02/20 11:49	10/03/20 12:24	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/02/20 11:49	10/03/20 12:24	1
NEtFOSE	<1.8		1.8	0.78	ng/L		10/02/20 11:49	10/03/20 12:24	1
4:2 FTS	<1.8		1.8	0.22	ng/L		10/02/20 11:49	10/03/20 12:24	1
6:2 FTS	<4.6		4.6	2.3	ng/L		10/02/20 11:49	10/03/20 12:24	1
8:2 FTS	<1.8		1.8	0.42	ng/L		10/02/20 11:49	10/03/20 12:24	1
10:2 FTS	<1.8		1.8	0.62	ng/L		10/02/20 11:49	10/03/20 12:24	1
DONA	<1.8		1.8	0.37	ng/L		10/02/20 11:49	10/03/20 12:24	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/02/20 11:49	10/03/20 12:24	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/02/20 11:49	10/03/20 12:24	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/02/20 11:49	10/03/20 12:24	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	87		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C5 PFPeA	93		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C2 PFHxA	95		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C4 PFHpA	96		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C4 PFOA	94		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C5 PFNA	95		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C2 PFDA	81		25 - 150	10/02/20 11:49	10/03/20 12:24	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: EB-09-28-2020

Lab Sample ID: 320-65223-17

Date Collected: 09/28/20 14:10

Matrix: Water

Date Received: 10/01/20 09:40

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	95		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C2 PFDoA	84		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C2 PFTeDA	76		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C2 PFHxDA	75		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C3 PFBS	93		25 - 150	10/02/20 11:49	10/03/20 12:24	1
18O2 PFHxS	97		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C4 PFOS	98		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C8 FOSA	89		25 - 150	10/02/20 11:49	10/03/20 12:24	1
d3-NMeFOSAA	92		25 - 150	10/02/20 11:49	10/03/20 12:24	1
d5-NEtFOSAA	102		25 - 150	10/02/20 11:49	10/03/20 12:24	1
d-N-MeFOSA-M	58		20 - 150	10/02/20 11:49	10/03/20 12:24	1
d-N-EtFOSA-M	40		20 - 150	10/02/20 11:49	10/03/20 12:24	1
d7-N-MeFOSE-M	20		10 - 120	10/02/20 11:49	10/03/20 12:24	1
d9-N-EtFOSE-M	19		10 - 120	10/02/20 11:49	10/03/20 12:24	1
M2-4:2 FTS	107		25 - 150	10/02/20 11:49	10/03/20 12:24	1
M2-6:2 FTS	114		25 - 150	10/02/20 11:49	10/03/20 12:24	1
M2-8:2 FTS	116		25 - 150	10/02/20 11:49	10/03/20 12:24	1
13C3 HFPO-DA	93		25 - 150	10/02/20 11:49	10/03/20 12:24	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: FB-09-28-2020

Lab Sample ID: 320-65223-18

Date Collected: 09/28/20 14:15

Matrix: Water

Date Received: 10/01/20 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.5		4.5	2.2	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluoropentanoic acid (PFPeA)	<1.8		1.8	0.45	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorohexanoic acid (PFHxA)	<1.8		1.8	0.53	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluoroheptanoic acid (PFHpA)	<1.8		1.8	0.23	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorooctanoic acid (PFOA)	<1.8		1.8	0.77	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorononanoic acid (PFNA)	<1.8		1.8	0.25	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.28	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.50	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.66	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.81	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.86	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorobutanesulfonic acid (PFBS)	<1.8		1.8	0.18	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.27	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorohexanesulfonic acid (PFHxS)	<1.8		1.8	0.52	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	0.49	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.88	ng/L		10/02/20 11:49	10/03/20 12:33	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.89	ng/L		10/02/20 11:49	10/03/20 12:33	1
NEtFOSA	<1.8		1.8	0.79	ng/L		10/02/20 11:49	10/03/20 12:33	1
NMeFOSA	<1.8		1.8	0.39	ng/L		10/02/20 11:49	10/03/20 12:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.5		4.5	1.1	ng/L		10/02/20 11:49	10/03/20 12:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.5		4.5	1.2	ng/L		10/02/20 11:49	10/03/20 12:33	1
NMeFOSE	<3.6		3.6	1.3	ng/L		10/02/20 11:49	10/03/20 12:33	1
NEtFOSE	<1.8		1.8	0.77	ng/L		10/02/20 11:49	10/03/20 12:33	1
4:2 FTS	<1.8		1.8	0.22	ng/L		10/02/20 11:49	10/03/20 12:33	1
6:2 FTS	<4.5		4.5	2.3	ng/L		10/02/20 11:49	10/03/20 12:33	1
8:2 FTS	<1.8		1.8	0.42	ng/L		10/02/20 11:49	10/03/20 12:33	1
10:2 FTS	<1.8		1.8	0.61	ng/L		10/02/20 11:49	10/03/20 12:33	1
DONA	<1.8		1.8	0.36	ng/L		10/02/20 11:49	10/03/20 12:33	1
HFPO-DA (GenX)	<3.6		3.6	1.4	ng/L		10/02/20 11:49	10/03/20 12:33	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/02/20 11:49	10/03/20 12:33	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/02/20 11:49	10/03/20 12:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	92		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C5 PFPeA	98		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C2 PFHxA	97		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C4 PFHpA	91		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C4 PFOA	96		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C5 PFNA	105		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C2 PFDA	88		25 - 150	10/02/20 11:49	10/03/20 12:33	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: FB-09-28-2020

Lab Sample ID: 320-65223-18

Date Collected: 09/28/20 14:15

Matrix: Water

Date Received: 10/01/20 09:40

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	109		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C2 PFDoA	89		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C2 PFTeDA	79		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C2 PFHxDA	97		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C3 PFBS	99		25 - 150	10/02/20 11:49	10/03/20 12:33	1
18O2 PFHxS	100		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C4 PFOS	104		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C8 FOSA	91		25 - 150	10/02/20 11:49	10/03/20 12:33	1
d3-NMeFOSAA	99		25 - 150	10/02/20 11:49	10/03/20 12:33	1
d5-NEtFOSAA	105		25 - 150	10/02/20 11:49	10/03/20 12:33	1
d-N-MeFOSA-M	62		20 - 150	10/02/20 11:49	10/03/20 12:33	1
d-N-EtFOSA-M	38		20 - 150	10/02/20 11:49	10/03/20 12:33	1
d7-N-MeFOSE-M	20		10 - 120	10/02/20 11:49	10/03/20 12:33	1
d9-N-EtFOSE-M	18		10 - 120	10/02/20 11:49	10/03/20 12:33	1
M2-4:2 FTS	103		25 - 150	10/02/20 11:49	10/03/20 12:33	1
M2-6:2 FTS	122		25 - 150	10/02/20 11:49	10/03/20 12:33	1
M2-8:2 FTS	122		25 - 150	10/02/20 11:49	10/03/20 12:33	1
13C3 HFPO-DA	93		25 - 150	10/02/20 11:49	10/03/20 12:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: EB-09-29-2020

Lab Sample ID: 320-65223-19

Date Collected: 09/29/20 14:15

Matrix: Water

Date Received: 10/01/20 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.7		4.7	2.3	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluoropentanoic acid (PFPeA)	<1.9		1.9	0.46	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorohexanoic acid (PFHxA)	<1.9		1.9	0.55	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluoroheptanoic acid (PFHpA)	<1.9		1.9	0.24	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorooctanoic acid (PFOA)	<1.9		1.9	0.80	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorononanoic acid (PFNA)	<1.9		1.9	0.25	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.84	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.89	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.28	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9		1.9	0.54	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9	0.51	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		10/02/20 11:49	10/03/20 12:42	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.92	ng/L		10/02/20 11:49	10/03/20 12:42	1
NEtFOSA	<1.9		1.9	0.82	ng/L		10/02/20 11:49	10/03/20 12:42	1
NMeFOSA	<1.9		1.9	0.41	ng/L		10/02/20 11:49	10/03/20 12:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		10/02/20 11:49	10/03/20 12:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7		4.7	1.2	ng/L		10/02/20 11:49	10/03/20 12:42	1
NMeFOSE	<3.8		3.8	1.3	ng/L		10/02/20 11:49	10/03/20 12:42	1
NEtFOSE	<1.9		1.9	0.80	ng/L		10/02/20 11:49	10/03/20 12:42	1
4:2 FTS	<1.9		1.9	0.23	ng/L		10/02/20 11:49	10/03/20 12:42	1
6:2 FTS	<4.7		4.7	2.4	ng/L		10/02/20 11:49	10/03/20 12:42	1
8:2 FTS	<1.9		1.9	0.43	ng/L		10/02/20 11:49	10/03/20 12:42	1
10:2 FTS	<1.9		1.9	0.63	ng/L		10/02/20 11:49	10/03/20 12:42	1
DONA	<1.9		1.9	0.38	ng/L		10/02/20 11:49	10/03/20 12:42	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		10/02/20 11:49	10/03/20 12:42	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/02/20 11:49	10/03/20 12:42	1
F-53B Minor	<1.9		1.9	0.30	ng/L		10/02/20 11:49	10/03/20 12:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	87		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C5 PFPeA	90		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C2 PFHxA	93		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C4 PFHpA	94		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C4 PFOA	89		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C5 PFNA	97		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C2 PFDA	90		25 - 150	10/02/20 11:49	10/03/20 12:42	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: EB-09-29-2020

Lab Sample ID: 320-65223-19

Date Collected: 09/29/20 14:15

Matrix: Water

Date Received: 10/01/20 09:40

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	83		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C2 PFDoA	81		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C2 PFTeDA	74		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C2 PFHxDA	79		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C3 PFBS	91		25 - 150	10/02/20 11:49	10/03/20 12:42	1
18O2 PFHxS	95		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C4 PFOS	100		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C8 FOSA	84		25 - 150	10/02/20 11:49	10/03/20 12:42	1
d3-NMeFOSAA	88		25 - 150	10/02/20 11:49	10/03/20 12:42	1
d5-NEtFOSAA	98		25 - 150	10/02/20 11:49	10/03/20 12:42	1
d-N-MeFOSA-M	65		20 - 150	10/02/20 11:49	10/03/20 12:42	1
d-N-EtFOSA-M	49		20 - 150	10/02/20 11:49	10/03/20 12:42	1
d7-N-MeFOSE-M	27		10 - 120	10/02/20 11:49	10/03/20 12:42	1
d9-N-EtFOSE-M	22		10 - 120	10/02/20 11:49	10/03/20 12:42	1
M2-4:2 FTS	109		25 - 150	10/02/20 11:49	10/03/20 12:42	1
M2-6:2 FTS	151	*5	25 - 150	10/02/20 11:49	10/03/20 12:42	1
M2-8:2 FTS	126		25 - 150	10/02/20 11:49	10/03/20 12:42	1
13C3 HFPO-DA	90		25 - 150	10/02/20 11:49	10/03/20 12:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: FB-09-29-2020

Lab Sample ID: 320-65223-20

Date Collected: 09/29/20 14:20

Matrix: Water

Date Received: 10/01/20 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.9		4.9	2.3	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluoropentanoic acid (PFPeA)	<1.9		1.9	0.48	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorohexanoic acid (PFHxA)	<1.9		1.9	0.56	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluoroheptanoic acid (PFHpA)	<1.9		1.9	0.24	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorooctanoic acid (PFOA)	<1.9		1.9	0.83	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorononanoic acid (PFNA)	<1.9		1.9	0.26	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.1	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.3	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.71	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.86	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.91	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9		1.9	0.55	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9	0.52	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.36	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.94	ng/L		10/02/20 11:49	10/03/20 12:52	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.95	ng/L		10/02/20 11:49	10/03/20 12:52	1
NEtFOSA	<1.9		1.9	0.84	ng/L		10/02/20 11:49	10/03/20 12:52	1
NMeFOSA	<1.9		1.9	0.42	ng/L		10/02/20 11:49	10/03/20 12:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		10/02/20 11:49	10/03/20 12:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.9		4.9	1.3	ng/L		10/02/20 11:49	10/03/20 12:52	1
NMeFOSE	<3.9		3.9	1.4	ng/L		10/02/20 11:49	10/03/20 12:52	1
NEtFOSE	<1.9		1.9	0.83	ng/L		10/02/20 11:49	10/03/20 12:52	1
4:2 FTS	<1.9		1.9	0.23	ng/L		10/02/20 11:49	10/03/20 12:52	1
6:2 FTS	<4.9		4.9	2.4	ng/L		10/02/20 11:49	10/03/20 12:52	1
8:2 FTS	<1.9		1.9	0.45	ng/L		10/02/20 11:49	10/03/20 12:52	1
10:2 FTS	<1.9		1.9	0.65	ng/L		10/02/20 11:49	10/03/20 12:52	1
DONA	<1.9		1.9	0.39	ng/L		10/02/20 11:49	10/03/20 12:52	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		10/02/20 11:49	10/03/20 12:52	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/02/20 11:49	10/03/20 12:52	1
F-53B Minor	<1.9		1.9	0.31	ng/L		10/02/20 11:49	10/03/20 12:52	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	91		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C5 PFPeA	96		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C2 PFHxA	98		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C4 PFHpA	93		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C4 PFOA	94		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C5 PFNA	102		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C2 PFDA	93		25 - 150	10/02/20 11:49	10/03/20 12:52	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: FB-09-29-2020

Lab Sample ID: 320-65223-20

Date Collected: 09/29/20 14:20

Matrix: Water

Date Received: 10/01/20 09:40

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	90		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C2 PFDoA	89		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C2 PFTeDA	79		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C2 PFHxDA	76		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C3 PFBS	94		25 - 150	10/02/20 11:49	10/03/20 12:52	1
18O2 PFHxS	97		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C4 PFOS	99		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C8 FOSA	88		25 - 150	10/02/20 11:49	10/03/20 12:52	1
d3-NMeFOSAA	95		25 - 150	10/02/20 11:49	10/03/20 12:52	1
d5-NEtFOSAA	104		25 - 150	10/02/20 11:49	10/03/20 12:52	1
d-N-MeFOSA-M	55		20 - 150	10/02/20 11:49	10/03/20 12:52	1
d-N-EtFOSA-M	40		20 - 150	10/02/20 11:49	10/03/20 12:52	1
d7-N-MeFOSE-M	22		10 - 120	10/02/20 11:49	10/03/20 12:52	1
d9-N-EtFOSE-M	19		10 - 120	10/02/20 11:49	10/03/20 12:52	1
M2-4:2 FTS	101		25 - 150	10/02/20 11:49	10/03/20 12:52	1
M2-6:2 FTS	140		25 - 150	10/02/20 11:49	10/03/20 12:52	1
M2-8:2 FTS	119		25 - 150	10/02/20 11:49	10/03/20 12:52	1
13C3 HFPO-DA	91		25 - 150	10/02/20 11:49	10/03/20 12:52	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFOSA (25-150)	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)
320-65223-1	SS-159	91	77	84	94	97	89	93	92
320-65223-1 - DL	SS-159						86		
320-65223-1 - RE	SS-159								
320-65223-1 MS	SS-159	88	78	82	90	95	86	88	87
320-65223-1 MS - DL	SS-159						85		
320-65223-1 MSD	SS-159	89	76	83	91	95	87	95	90
320-65223-1 MSD - DL	SS-159						89		
320-65223-2	SS-158	77	57	70	90	93	85	91	86
320-65223-2 - RE	SS-158								
320-65223-3	SS-157	83	56	71	81	86	87	87	86
320-65223-3 - RE	SS-157								
320-65223-4	SS-160	87	68	75	86	89	89	92	91
320-65223-4 - RE	SS-160								
320-65223-5	SS-161	87	67	74	88	90	82	88	87
320-65223-5 - RE	SS-161								
320-65223-6	SS-162	91	72	79	92	89	88	92	89
320-65223-6 - RE	SS-162								
320-65223-7	SS-163	95	72	80	88	92	87	90	90
320-65223-7 - RE	SS-163								
320-65223-8	SS-164	94	73	81	87	90	91	96	99
320-65223-8 - RE	SS-164								
320-65223-9	SS-166	93	72	79	92	91	89	93	96
320-65223-9 - RE	SS-166								
320-65223-9 MS	SS-166	91	68	76	90	90	84	91	87
320-65223-9 MS - RE	SS-166								
320-65223-9 MSD	SS-166	90	70	76	89	93	88	97	94
320-65223-9 MSD - RE	SS-166								
320-65223-10	SS-165	86	78	80	86	91	87	96	91
320-65223-10 - RE	SS-165								
320-65223-11	SS-167	86	68	78	87	88	86	91	88
320-65223-11 - RE	SS-167								
320-65223-11 MS - RE	SS-167								
320-65223-11 MSD - RE	SS-167								
320-65223-12	SS-168	86	65	73	88	88	85	87	86
320-65223-12 - RE	SS-168								
320-65223-13	SS-169	79	81	90	97	98	86	105	82
320-65223-13 - DL	SS-169						83		
320-65223-13 - RE	SS-169								
320-65223-14	SS-170	81	55	67	83	85	85	88	82
320-65223-14 - RE	SS-170								
320-65223-15	SS-171	92	68	76	87	90	87	91	91
320-65223-15 - RE	SS-171								
320-65223-16	DUP-01	83	64	71	83	87	85	87	81
320-65223-16 - RE	DUP-01								
LCS 320-418642/2-A	Lab Control Sample	89	83	86	87	96	89	92	90
LCS 320-418644/2-A	Lab Control Sample	91	82	84	85	93	89	93	93
LCS 320-420111/2-A	Lab Control Sample								
LCS 320-420112/2-A	Lab Control Sample								
MB 320-418642/1-A	Method Blank	86	82	86	90	94	91	93	92

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Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65223-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOSA (25-150)	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)
MB 320-418644/1-A	Method Blank	83	80	84	85	93	88	93	86
MB 320-420111/1-A	Method Blank								
MB 320-420112/1-A	Method Blank								

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
320-65223-1	SS-159	96	99	103	87	93	85	89	87
320-65223-1 - DL	SS-159								
320-65223-1 - RE	SS-159						98		
320-65223-1 MS	SS-159	89	90	103	86	89	81	88	85
320-65223-1 MS - DL	SS-159								
320-65223-1 MSD	SS-159	94	100	105	87	91	86	98	91
320-65223-1 MSD - DL	SS-159								
320-65223-2	SS-158	90	86	91	84	96	89	62	73
320-65223-2 - RE	SS-158						96		
320-65223-3	SS-157	88	87	93	76	85	84	71	74
320-65223-3 - RE	SS-157						92		
320-65223-4	SS-160	85	78	82	79	86	84	73	74
320-65223-4 - RE	SS-160						87		
320-65223-5	SS-161	89	82	96	77	85	81	83	85
320-65223-5 - RE	SS-161						98		
320-65223-6	SS-162	87	92	100	79	88	84	85	88
320-65223-6 - RE	SS-162						101		
320-65223-7	SS-163	90	88	99	82	86	84	80	83
320-65223-7 - RE	SS-163						96		
320-65223-8	SS-164	95	94	104	82	87	84	92	93
320-65223-8 - RE	SS-164						97		
320-65223-9	SS-166	92	94	95	82	85	85	88	86
320-65223-9 - RE	SS-166						103		
320-65223-9 MS	SS-166	94	94	101	78	88	85	88	92
320-65223-9 MS - RE	SS-166						100		
320-65223-9 MSD	SS-166	97	91	96	83	91	88	91	89
320-65223-9 MSD - RE	SS-166						92		
320-65223-10	SS-165	87	93	104	80	85	86	55	52
320-65223-10 - RE	SS-165						107		
320-65223-11	SS-167	92	92	101	78	82	84	90	95
320-65223-11 - RE	SS-167						93		
320-65223-11 MS - RE	SS-167						98		
320-65223-11 MSD - RE	SS-167						100		
320-65223-12	SS-168	85	87	97	78	88	81	69	76
320-65223-12 - RE	SS-168						94		
320-65223-13	SS-169	103	107	112	90	94	97	73	111
320-65223-13 - DL	SS-169								
320-65223-13 - RE	SS-169						105		
320-65223-14	SS-170	89	85	96	79	85	81	80	83
320-65223-14 - RE	SS-170						100		
320-65223-15	SS-171	89	92	106	81	85	89	81	85
320-65223-15 - RE	SS-171						103		
320-65223-16	DUP-01	92	79	98	78	89	80	67	77
320-65223-16 - RE	DUP-01						99		

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Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65223-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFUnA (25-150)	PFDaA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
LCS 320-418642/2-A	Lab Control Sample	87	90	99	86	90	87	54	52
LCS 320-418644/2-A	Lab Control Sample	89	91	101	86	91	88	55	54
LCS 320-420111/2-A	Lab Control Sample						101		
LCS 320-420112/2-A	Lab Control Sample						100		
MB 320-418642/1-A	Method Blank	88	87	100	88	91	90	53	50
MB 320-418644/1-A	Method Blank	92	88	91	86	90	88	74	79
MB 320-420111/1-A	Method Blank						98		
MB 320-420112/1-A	Method Blank						104		

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	NEFM (10-120)	dMeFOSA (25-150)	NMFM (10-120)	dEtFOSA (25-150)	PFHxDA (25-150)
320-65223-1	SS-159	206 *5	122	158 *5	54	69	50	69	100
320-65223-1 - DL	SS-159								
320-65223-1 - RE	SS-159								
320-65223-1 MS	SS-159	248 *5	126	141	55	62	54	64	94
320-65223-1 MS - DL	SS-159								
320-65223-1 MSD	SS-159	254 *5	129	174 *5		69	56	66	101
320-65223-1 MSD - DL	SS-159								
320-65223-2	SS-158	242 *5	171 *5	177 *5	40	57	44	50	61
320-65223-2 - RE	SS-158								
320-65223-3	SS-157	202 *5	174 *5	183 *5	45	57	45	58	81
320-65223-3 - RE	SS-157								
320-65223-4	SS-160	235 *5	165 *5	171 *5	42	60	44	59	67
320-65223-4 - RE	SS-160								
320-65223-5	SS-161	219 *5	147	170 *5		55	47	56	91
320-65223-5 - RE	SS-161				59				
320-65223-6	SS-162	234 *5	143	172 *5	51	58	49	58	86
320-65223-6 - RE	SS-162								
320-65223-7	SS-163	225 *5	129	159 *5	41	64	39	62	90
320-65223-7 - RE	SS-163								
320-65223-8	SS-164	178 *5	154 *5	187 *5	36	64	36	66	93
320-65223-8 - RE	SS-164								
320-65223-9	SS-166	231 *5	139	168 *5	53	65	51	61	92
320-65223-9 - RE	SS-166								
320-65223-9 MS	SS-166	270 *5	178 *5	208 *5	51	61	47	60	93
320-65223-9 MS - RE	SS-166								
320-65223-9 MSD	SS-166	233 *5	167 *5	188 *5	52	62	49	64	98
320-65223-9 MSD - RE	SS-166								
320-65223-10	SS-165	112	92	94	18	75	17	68	96
320-65223-10 - RE	SS-165								
320-65223-11	SS-167	214 *5	183 *5	219 *5	59	68	59	70	89
320-65223-11 - RE	SS-167								
320-65223-11 MS - RE	SS-167								
320-65223-11 MSD - RE	SS-167								
320-65223-12	SS-168	247 *5	171 *5	185 *5	47	53	41	54	91
320-65223-12 - RE	SS-168								
320-65223-13	SS-169	208 *5			45	66	45	64	103
320-65223-13 - DL	SS-169		91	120					
320-65223-13 - RE	SS-169								
320-65223-14	SS-170	255 *5	215 *5	202 *5	49	55	49	57	93

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65223-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	NEFM (10-120)	dMeFOSA (25-150)	NMFM (10-120)	dEtFOSA (25-150)	PFHxDA (25-150)
320-65223-14 - RE	SS-170								
320-65223-15	SS-171	220 *5	163 *5	181 *5	51	59	45	60	90
320-65223-15 - RE	SS-171								
320-65223-16	DUP-01	230 *5	154 *5	159 *5	45	57	52	41	53
320-65223-16 - RE	DUP-01								
LCS 320-418642/2-A	Lab Control Sample	83	91	76	9 *5	51	10	46	94
LCS 320-418644/2-A	Lab Control Sample	88	94	70	12	46	11	45	104
LCS 320-420111/2-A	Lab Control Sample								
LCS 320-420112/2-A	Lab Control Sample								
MB 320-418642/1-A	Method Blank	82	89	85	22	70	21	69	98
MB 320-418644/1-A	Method Blank	94	100	83	10	39	10	37	94
MB 320-420111/1-A	Method Blank								
MB 320-420112/1-A	Method Blank								

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (25-150)							
320-65223-1	SS-159	85							
320-65223-1 - DL	SS-159								
320-65223-1 - RE	SS-159								
320-65223-1 MS	SS-159	83							
320-65223-1 MS - DL	SS-159								
320-65223-1 MSD	SS-159	85							
320-65223-1 MSD - DL	SS-159								
320-65223-2	SS-158	76							
320-65223-2 - RE	SS-158								
320-65223-3	SS-157	72							
320-65223-3 - RE	SS-157								
320-65223-4	SS-160	77							
320-65223-4 - RE	SS-160								
320-65223-5	SS-161	72							
320-65223-5 - RE	SS-161								
320-65223-6	SS-162	80							
320-65223-6 - RE	SS-162								
320-65223-7	SS-163	82							
320-65223-7 - RE	SS-163								
320-65223-8	SS-164	81							
320-65223-8 - RE	SS-164								
320-65223-9	SS-166	79							
320-65223-9 - RE	SS-166								
320-65223-9 MS	SS-166	81							
320-65223-9 MS - RE	SS-166								
320-65223-9 MSD	SS-166	81							
320-65223-9 MSD - RE	SS-166								
320-65223-10	SS-165	84							
320-65223-10 - RE	SS-165								
320-65223-11	SS-167	78							
320-65223-11 - RE	SS-167								
320-65223-11 MS - RE	SS-167								
320-65223-11 MSD - RE	SS-167								
320-65223-12	SS-168	78							

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Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-65223-12 - RE	SS-168	
320-65223-13	SS-169	89
320-65223-13 - DL	SS-169	
320-65223-13 - RE	SS-169	
320-65223-14	SS-170	76
320-65223-14 - RE	SS-170	
320-65223-15	SS-171	74
320-65223-15 - RE	SS-171	
320-65223-16	DUP-01	75
320-65223-16 - RE	DUP-01	
LCS 320-418642/2-A	Lab Control Sample	86
LCS 320-418644/2-A	Lab Control Sample	86
LCS 320-420111/2-A	Lab Control Sample	
LCS 320-420112/2-A	Lab Control Sample	
MB 320-418642/1-A	Method Blank	84
MB 320-418644/1-A	Method Blank	78
MB 320-420111/1-A	Method Blank	
MB 320-420112/1-A	Method Blank	

Surrogate Legend

- PFOSA = 13C8 FOSA
- 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
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- M242FTS = M2-4:2 FTS
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS
- NEFM = d9-N-EtFOSE-M
- dMeFOSA = d-N-MeFOSA-M
- NMFM = d7-N-MeFOSE-M
- dEtFOSA = d-N-EtFOSA-M
- PFHxDA = 13C2 PFHxDA
- HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65223-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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)
320-65223-17	EB-09-28-2020	87	93	95	96	94	95	81	95
320-65223-18	FB-09-28-2020	92	98	97	91	96	105	88	109
320-65223-19	EB-09-29-2020	87	90	93	94	89	97	90	83
320-65223-20	FB-09-29-2020	91	96	98	93	94	102	93	90
LCS 320-418100/2-A	Lab Control Sample	89	93	92	96	97	95	95	92
LCSD 320-418100/3-A	Lab Control Sample Dup	90	95	96	97	95	95	99	90
MB 320-418100/1-A	Method Blank	84	86	93	82	85	88	86	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)
320-65223-17	EB-09-28-2020	84	76	75	93	97	98	89	92
320-65223-18	FB-09-28-2020	89	79	97	99	100	104	91	99
320-65223-19	EB-09-29-2020	81	74	79	91	95	100	84	88
320-65223-20	FB-09-29-2020	89	79	76	94	97	99	88	95
LCS 320-418100/2-A	Lab Control Sample	87	93	93	94	101	99	88	93
LCSD 320-418100/3-A	Lab Control Sample Dup	95	106	94	96	99	97	83	92
MB 320-418100/1-A	Method Blank	74	60	70	93	89	92	81	89

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)
320-65223-17	EB-09-28-2020	102	58	40	20	19	107	114	116
320-65223-18	FB-09-28-2020	105	62	38	20	18	103	122	122
320-65223-19	EB-09-29-2020	98	65	49	27	22	109	151 *5	126
320-65223-20	FB-09-29-2020	104	55	40	22	19	101	140	119
LCS 320-418100/2-A	Lab Control Sample	90	64	41	21	16	121	105	113
LCSD 320-418100/3-A	Lab Control Sample Dup	83	60	38	23	17	126	116	123
MB 320-418100/1-A	Method Blank	91	57	30	14	10	99	105	104

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-65223-17	EB-09-28-2020	93
320-65223-18	FB-09-28-2020	93
320-65223-19	EB-09-29-2020	90
320-65223-20	FB-09-29-2020	91
LCS 320-418100/2-A	Lab Control Sample	96
LCSD 320-418100/3-A	Lab Control Sample Dup	94
MB 320-418100/1-A	Method Blank	83

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
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- PFHxDA = 13C2 PFHxDA

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65223-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-418100/1-A
Matrix: Water
Analysis Batch: 418370

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418100

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		10/02/20 11:49	10/03/20 11:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		10/02/20 11:49	10/03/20 11:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		10/02/20 11:49	10/03/20 11:38	1
4:2 FTS	<2.0		2.0	0.24	ng/L		10/02/20 11:49	10/03/20 11:38	1
6:2 FTS	<5.0		5.0	2.5	ng/L		10/02/20 11:49	10/03/20 11:38	1
8:2 FTS	<2.0		2.0	0.46	ng/L		10/02/20 11:49	10/03/20 11:38	1
10:2 FTS	<2.0		2.0	0.67	ng/L		10/02/20 11:49	10/03/20 11:38	1
NEtFOSA	<2.0		2.0	0.87	ng/L		10/02/20 11:49	10/03/20 11:38	1
NMeFOSA	<2.0		2.0	0.43	ng/L		10/02/20 11:49	10/03/20 11:38	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		10/02/20 11:49	10/03/20 11:38	1
NMeFOSE	<4.0		4.0	1.4	ng/L		10/02/20 11:49	10/03/20 11:38	1
NEtFOSE	<2.0		2.0	0.85	ng/L		10/02/20 11:49	10/03/20 11:38	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/02/20 11:49	10/03/20 11:38	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		10/02/20 11:49	10/03/20 11:38	1
F-53B Minor	<2.0		2.0	0.32	ng/L		10/02/20 11:49	10/03/20 11:38	1
DONA	<2.0		2.0	0.40	ng/L		10/02/20 11:49	10/03/20 11:38	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	84		25 - 150				10/02/20 11:49	10/03/20 11:38	1
13C5 PFPeA	86		25 - 150				10/02/20 11:49	10/03/20 11:38	1
13C2 PFHxA	93		25 - 150				10/02/20 11:49	10/03/20 11:38	1
13C4 PFHpA	82		25 - 150				10/02/20 11:49	10/03/20 11:38	1
13C4 PFOA	85		25 - 150				10/02/20 11:49	10/03/20 11:38	1

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: MB 320-418100/1-A
Matrix: Water
Analysis Batch: 418370

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418100

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFNA	88		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C2 PFDA	86		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C2 PFUnA	87		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C2 PFDoA	74		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C2 PFTeDA	60		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C3 PFBS	93		25 - 150	10/02/20 11:49	10/03/20 11:38	1
18O2 PFHxS	89		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C4 PFOS	92		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C8 FOSA	81		25 - 150	10/02/20 11:49	10/03/20 11:38	1
d3-NMeFOSAA	89		25 - 150	10/02/20 11:49	10/03/20 11:38	1
d5-NEtFOSAA	91		25 - 150	10/02/20 11:49	10/03/20 11:38	1
M2-4:2 FTS	99		25 - 150	10/02/20 11:49	10/03/20 11:38	1
M2-6:2 FTS	105		25 - 150	10/02/20 11:49	10/03/20 11:38	1
M2-8:2 FTS	104		25 - 150	10/02/20 11:49	10/03/20 11:38	1
d9-N-EtFOSE-M	10		10 - 120	10/02/20 11:49	10/03/20 11:38	1
d-N-MeFOSA-M	57		20 - 150	10/02/20 11:49	10/03/20 11:38	1
d7-N-MeFOSE-M	14		10 - 120	10/02/20 11:49	10/03/20 11:38	1
d-N-EtFOSA-M	30		20 - 150	10/02/20 11:49	10/03/20 11:38	1
13C2 PFHxDA	70		25 - 150	10/02/20 11:49	10/03/20 11:38	1
13C3 HFPO-DA	83		25 - 150	10/02/20 11:49	10/03/20 11:38	1

Lab Sample ID: LCS 320-418100/2-A
Matrix: Water
Analysis Batch: 418556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418100

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	40.7		ng/L		102	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	45.8		ng/L		115	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	41.6		ng/L		104	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	44.4		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	40.0	40.4		ng/L		101	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	44.8		ng/L		112	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	40.7		ng/L		102	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	45.6		ng/L		114	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	47.0		ng/L		118	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	39.5		ng/L		99	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	38.5		ng/L		96	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	42.6		ng/L		106	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	41.1		ng/L		116	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.3		ng/L		100	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.4		ng/L		109	76 - 136

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: LCS 320-418100/2-A
Matrix: Water
Analysis Batch: 418556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418100

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	37.1	39.1		ng/L		105	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	40.9		ng/L		106	71 - 131
Perfluorooctanesulfonamide (FOSA)	40.0	42.3		ng/L		106	73 - 133
Perfluoropentanesulfonic acid (PFPeS)	37.5	39.2		ng/L		104	66 - 126
Perfluorononanesulfonic acid (PFNS)	38.4	40.1		ng/L		104	75 - 135
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.1		ng/L		93	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	36.9		ng/L		92	76 - 136
4:2 FTS	37.4	34.1		ng/L		91	79 - 139
6:2 FTS	37.9	38.7		ng/L		102	59 - 175
8:2 FTS	38.3	40.0		ng/L		104	75 - 135
10:2 FTS	38.6	41.4		ng/L		107	64 - 142
NEtFOSA	40.0	43.2		ng/L		108	78 - 138
NMeFOSA	40.0	41.4		ng/L		103	67 - 154
Perfluorododecanesulfonic acid (PFDoS)	38.7	35.0		ng/L		90	67 - 127
NMeFOSE	40.0	40.6		ng/L		101	70 - 130
NEtFOSE	40.0	34.5		ng/L		86	71 - 131
F-53B Major	37.3	37.3		ng/L		100	75 - 135
HFPO-DA (GenX)	40.0	40.8		ng/L		102	51 - 173
F-53B Minor	37.7	35.7		ng/L		95	54 - 114
DONA	37.7	40.3		ng/L		107	79 - 139

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	89		25 - 150
13C5 PFPeA	93		25 - 150
13C2 PFHxA	92		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	97		25 - 150
13C5 PFNA	95		25 - 150
13C2 PFDA	95		25 - 150
13C2 PFUnA	92		25 - 150
13C2 PFDoA	87		25 - 150
13C2 PFTeDA	93		25 - 150
13C3 PFBS	94		25 - 150
18O2 PFHxS	101		25 - 150
13C4 PFOS	99		25 - 150
13C8 FOSA	88		25 - 150
d3-NMeFOSAA	93		25 - 150
d5-NEtFOSAA	90		25 - 150
M2-4:2 FTS	121		25 - 150
M2-6:2 FTS	105		25 - 150
M2-8:2 FTS	113		25 - 150
d9-N-EtFOSE-M	16		10 - 120
d-N-MeFOSA-M	64		20 - 150

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: LCS 320-418100/2-A
Matrix: Water
Analysis Batch: 418556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418100

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
d7-N-MeFOSE-M	21		10 - 120
d-N-EtFOSA-M	41		20 - 150
13C2 PFHxDA	93		25 - 150
13C3 HFPO-DA	96		25 - 150

Lab Sample ID: LCSD 320-418100/3-A
Matrix: Water
Analysis Batch: 418556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 418100

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Perfluorobutanoic acid (PFBA)	40.0	43.7		ng/L		109	76 - 136	2	30	
Perfluoropentanoic acid (PFPeA)	40.0	43.1		ng/L		108	71 - 131	6	30	
Perfluorohexanoic acid (PFHxA)	40.0	46.4		ng/L		116	73 - 133	1	30	
Perfluoroheptanoic acid (PFHpA)	40.0	43.7		ng/L		109	72 - 132	5	30	
Perfluorooctanoic acid (PFOA)	40.0	45.7		ng/L		114	70 - 130	3	30	
Perfluorononanoic acid (PFNA)	40.0	41.2		ng/L		103	75 - 135	2	30	
Perfluorodecanoic acid (PFDA)	40.0	41.8		ng/L		104	76 - 136	7	30	
Perfluoroundecanoic acid (PFUnA)	40.0	42.2		ng/L		106	68 - 128	4	30	
Perfluorododecanoic acid (PFDoA)	40.0	41.7		ng/L		104	71 - 131	9	30	
Perfluorotridecanoic acid (PFTriA)	40.0	43.5		ng/L		109	71 - 131	8	30	
Perfluorotetradecanoic acid (PFTeA)	40.0	39.2		ng/L		98	70 - 130	1	30	
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	37.3		ng/L		93	76 - 136	3	30	
Perfluoro-n-octadecanoic acid (PFODA)	40.0	42.0		ng/L		105	58 - 145	1	30	
Perfluorobutanesulfonic acid (PFBS)	35.4	41.3		ng/L		117	67 - 127	1	30	
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.4		ng/L		100	59 - 119	0	30	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.1		ng/L		108	76 - 136	1	30	
Perfluorooctanesulfonic acid (PFOS)	37.1	37.8		ng/L		102	70 - 130	3	30	
Perfluorodecanesulfonic acid (PFDS)	38.6	39.5		ng/L		102	71 - 131	3	30	
Perfluorooctanesulfonamide (FOSA)	40.0	43.6		ng/L		109	73 - 133	3	30	
Perfluoropentanesulfonic acid (PFPeS)	37.5	41.2		ng/L		110	66 - 126	5	30	
Perfluorononanesulfonic acid (PFNS)	38.4	40.9		ng/L		107	75 - 135	2	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.9		ng/L		97	76 - 136	5	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	40.8		ng/L		102	76 - 136	10	30	
4:2 FTS	37.4	36.4		ng/L		97	79 - 139	7	30	
6:2 FTS	37.9	32.9		ng/L		87	59 - 175	16	30	
8:2 FTS	38.3	38.5		ng/L		100	75 - 135	4	30	
10:2 FTS	38.6	37.0		ng/L		96	64 - 142	11	30	

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: LCSD 320-418100/3-A
Matrix: Water
Analysis Batch: 418556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 418100

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
NEtFOSA	40.0	44.5		ng/L		111	78 - 138	3	30
NMeFOSA	40.0	42.8		ng/L		107	67 - 154	3	30
Perfluorododecanesulfonic acid (PFDoS)	38.7	35.8		ng/L		92	67 - 127	2	30
NMeFOSE	40.0	42.5		ng/L		106	70 - 130	5	30
NEtFOSE	40.0	38.0		ng/L		95	71 - 131	10	30
F-53B Major	37.3	37.3		ng/L		100	75 - 135	0	30
HFPO-DA (GenX)	40.0	43.1		ng/L		108	51 - 173	6	30
F-53B Minor	37.7	34.3		ng/L		91	54 - 114	4	30
DONA	37.7	42.5		ng/L		113	79 - 139	5	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C4 PFBA	90		25 - 150
13C5 PFPeA	95		25 - 150
13C2 PFHxA	96		25 - 150
13C4 PFHpA	97		25 - 150
13C4 PFOA	95		25 - 150
13C5 PFNA	95		25 - 150
13C2 PFDA	99		25 - 150
13C2 PFUnA	90		25 - 150
13C2 PFDoA	95		25 - 150
13C2 PFTeDA	106		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	99		25 - 150
13C4 PFOS	97		25 - 150
13C8 FOSA	83		25 - 150
d3-NMeFOSAA	92		25 - 150
d5-NEtFOSAA	83		25 - 150
M2-4:2 FTS	126		25 - 150
M2-6:2 FTS	116		25 - 150
M2-8:2 FTS	123		25 - 150
d9-N-EtFOSE-M	17		10 - 120
d-N-MeFOSA-M	60		20 - 150
d7-N-MeFOSE-M	23		10 - 120
d-N-EtFOSA-M	38		20 - 150
13C2 PFHxDA	94		25 - 150
13C3 HFPO-DA	94		25 - 150

Lab Sample ID: MB 320-418642/1-A
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0687	J	0.20	0.028	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20	0.077	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorohexanoic acid (PFHxA)	0.0422	J I	0.20	0.042	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20	0.029	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20	0.086	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorononanoic acid (PFNA)	<0.20		0.20	0.036	ug/Kg		10/05/20 05:28	10/08/20 00:40	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: MB 320-418642/1-A
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418642

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorodecanoic acid (PFDA)	<0.20		0.20	0.022	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.0444	J	0.20	0.044	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorooctanesulfonic acid (PFOS)	0.606		0.50	0.20	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
F-53B Major	<0.20		0.20	0.027	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg		10/05/20 05:28	10/08/20 00:40	1
DONA	<0.20		0.20	0.018	ug/Kg		10/05/20 05:28	10/08/20 00:40	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	82		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C5 PFPeA	86		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C2 PFHxA	90		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C4 PFHpA	94		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C4 PFOA	91		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C5 PFNA	93		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C2 PFDA	92		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C2 PFUnA	88		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C2 PFDoA	87		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C2 PFTeDA	100		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C3 PFBS	88		25 - 150	10/05/20 05:28	10/08/20 00:40	1

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: MB 320-418642/1-A
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418642

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
18O2 PFHxS	91		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C4 PFOS	90		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C8 FOSA	86		25 - 150	10/05/20 05:28	10/08/20 00:40	1
d3-NMeFOSAA	53		25 - 150	10/05/20 05:28	10/08/20 00:40	1
d5-NEtFOSAA	50		25 - 150	10/05/20 05:28	10/08/20 00:40	1
M2-4:2 FTS	82		25 - 150	10/05/20 05:28	10/08/20 00:40	1
M2-6:2 FTS	89		25 - 150	10/05/20 05:28	10/08/20 00:40	1
M2-8:2 FTS	85		25 - 150	10/05/20 05:28	10/08/20 00:40	1
d9-N-EtFOSE-M	22		10 - 120	10/05/20 05:28	10/08/20 00:40	1
d-N-MeFOSA-M	70		25 - 150	10/05/20 05:28	10/08/20 00:40	1
d7-N-MeFOSE-M	21		10 - 120	10/05/20 05:28	10/08/20 00:40	1
d-N-EtFOSA-M	69		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C2 PFHxDA	98		25 - 150	10/05/20 05:28	10/08/20 00:40	1
13C3 HFPO-DA	84		25 - 150	10/05/20 05:28	10/08/20 00:40	1

Lab Sample ID: LCS 320-418642/2-A
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	2.00	2.12		ug/Kg		106	69 - 129
Perfluorohexanoic acid (PFHxA)	2.00	2.52		ug/Kg		126	71 - 131
Perfluoroheptanoic acid (PFHpA)	2.00	2.28		ug/Kg		114	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.28		ug/Kg		114	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.16		ug/Kg		108	73 - 133
Perfluorodecanoic acid (PFDA)	2.00	2.37		ug/Kg		118	72 - 132
Perfluoroundecanoic acid (PFUnA)	2.00	2.23		ug/Kg		111	66 - 126
Perfluorododecanoic acid (PFDoA)	2.00	2.36		ug/Kg		118	71 - 131
Perfluorotridecanoic acid (PFTriA)	2.00	2.51		ug/Kg		125	71 - 131
Perfluorotetradecanoic acid (PFTeA)	2.00	1.93		ug/Kg		97	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	2.00		ug/Kg		100	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.07		ug/Kg		103	53 - 130
Perfluorobutanesulfonic acid (PFBS)	1.77	2.15		ug/Kg		122	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.98		ug/Kg		109	62 - 122
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.28		ug/Kg		120	76 - 136
Perfluorooctanesulfonic acid (PFOS)	1.86	3.03	*	ug/Kg		163	68 - 141
Perfluorodecanesulfonic acid (PFDS)	1.93	2.18		ug/Kg		113	71 - 131
Perfluorooctanesulfonamide (FOSA)	2.00	2.07		ug/Kg		104	77 - 137

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: LCS 320-418642/2-A
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.19		ug/Kg		117	66 - 126
Perfluorononanesulfonic acid (PFNS)	1.92	2.37		ug/Kg		123	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.27		ug/Kg		113	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.06		ug/Kg		103	72 - 132
4:2 FTS	1.87	2.04		ug/Kg		109	68 - 143
6:2 FTS	1.90	1.90	J	ug/Kg		100	73 - 139
8:2 FTS	1.92	2.16		ug/Kg		113	75 - 135
10:2 FTS	1.93	2.29		ug/Kg		119	69 - 145
NEtFOSA	2.00	2.21		ug/Kg		111	47 - 161
NMeFOSA	2.00	2.23		ug/Kg		112	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.99		ug/Kg		103	70 - 130
NMeFOSE	2.00	1.98		ug/Kg		99	43 - 153
NEtFOSE	2.00	2.16		ug/Kg		108	44 - 155
F-53B Major	1.86	2.15		ug/Kg		116	74 - 134
HFPO-DA (GenX)	2.00	2.19		ug/Kg		110	53 - 158
F-53B Minor	1.88	2.09		ug/Kg		111	66 - 136
DONA	1.88	2.14		ug/Kg		113	79 - 139

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	83		25 - 150
13C5 PFPeA	86		25 - 150
13C2 PFHxA	87		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	89		25 - 150
13C5 PFNA	92		25 - 150
13C2 PFDA	90		25 - 150
13C2 PFUnA	87		25 - 150
13C2 PFDoA	90		25 - 150
13C2 PFTeDA	99		25 - 150
13C3 PFBS	86		25 - 150
18O2 PFHxS	90		25 - 150
13C4 PFOS	87		25 - 150
13C8 FOSA	89		25 - 150
d3-NMeFOSAA	54		25 - 150
d5-NEtFOSAA	52		25 - 150
M2-4:2 FTS	83		25 - 150
M2-6:2 FTS	91		25 - 150
M2-8:2 FTS	76		25 - 150
d9-N-EtFOSE-M	9	*5	10 - 120
d-N-MeFOSA-M	51		25 - 150
d7-N-MeFOSE-M	10		10 - 120
d-N-EtFOSA-M	46		25 - 150
13C2 PFHxDA	94		25 - 150
13C3 HFPO-DA	86		25 - 150

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: 320-65223-1 MS
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: SS-159
Prep Type: Total/NA
Prep Batch: 418642

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Perfluorobutanoic acid (PFBA)	0.19	J B	2.05	2.51		ug/Kg	☼	113	76 - 136
Perfluoropentanoic acid (PFPeA)	0.21		2.05	2.28		ug/Kg	☼	101	69 - 129
Perfluorohexanoic acid (PFHxA)	0.63	B	2.05	3.17		ug/Kg	☼	124	71 - 131
Perfluoroheptanoic acid (PFHpA)	0.36		2.05	2.66		ug/Kg	☼	112	71 - 131
Perfluorononanoic acid (PFNA)	0.23		2.05	2.59		ug/Kg	☼	116	73 - 133
Perfluorodecanoic acid (PFDA)	5.8	F1	2.05	8.56	F1	ug/Kg	☼	133	72 - 132
Perfluoroundecanoic acid (PFUnA)	0.22		2.05	2.54		ug/Kg	☼	113	66 - 126
Perfluorododecanoic acid (PFDoA)	0.26		2.05	2.84		ug/Kg	☼	126	71 - 131
Perfluorotridecanoic acid (PFTriA)	<0.21		2.05	2.35		ug/Kg	☼	115	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<0.21		2.05	2.01		ug/Kg	☼	98	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		2.05	1.93		ug/Kg	☼	94	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		2.05	1.93		ug/Kg	☼	94	53 - 130
Perfluorobutanesulfonic acid (PFBS)	<0.21		1.81	2.19		ug/Kg	☼	121	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	0.090	J	1.86	2.07		ug/Kg	☼	106	62 - 122
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		1.95	2.36		ug/Kg	☼	121	76 - 136
Perfluorodecanesulfonic acid (PFDS)	0.13	J	1.97	2.55		ug/Kg	☼	122	71 - 131
Perfluorooctanesulfonamide (FOSA)	15		2.05	14.1	4	ug/Kg	☼	-26	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	<0.21		1.92	2.20		ug/Kg	☼	115	66 - 126
Perfluorononanesulfonic acid (PFNS)	0.085	J	1.96	2.34		ug/Kg	☼	115	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.05	2.36		ug/Kg	☼	115	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.05	2.48		ug/Kg	☼	121	72 - 132
4:2 FTS	<2.1		1.91	1.79	J	ug/Kg	☼	94	68 - 143
6:2 FTS	<2.1		1.94	1.97	J	ug/Kg	☼	102	73 - 139
8:2 FTS	<2.1		1.96	2.30		ug/Kg	☼	117	75 - 135
10:2 FTS	<0.21		1.97	2.20		ug/Kg	☼	111	69 - 145
NEtFOSA	<0.21		2.05	2.24		ug/Kg	☼	110	47 - 161
NMeFOSA	0.42		2.05	2.45		ug/Kg	☼	99	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	<0.21		1.98	2.24		ug/Kg	☼	113	70 - 130
NMeFOSE	<0.21		2.05	2.04		ug/Kg	☼	100	43 - 153
NEtFOSE	<0.21		2.05	1.93		ug/Kg	☼	94	44 - 155
F-53B Major	<0.21		1.91	2.33		ug/Kg	☼	122	74 - 134
HFPO-DA (GenX)	<0.26		2.05	2.25		ug/Kg	☼	110	53 - 158
F-53B Minor	<0.21		1.93	2.21		ug/Kg	☼	115	66 - 136
DONA	<0.21		1.93	2.31		ug/Kg	☼	120	79 - 139

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C4 PFBA	78		25 - 150
13C5 PFPeA	82		25 - 150
13C2 PFHxA	90		25 - 150
13C4 PFHpA	95		25 - 150
13C4 PFOA	86		25 - 150
13C5 PFNA	88		25 - 150
13C2 PFDA	87		25 - 150
13C2 PFUnA	89		25 - 150
13C2 PFDaA	90		25 - 150
13C2 PFTeDA	103		25 - 150
13C3 PFBS	86		25 - 150
18O2 PFHxS	89		25 - 150
13C4 PFOS	81		25 - 150
13C8 FOSA	88		25 - 150
d3-NMeFOSAA	88		25 - 150
d5-NEtFOSAA	85		25 - 150
M2-4:2 FTS	248	*5	25 - 150
M2-6:2 FTS	126		25 - 150
M2-8:2 FTS	141		25 - 150
d9-N-EtFOSE-M	55		10 - 120
d-N-MeFOSA-M	62		25 - 150
d7-N-MeFOSE-M	54		10 - 120
d-N-EtFOSA-M	64		25 - 150
13C2 PFHxDA	94		25 - 150
13C3 HFPO-DA	83		25 - 150

Lab Sample ID: 320-65223-1 MSD
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: SS-159
Prep Type: Total/NA
Prep Batch: 418642

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	
				Result	Qualifier				Limits	RPD	Limit	
Perfluorobutanoic acid (PFBA)	0.19	J B	1.93	2.34		ug/Kg	☼	111	76 - 136	7	30	
Perfluoropentanoic acid (PFPeA)	0.21		1.93	2.21		ug/Kg	☼	104	69 - 129	3	30	
Perfluorohexanoic acid (PFHxA)	0.63	B	1.93	3.05		ug/Kg	☼	125	71 - 131	4	30	
Perfluoroheptanoic acid (PFHpA)	0.36		1.93	2.50		ug/Kg	☼	111	71 - 131	6	30	
Perfluorononanoic acid (PFNA)	0.23		1.93	2.31		ug/Kg	☼	108	73 - 133	12	30	
Perfluorodecanoic acid (PFDA)	5.8	F1	1.93	7.86		ug/Kg	☼	104	72 - 132	9	30	
Perfluoroundecanoic acid (PFUnA)	0.22		1.93	2.30		ug/Kg	☼	108	66 - 126	10	30	
Perfluorododecanoic acid (PFDaA)	0.26		1.93	2.52		ug/Kg	☼	117	71 - 131	12	30	
Perfluorotridecanoic acid (PFTriA)	<0.21		1.93	2.14		ug/Kg	☼	111	71 - 131	9	30	
Perfluorotetradecanoic acid (PFTeA)	<0.21		1.93	1.84		ug/Kg	☼	95	67 - 127	9	30	
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		1.93	1.85		ug/Kg	☼	96	75 - 135	4	30	
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		1.93	1.85		ug/Kg	☼	96	53 - 130	4	30	
Perfluorobutanesulfonic acid (PFBS)	<0.21		1.71	2.06		ug/Kg	☼	120	69 - 129	6	30	
Perfluorohexanesulfonic acid (PFHxS)	0.090	J	1.76	1.93		ug/Kg	☼	105	62 - 122	7	30	

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: 320-65223-1 MSD
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: SS-159
Prep Type: Total/NA
Prep Batch: 418642

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		1.84	2.18		ug/Kg	⊛	119	76 - 136	8	30
Perfluorodecanesulfonic acid (PFDS)	0.13	J	1.86	2.29		ug/Kg	⊛	116	71 - 131	11	30
Perfluorooctanesulfonamide (FOSA)	15		1.93	13.2	4	ug/Kg	⊛	-74	77 - 137	7	30
Perfluoropentanesulfonic acid (PFPeS)	<0.21		1.81	2.11		ug/Kg	⊛	116	66 - 126	4	30
Perfluorononanesulfonic acid (PFNS)	0.085	J	1.85	2.14		ug/Kg	⊛	111	72 - 132	9	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		1.93	2.12		ug/Kg	⊛	110	72 - 132	11	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		1.93	2.19		ug/Kg	⊛	113	72 - 132	12	30
4:2 FTS	<2.1		1.80	1.69	J	ug/Kg	⊛	94	68 - 143	6	30
6:2 FTS	<2.1		1.83	1.90		ug/Kg	⊛	104	73 - 139	4	30
8:2 FTS	<2.1		1.85	1.91		ug/Kg	⊛	103	75 - 135	19	30
10:2 FTS	<0.21		1.86	1.81		ug/Kg	⊛	97	69 - 145	19	30
NEtFOSA	<0.21		1.93	2.22		ug/Kg	⊛	115	47 - 161	1	30
NMeFOSA	0.42		1.93	2.17		ug/Kg	⊛	91	63 - 148	12	30
Perfluorododecanesulfonic acid (PFDoS)	<0.21		1.87	1.95		ug/Kg	⊛	104	70 - 130	14	30
NMeFOSE	<0.21		1.93	1.89		ug/Kg	⊛	98	43 - 153	8	30
NEtFOSE	<0.21		1.93	1.85		ug/Kg	⊛	96	44 - 155	4	30
F-53B Major	<0.21		1.80	2.31		ug/Kg	⊛	128	74 - 134	1	30
HFPO-DA (GenX)	<0.26		1.93	2.02		ug/Kg	⊛	105	53 - 158	11	30
F-53B Minor	<0.21		1.82	2.06		ug/Kg	⊛	113	66 - 136	7	30
DONA	<0.21		1.82	2.16		ug/Kg	⊛	119	79 - 139	7	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C4 PFBA	76		25 - 150
13C5 PFPeA	83		25 - 150
13C2 PFHxA	91		25 - 150
13C4 PFHpA	95		25 - 150
13C4 PFOA	87		25 - 150
13C5 PFNA	95		25 - 150
13C2 PFDA	90		25 - 150
13C2 PFUnA	94		25 - 150
13C2 PFDoA	100		25 - 150
13C2 PFTeDA	105		25 - 150
13C3 PFBS	87		25 - 150
18O2 PFHxS	91		25 - 150
13C4 PFOS	86		25 - 150
13C8 FOSA	89		25 - 150
d3-NMeFOSAA	98		25 - 150
d5-NEtFOSAA	91		25 - 150
M2-4:2 FTS	254	*5	25 - 150
M2-6:2 FTS	129		25 - 150
M2-8:2 FTS	174	*5	25 - 150
d-N-MeFOSA-M	69		25 - 150
d7-N-MeFOSE-M	56		10 - 120

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: 320-65223-1 MSD
Matrix: Solid
Analysis Batch: 419682

Client Sample ID: SS-159
Prep Type: Total/NA
Prep Batch: 418642

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
d-N-EtFOSA-M	66		25 - 150
13C2 PFHxDA	101		25 - 150
13C3 HFPO-DA	85		25 - 150

Lab Sample ID: MB 320-418644/1-A
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418644

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	0.0581	J	0.20	0.028	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20	0.077	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorohexanoic acid (PFHxA)	<0.20		0.20	0.042	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20	0.029	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20	0.086	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorononanoic acid (PFNA)	<0.20		0.20	0.036	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorodecanoic acid (PFDA)	<0.20		0.20	0.022	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.0446	J	0.20	0.044	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluoronanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
F-53B Major	<0.20		0.20	0.027	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg		10/05/20 05:32	10/08/20 03:57	1
DONA	<0.20		0.20	0.018	ug/Kg		10/05/20 05:32	10/08/20 03:57	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	80		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C5 PFPeA	84		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C2 PFHxA	85		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C4 PFHpA	93		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C4 PFOA	88		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C5 PFNA	93		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C2 PFDA	86		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C2 PFUnA	92		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C2 PFDaA	88		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C2 PFTeDA	91		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C3 PFBS	86		25 - 150	10/05/20 05:32	10/08/20 03:57	1
18O2 PFHxS	90		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C4 PFOS	88		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C8 FOSA	83		25 - 150	10/05/20 05:32	10/08/20 03:57	1
d3-NMeFOSAA	74		25 - 150	10/05/20 05:32	10/08/20 03:57	1
d5-NEtFOSAA	79		25 - 150	10/05/20 05:32	10/08/20 03:57	1
M2-4:2 FTS	94		25 - 150	10/05/20 05:32	10/08/20 03:57	1
M2-6:2 FTS	100		25 - 150	10/05/20 05:32	10/08/20 03:57	1
M2-8:2 FTS	83		25 - 150	10/05/20 05:32	10/08/20 03:57	1
d9-N-EtFOSE-M	10		10 - 120	10/05/20 05:32	10/08/20 03:57	1
d-N-MeFOSA-M	39		25 - 150	10/05/20 05:32	10/08/20 03:57	1
d7-N-MeFOSE-M	10		10 - 120	10/05/20 05:32	10/08/20 03:57	1
d-N-EtFOSA-M	37		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C2 PFHxDA	94		25 - 150	10/05/20 05:32	10/08/20 03:57	1
13C3 HFPO-DA	78		25 - 150	10/05/20 05:32	10/08/20 03:57	1

Lab Sample ID: LCS 320-418644/2-A
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418644
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	2.00	2.28		ug/Kg		114	76 - 136
Perfluoropentanoic acid (PFPeA)	2.00	2.11		ug/Kg		106	69 - 129
Perfluorohexanoic acid (PFHxA)	2.00	2.47		ug/Kg		123	71 - 131
Perfluoroheptanoic acid (PFHpA)	2.00	2.13		ug/Kg		106	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.22		ug/Kg		111	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.17		ug/Kg		109	73 - 133
Perfluorodecanoic acid (PFDA)	2.00	2.19		ug/Kg		109	72 - 132
Perfluoroundecanoic acid (PFUnA)	2.00	2.24		ug/Kg		112	66 - 126
Perfluorododecanoic acid (PFDaA)	2.00	2.38		ug/Kg		119	71 - 131
Perfluorotridecanoic acid (PFTriA)	2.00	2.22		ug/Kg		111	71 - 131
Perfluorotetradecanoic acid (PFTeA)	2.00	1.85		ug/Kg		92	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	1.78		ug/Kg		89	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	2.00	1.86		ug/Kg		93	53 - 130
Perfluorobutanesulfonic acid (PFBS)	1.77	2.11		ug/Kg		119	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.86		ug/Kg		102	62 - 122

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: LCS 320-418644/2-A
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418644

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.13		ug/Kg		112	76 - 136
Perfluorodecanesulfonic acid (PFDS)	1.93	2.20		ug/Kg		114	71 - 131
Perfluorooctanesulfonamide (FOSA)	2.00	2.08		ug/Kg		104	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.14		ug/Kg		114	66 - 126
Perfluorononanesulfonic acid (PFNS)	1.92	2.19		ug/Kg		114	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.19		ug/Kg		110	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.01		ug/Kg		101	72 - 132
4:2 FTS	1.87	1.85	J	ug/Kg		99	68 - 143
6:2 FTS	1.90	1.82	J	ug/Kg		96	73 - 139
8:2 FTS	1.92	2.15		ug/Kg		112	75 - 135
10:2 FTS	1.93	2.22		ug/Kg		115	69 - 145
NEtFOSA	2.00	2.23		ug/Kg		112	47 - 161
NMeFOSA	2.00	2.14		ug/Kg		107	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.96		ug/Kg		101	70 - 130
NMeFOSE	2.00	2.18		ug/Kg		109	43 - 153
NEtFOSE	2.00	1.91		ug/Kg		96	44 - 155
F-53B Major	1.86	2.06		ug/Kg		110	74 - 134
HFPO-DA (GenX)	2.00	2.10		ug/Kg		105	53 - 158
F-53B Minor	1.88	2.09		ug/Kg		111	66 - 136
DONA	1.88	2.00		ug/Kg		106	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	82		25 - 150
13C5 PFPeA	84		25 - 150
13C2 PFHxA	85		25 - 150
13C4 PFHpA	93		25 - 150
13C4 PFOA	89		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	93		25 - 150
13C2 PFUnA	89		25 - 150
13C2 PFDoA	91		25 - 150
13C2 PFTeDA	101		25 - 150
13C3 PFBS	86		25 - 150
18O2 PFHxS	91		25 - 150
13C4 PFOS	88		25 - 150
13C8 FOSA	91		25 - 150
d3-NMeFOSAA	55		25 - 150
d5-NEtFOSAA	54		25 - 150
M2-4:2 FTS	88		25 - 150
M2-6:2 FTS	94		25 - 150
M2-8:2 FTS	70		25 - 150
d9-N-EtFOSE-M	12		10 - 120
d-N-MeFOSA-M	46		25 - 150

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: LCS 320-418644/2-A
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418644

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
d7-N-MeFOSE-M	11		10 - 120
d-N-EtFOSA-M	45		25 - 150
13C2 PFHxDA	104		25 - 150
13C3 HFPO-DA	86		25 - 150

Lab Sample ID: 320-65223-9 MS
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: SS-166
Prep Type: Total/NA
Prep Batch: 418644

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Perfluorobutanoic acid (PFBA)	0.035	J B	1.90	2.29		ug/Kg	☼	119	76 - 136
Perfluoropentanoic acid (PFPeA)	0.17	J	1.90	2.13		ug/Kg	☼	103	69 - 129
Perfluorohexanoic acid (PFHxA)	0.40		1.90	2.55		ug/Kg	☼	113	71 - 131
Perfluoroheptanoic acid (PFHpA)	0.15	J	1.90	2.39		ug/Kg	☼	118	71 - 131
Perfluorooctanoic acid (PFOA)	9.1	F2	1.90	13.1	4	ug/Kg	☼	209	72 - 132
Perfluorononanoic acid (PFNA)	0.063	J	1.90	2.13		ug/Kg	☼	109	73 - 133
Perfluorodecanoic acid (PFDA)	1.0	F2 F1	1.90	7.41	F1	ug/Kg	☼	337	72 - 132
Perfluoroundecanoic acid (PFUnA)	0.11	J	1.90	2.12		ug/Kg	☼	106	66 - 126
Perfluorododecanoic acid (PFDoA)	<0.20		1.90	2.28		ug/Kg	☼	120	71 - 131
Perfluorotridecanoic acid (PFTriA)	<0.20		1.90	2.12		ug/Kg	☼	111	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<0.20		1.90	2.02		ug/Kg	☼	106	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.044	J B	1.90	1.91		ug/Kg	☼	98	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		1.90	1.76		ug/Kg	☼	93	53 - 130
Perfluorobutanesulfonic acid (PFBS)	<0.20		1.68	2.07		ug/Kg	☼	123	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	<0.20		1.73	1.80		ug/Kg	☼	104	62 - 122
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		1.81	2.14		ug/Kg	☼	118	76 - 136
Perfluorodecanesulfonic acid (PFDS)	<0.20		1.83	2.13		ug/Kg	☼	116	71 - 131
Perfluorooctanesulfonamide (FOSA)	<0.20		1.90	1.97		ug/Kg	☼	104	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	<0.20		1.78	2.25		ug/Kg	☼	126	66 - 126
Perfluorononanesulfonic acid (PFNS)	<0.20		1.82	1.96		ug/Kg	☼	107	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		1.90	2.11		ug/Kg	☼	111	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		1.90	1.98		ug/Kg	☼	104	72 - 132
4:2 FTS	<2.0		1.77	1.60	J	ug/Kg	☼	90	68 - 143
6:2 FTS	<2.0		1.80	1.75	J	ug/Kg	☼	97	73 - 139
8:2 FTS	<2.0		1.82	1.96		ug/Kg	☼	107	75 - 135
10:2 FTS	<0.20		1.83	1.88		ug/Kg	☼	103	69 - 145
NEtFOSA	<0.20		1.90	2.03		ug/Kg	☼	107	47 - 161
NMeFOSA	<0.20		1.90	2.20		ug/Kg	☼	116	63 - 148

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: 320-65223-9 MS
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: SS-166
Prep Type: Total/NA
Prep Batch: 418644

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanesulfonic acid (PFDoS)	<0.20		1.84	1.81		ug/Kg	☼	99	70 - 130
NMeFOSE	<0.20		1.90	2.05		ug/Kg	☼	108	43 - 153
NEtFOSE	<0.20		1.90	1.72		ug/Kg	☼	91	44 - 155
F-53B Major	<0.20		1.77	2.21		ug/Kg	☼	125	74 - 134
HFPO-DA (GenX)	<0.25		1.90	2.02		ug/Kg	☼	106	53 - 158
F-53B Minor	<0.20		1.79	2.01		ug/Kg	☼	112	66 - 136
DONA	<0.20		1.79	1.96		ug/Kg	☼	109	79 - 139

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C8 FOSA	91		25 - 150
13C4 PFBA	68		25 - 150
13C5 PFPeA	76		25 - 150
13C2 PFHxA	90		25 - 150
13C4 PFHpA	90		25 - 150
13C4 PFOA	84		25 - 150
13C5 PFNA	91		25 - 150
13C2 PFDA	87		25 - 150
13C2 PFUnA	94		25 - 150
13C2 PFDoA	94		25 - 150
13C2 PFTeDA	101		25 - 150
13C3 PFBS	78		25 - 150
18O2 PFHxS	88		25 - 150
13C4 PFOS	85		25 - 150
d3-NMeFOSAA	88		25 - 150
d5-NEtFOSAA	92		25 - 150
M2-4:2 FTS	270	*5	25 - 150
M2-6:2 FTS	178	*5	25 - 150
M2-8:2 FTS	208	*5	25 - 150
d9-N-EtFOSE-M	51		10 - 120
d-N-MeFOSA-M	61		25 - 150
d7-N-MeFOSE-M	47		10 - 120
d-N-EtFOSA-M	60		25 - 150
13C2 PFHxDA	93		25 - 150
13C3 HFPO-DA	81		25 - 150

Lab Sample ID: 320-65223-9 MSD
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: SS-166
Prep Type: Total/NA
Prep Batch: 418644

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.035	J B	2.02	2.43		ug/Kg	☼	119	76 - 136	6	30
Perfluoropentanoic acid (PFPeA)	0.17	J	2.02	2.26		ug/Kg	☼	104	69 - 129	6	30
Perfluorohexanoic acid (PFHxA)	0.40		2.02	2.74		ug/Kg	☼	116	71 - 131	7	30
Perfluoroheptanoic acid (PFHpA)	0.15	J	2.02	2.37		ug/Kg	☼	110	71 - 131	1	30
Perfluorooctanoic acid (PFOA)	9.1	F2	2.02	9.25	4 F2	ug/Kg	☼	8	72 - 132	34	30
Perfluorononanoic acid (PFNA)	0.063	J	2.02	2.30		ug/Kg	☼	111	73 - 133	7	30
Perfluorodecanoic acid (PFDA)	1.0	F2 F1	2.02	3.51	F2	ug/Kg	☼	124	72 - 132	71	30

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: 320-65223-9 MSD
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: SS-166
Prep Type: Total/NA
Prep Batch: 418644

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	0.11	J	2.02	2.27		ug/Kg	☼	107	66 - 126	7	30
Perfluorododecanoic acid (PFDoA)	<0.20		2.02	2.58		ug/Kg	☼	128	71 - 131	12	30
Perfluorotridecanoic acid (PFTriA)	<0.20		2.02	2.50		ug/Kg	☼	124	71 - 131	16	30
Perfluorotetradecanoic acid (PFTeA)	<0.20		2.02	2.20		ug/Kg	☼	109	67 - 127	9	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.044	J B	2.02	1.92		ug/Kg	☼	93	75 - 135	0	30
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		2.02	1.76		ug/Kg	☼	87	53 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<0.20		1.78	2.17		ug/Kg	☼	122	69 - 129	5	30
Perfluorohexanesulfonic acid (PFHxS)	<0.20		1.84	1.91		ug/Kg	☼	104	62 - 122	6	30
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		1.92	2.19		ug/Kg	☼	114	76 - 136	2	30
Perfluorodecanesulfonic acid (PFDS)	<0.20		1.95	2.17		ug/Kg	☼	112	71 - 131	2	30
Perfluorooctanesulfonamide (FOSA)	<0.20		2.02	2.13		ug/Kg	☼	106	77 - 137	8	30
Perfluoropentanesulfonic acid (PFPeS)	<0.20		1.89	2.32		ug/Kg	☼	122	66 - 126	3	30
Perfluorononanesulfonic acid (PFNS)	<0.20		1.94	2.07		ug/Kg	☼	107	72 - 132	5	30
N-methylperfluorooctanesulfonamide doacetic acid (NMeFOSAA)	<2.0		2.02	2.33		ug/Kg	☼	116	72 - 132	10	30
N-ethylperfluorooctanesulfonamide doacetic acid (NEtFOSAA)	<2.0		2.02	2.23		ug/Kg	☼	110	72 - 132	12	30
4:2 FTS	<2.0		1.88	1.89	J	ug/Kg	☼	100	68 - 143	16	30
6:2 FTS	<2.0		1.91	2.02		ug/Kg	☼	105	73 - 139	14	30
8:2 FTS	<2.0		1.93	2.13		ug/Kg	☼	110	75 - 135	9	30
10:2 FTS	<0.20		1.95	1.80		ug/Kg	☼	93	69 - 145	4	30
NEtFOSA	<0.20		2.02	2.29		ug/Kg	☼	113	47 - 161	12	30
NMeFOSA	<0.20		2.02	2.19		ug/Kg	☼	108	63 - 148	1	30
Perfluorododecanesulfonic acid (PFDoS)	<0.20		1.95	1.92		ug/Kg	☼	98	70 - 130	6	30
NMeFOSE	<0.20		2.02	2.21		ug/Kg	☼	110	43 - 153	8	30
NEtFOSE	<0.20		2.02	2.03		ug/Kg	☼	101	44 - 155	16	30
F-53B Major	<0.20		1.88	2.21		ug/Kg	☼	117	74 - 134	0	30
HFPO-DA (GenX)	<0.25		2.02	2.13		ug/Kg	☼	106	53 - 158	5	30
F-53B Minor	<0.20		1.90	1.96		ug/Kg	☼	103	66 - 136	2	30
DONA	<0.20		1.90	1.98		ug/Kg	☼	104	79 - 139	1	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C8 FOSA	90		25 - 150
13C4 PFBA	70		25 - 150
13C5 PFPeA	76		25 - 150
13C2 PFHxA	89		25 - 150
13C4 PFHpA	93		25 - 150
13C4 PFOA	88		25 - 150
13C5 PFNA	97		25 - 150

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: 320-65223-9 MSD
Matrix: Solid
Analysis Batch: 419687

Client Sample ID: SS-166
Prep Type: Total/NA
Prep Batch: 418644

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C2 PFDA	94		25 - 150
13C2 PFUnA	97		25 - 150
13C2 PFDoA	91		25 - 150
13C2 PFTeDA	96		25 - 150
13C3 PFBS	83		25 - 150
18O2 PFHxS	91		25 - 150
13C4 PFOS	88		25 - 150
d3-NMeFOSAA	91		25 - 150
d5-NEtFOSAA	89		25 - 150
M2-4:2 FTS	233	*5	25 - 150
M2-6:2 FTS	167	*5	25 - 150
M2-8:2 FTS	188	*5	25 - 150
d9-N-EtFOSE-M	52		10 - 120
d-N-MeFOSA-M	62		25 - 150
d7-N-MeFOSE-M	49		10 - 120
d-N-EtFOSA-M	64		25 - 150
13C2 PFHxDA	98		25 - 150
13C3 HFPO-DA	81		25 - 150

Lab Sample ID: MB 320-420111/1-A
Matrix: Solid
Analysis Batch: 421568

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420111

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanesulfonic acid (PFOS)	<0.50		0.50	0.20	ug/Kg		10/08/20 21:10	10/13/20 16:48	1

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOS	98		25 - 150	10/08/20 21:10	10/13/20 16:48	1

Lab Sample ID: LCS 320-420111/2-A
Matrix: Solid
Analysis Batch: 421568

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420111

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Perfluorooctanesulfonic acid (PFOS)	1.86	1.89		ug/Kg		102	68 - 141

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFOS	101		25 - 150

Lab Sample ID: MB 320-420112/1-A
Matrix: Solid
Analysis Batch: 421577

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420112

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanesulfonic acid (PFOS)	<0.50		0.50	0.20	ug/Kg		10/08/20 21:14	10/13/20 20:05	1

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOS	104		25 - 150	10/08/20 21:14	10/13/20 20:05	1

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

Lab Sample ID: LCS 320-420112/2-A
Matrix: Solid
Analysis Batch: 421577

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420112
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid (PFOS)	1.86	2.07		ug/Kg		112	68 - 141
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>				
13C4 PFOS	100		25 - 150				

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

Lab Sample ID: 320-65223-1 MS
Matrix: Solid
Analysis Batch: 420393

Client Sample ID: SS-159
Prep Type: Total/NA
Prep Batch: 418642
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA) - DL	29		2.05	31.6	4	ug/Kg	✱	131	72 - 132
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>						
13C4 PFOA - DL	85		25 - 150						

Lab Sample ID: 320-65223-1 MSD
Matrix: Solid
Analysis Batch: 420393

Client Sample ID: SS-159
Prep Type: Total/NA
Prep Batch: 418642
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA) - DL	29		1.93	28.2	4	ug/Kg	✱	-34	72 - 132	11	30
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>								
13C4 PFOA - DL	89		25 - 150								

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

Lab Sample ID: 320-65223-9 MS
Matrix: Solid
Analysis Batch: 421568

Client Sample ID: SS-166
Prep Type: Total/NA
Prep Batch: 420111
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid (PFOS) - RE	0.29	J	1.89	2.72		ug/Kg	✱	129	68 - 141
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>						
13C4 PFOS - RE	100		25 - 150						

Lab Sample ID: 320-65223-9 MSD
Matrix: Solid
Analysis Batch: 421568

Client Sample ID: SS-166
Prep Type: Total/NA
Prep Batch: 420111
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanesulfonic acid (PFOS) - RE	0.29	J	1.89	2.28		ug/Kg	✱	105	68 - 141	18	30

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
13C4 PFOS - RE	92		25 - 150

Lab Sample ID: 320-65223-11 MS
Matrix: Solid
Analysis Batch: 421577

Client Sample ID: SS-167
Prep Type: Total/NA
Prep Batch: 420112

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid (PFOS) - RE	1.4		1.97	3.66		ug/Kg	⊛	114	68 - 141

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
13C4 PFOS - RE	98		25 - 150

Lab Sample ID: 320-65223-11 MSD
Matrix: Solid
Analysis Batch: 421577

Client Sample ID: SS-167
Prep Type: Total/NA
Prep Batch: 420112

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanesulfonic acid (PFOS) - RE	1.4		1.99	3.92		ug/Kg	⊛	126	68 - 141	7	30

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
13C4 PFOS - RE	100		25 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-65223-1 DU
Matrix: Solid
Analysis Batch: 418097

Client Sample ID: SS-159
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Moisture	5.5		6.5		%		17	20
Percent Solids	94.5		93.5		%		1	20

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

LCMS

Prep Batch: 418100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-17	EB-09-28-2020	Total/NA	Water	3535	
320-65223-18	FB-09-28-2020	Total/NA	Water	3535	
320-65223-19	EB-09-29-2020	Total/NA	Water	3535	
320-65223-20	FB-09-29-2020	Total/NA	Water	3535	
MB 320-418100/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-418100/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-418100/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 418370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-17	EB-09-28-2020	Total/NA	Water	537 (modified)	418100
320-65223-18	FB-09-28-2020	Total/NA	Water	537 (modified)	418100
320-65223-19	EB-09-29-2020	Total/NA	Water	537 (modified)	418100
320-65223-20	FB-09-29-2020	Total/NA	Water	537 (modified)	418100
MB 320-418100/1-A	Method Blank	Total/NA	Water	537 (modified)	418100

Analysis Batch: 418556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-418100/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	418100
LCSD 320-418100/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	418100

Prep Batch: 418642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-1	SS-159	Total/NA	Solid	SHAKE	
320-65223-1 - DL	SS-159	Total/NA	Solid	SHAKE	
320-65223-2	SS-158	Total/NA	Solid	SHAKE	
320-65223-3	SS-157	Total/NA	Solid	SHAKE	
320-65223-4	SS-160	Total/NA	Solid	SHAKE	
320-65223-5	SS-161	Total/NA	Solid	SHAKE	
320-65223-6	SS-162	Total/NA	Solid	SHAKE	
320-65223-7	SS-163	Total/NA	Solid	SHAKE	
320-65223-8	SS-164	Total/NA	Solid	SHAKE	
MB 320-418642/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-418642/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-65223-1 MS - DL	SS-159	Total/NA	Solid	SHAKE	
320-65223-1 MS	SS-159	Total/NA	Solid	SHAKE	
320-65223-1 MSD - DL	SS-159	Total/NA	Solid	SHAKE	
320-65223-1 MSD	SS-159	Total/NA	Solid	SHAKE	

Prep Batch: 418644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-9	SS-166	Total/NA	Solid	SHAKE	
320-65223-10	SS-165	Total/NA	Solid	SHAKE	
320-65223-11	SS-167	Total/NA	Solid	SHAKE	
320-65223-12	SS-168	Total/NA	Solid	SHAKE	
320-65223-13	SS-169	Total/NA	Solid	SHAKE	
320-65223-13 - DL	SS-169	Total/NA	Solid	SHAKE	
320-65223-14	SS-170	Total/NA	Solid	SHAKE	
320-65223-15	SS-171	Total/NA	Solid	SHAKE	
320-65223-16	DUP-01	Total/NA	Solid	SHAKE	
MB 320-418644/1-A	Method Blank	Total/NA	Solid	SHAKE	

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QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

LCMS (Continued)

Prep Batch: 418644 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-418644/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-65223-9 MS	SS-166	Total/NA	Solid	SHAKE	
320-65223-9 MSD	SS-166	Total/NA	Solid	SHAKE	

Analysis Batch: 419682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-1	SS-159	Total/NA	Solid	537 (modified)	418642
320-65223-2	SS-158	Total/NA	Solid	537 (modified)	418642
320-65223-3	SS-157	Total/NA	Solid	537 (modified)	418642
320-65223-4	SS-160	Total/NA	Solid	537 (modified)	418642
320-65223-5	SS-161	Total/NA	Solid	537 (modified)	418642
320-65223-6	SS-162	Total/NA	Solid	537 (modified)	418642
320-65223-7	SS-163	Total/NA	Solid	537 (modified)	418642
320-65223-8	SS-164	Total/NA	Solid	537 (modified)	418642
MB 320-418642/1-A	Method Blank	Total/NA	Solid	537 (modified)	418642
LCS 320-418642/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	418642
320-65223-1 MS	SS-159	Total/NA	Solid	537 (modified)	418642
320-65223-1 MSD	SS-159	Total/NA	Solid	537 (modified)	418642

Analysis Batch: 419687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-9	SS-166	Total/NA	Solid	537 (modified)	418644
320-65223-10	SS-165	Total/NA	Solid	537 (modified)	418644
320-65223-11	SS-167	Total/NA	Solid	537 (modified)	418644
320-65223-12	SS-168	Total/NA	Solid	537 (modified)	418644
320-65223-13	SS-169	Total/NA	Solid	537 (modified)	418644
320-65223-14	SS-170	Total/NA	Solid	537 (modified)	418644
320-65223-15	SS-171	Total/NA	Solid	537 (modified)	418644
320-65223-16	DUP-01	Total/NA	Solid	537 (modified)	418644
MB 320-418644/1-A	Method Blank	Total/NA	Solid	537 (modified)	418644
LCS 320-418644/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	418644
320-65223-9 MS	SS-166	Total/NA	Solid	537 (modified)	418644
320-65223-9 MSD	SS-166	Total/NA	Solid	537 (modified)	418644

Prep Batch: 420111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-1 - RE	SS-159	Total/NA	Solid	SHAKE	
320-65223-2 - RE	SS-158	Total/NA	Solid	SHAKE	
320-65223-3 - RE	SS-157	Total/NA	Solid	SHAKE	
320-65223-4 - RE	SS-160	Total/NA	Solid	SHAKE	
320-65223-5 - RE	SS-161	Total/NA	Solid	SHAKE	
320-65223-6 - RE	SS-162	Total/NA	Solid	SHAKE	
320-65223-7 - RE	SS-163	Total/NA	Solid	SHAKE	
320-65223-8 - RE	SS-164	Total/NA	Solid	SHAKE	
320-65223-9 - RE	SS-166	Total/NA	Solid	SHAKE	
320-65223-10 - RE	SS-165	Total/NA	Solid	SHAKE	
MB 320-420111/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-420111/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-65223-9 MS - RE	SS-166	Total/NA	Solid	SHAKE	
320-65223-9 MSD - RE	SS-166	Total/NA	Solid	SHAKE	

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

LCMS

Prep Batch: 420112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-11 - RE	SS-167	Total/NA	Solid	SHAKE	
320-65223-12 - RE	SS-168	Total/NA	Solid	SHAKE	
320-65223-13 - RE	SS-169	Total/NA	Solid	SHAKE	
320-65223-14 - RE	SS-170	Total/NA	Solid	SHAKE	
320-65223-15 - RE	SS-171	Total/NA	Solid	SHAKE	
320-65223-16 - RE	DUP-01	Total/NA	Solid	SHAKE	
MB 320-420112/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-420112/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-65223-11 MS - RE	SS-167	Total/NA	Solid	SHAKE	
320-65223-11 MSD - RE	SS-167	Total/NA	Solid	SHAKE	

Analysis Batch: 420393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-1 - DL	SS-159	Total/NA	Solid	537 (modified)	418642
320-65223-13 - DL	SS-169	Total/NA	Solid	537 (modified)	418644
320-65223-1 MS - DL	SS-159	Total/NA	Solid	537 (modified)	418642
320-65223-1 MSD - DL	SS-159	Total/NA	Solid	537 (modified)	418642

Analysis Batch: 421568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-2 - RE	SS-158	Total/NA	Solid	537 (modified)	420111
320-65223-3 - RE	SS-157	Total/NA	Solid	537 (modified)	420111
320-65223-4 - RE	SS-160	Total/NA	Solid	537 (modified)	420111
320-65223-5 - RE	SS-161	Total/NA	Solid	537 (modified)	420111
320-65223-6 - RE	SS-162	Total/NA	Solid	537 (modified)	420111
320-65223-7 - RE	SS-163	Total/NA	Solid	537 (modified)	420111
320-65223-8 - RE	SS-164	Total/NA	Solid	537 (modified)	420111
320-65223-9 - RE	SS-166	Total/NA	Solid	537 (modified)	420111
320-65223-10 - RE	SS-165	Total/NA	Solid	537 (modified)	420111
MB 320-420111/1-A	Method Blank	Total/NA	Solid	537 (modified)	420111
LCS 320-420111/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	420111
320-65223-9 MS - RE	SS-166	Total/NA	Solid	537 (modified)	420111
320-65223-9 MSD - RE	SS-166	Total/NA	Solid	537 (modified)	420111

Analysis Batch: 421577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-11 - RE	SS-167	Total/NA	Solid	537 (modified)	420112
320-65223-12 - RE	SS-168	Total/NA	Solid	537 (modified)	420112
320-65223-13 - RE	SS-169	Total/NA	Solid	537 (modified)	420112
320-65223-14 - RE	SS-170	Total/NA	Solid	537 (modified)	420112
320-65223-15 - RE	SS-171	Total/NA	Solid	537 (modified)	420112
320-65223-16 - RE	DUP-01	Total/NA	Solid	537 (modified)	420112
MB 320-420112/1-A	Method Blank	Total/NA	Solid	537 (modified)	420112
LCS 320-420112/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	420112
320-65223-11 MS - RE	SS-167	Total/NA	Solid	537 (modified)	420112
320-65223-11 MSD - RE	SS-167	Total/NA	Solid	537 (modified)	420112

Analysis Batch: 421623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-1 - RE	SS-159	Total/NA	Solid	537 (modified)	420111

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

General Chemistry

Analysis Batch: 418097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65223-1	SS-159	Total/NA	Solid	D 2216	
320-65223-2	SS-158	Total/NA	Solid	D 2216	
320-65223-3	SS-157	Total/NA	Solid	D 2216	
320-65223-4	SS-160	Total/NA	Solid	D 2216	
320-65223-5	SS-161	Total/NA	Solid	D 2216	
320-65223-6	SS-162	Total/NA	Solid	D 2216	
320-65223-7	SS-163	Total/NA	Solid	D 2216	
320-65223-8	SS-164	Total/NA	Solid	D 2216	
320-65223-9	SS-166	Total/NA	Solid	D 2216	
320-65223-10	SS-165	Total/NA	Solid	D 2216	
320-65223-11	SS-167	Total/NA	Solid	D 2216	
320-65223-12	SS-168	Total/NA	Solid	D 2216	
320-65223-13	SS-169	Total/NA	Solid	D 2216	
320-65223-14	SS-170	Total/NA	Solid	D 2216	
320-65223-15	SS-171	Total/NA	Solid	D 2216	
320-65223-16	DUP-01	Total/NA	Solid	D 2216	
320-65223-1 DU	SS-159	Total/NA	Solid	D 2216	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-159

Date Collected: 09/28/20 14:05

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-159

Date Collected: 09/28/20 14:05

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-1

Matrix: Solid

Percent Solids: 94.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 01:18	IK	TAL SAC
Total/NA	Prep	SHAKE	DL		5.07 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			420393	10/09/20 18:08	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.20 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	5			421623	10/14/20 11:58	IK	TAL SAC

Client Sample ID: SS-158

Date Collected: 09/28/20 14:30

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-158

Date Collected: 09/28/20 14:30

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-2

Matrix: Solid

Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 01:46	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.06 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 17:35	IK	TAL SAC

Client Sample ID: SS-157

Date Collected: 09/28/20 14:40

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-157

Date Collected: 09/28/20 14:40

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-3

Matrix: Solid

Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 01:55	IK	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-157

Date Collected: 09/28/20 14:40

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-3

Matrix: Solid

Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	RE		5.13 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 17:45	IK	TAL SAC

Client Sample ID: SS-160

Date Collected: 09/28/20 14:50

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-160

Date Collected: 09/28/20 14:50

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-4

Matrix: Solid

Percent Solids: 92.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 02:04	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.07 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 17:54	IK	TAL SAC

Client Sample ID: SS-161

Date Collected: 09/28/20 15:20

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-161

Date Collected: 09/28/20 15:20

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-5

Matrix: Solid

Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.38 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 02:32	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.48 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 18:03	IK	TAL SAC

Client Sample ID: SS-162

Date Collected: 09/29/20 10:35

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-162

Date Collected: 09/29/20 10:35

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-6

Matrix: Solid

Percent Solids: 94.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.46 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 02:42	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.32 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 18:13	IK	TAL SAC

Client Sample ID: SS-163

Date Collected: 09/29/20 10:40

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-163

Date Collected: 09/29/20 10:40

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-7

Matrix: Solid

Percent Solids: 95.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 02:51	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.50 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 18:41	IK	TAL SAC

Client Sample ID: SS-164

Date Collected: 09/29/20 10:50

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-164

Date Collected: 09/29/20 10:50

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-8

Matrix: Solid

Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.12 g	10.00 mL	418642	10/05/20 05:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419682	10/08/20 03:01	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.24 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 18:50	IK	TAL SAC

Client Sample ID: SS-166

Date Collected: 09/29/20 10:55

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-166

Date Collected: 09/29/20 10:55

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-9

Matrix: Solid

Percent Solids: 96.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.22 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 04:15	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.09 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 18:59	IK	TAL SAC

Client Sample ID: SS-165

Date Collected: 09/29/20 11:05

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-165

Date Collected: 09/29/20 11:05

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-10

Matrix: Solid

Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 04:44	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.10 g	10.00 mL	420111	10/08/20 21:10	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421568	10/13/20 19:27	IK	TAL SAC

Client Sample ID: SS-167

Date Collected: 09/29/20 11:15

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-167

Date Collected: 09/29/20 11:15

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-11

Matrix: Solid

Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 04:53	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.19 g	10.00 mL	420112	10/08/20 21:14	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421577	10/13/20 20:42	IK	TAL SAC

Client Sample ID: SS-168

Date Collected: 09/29/20 11:25

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-168

Date Collected: 09/29/20 11:25

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-12

Matrix: Solid

Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.06 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 05:02	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.32 g	10.00 mL	420112	10/08/20 21:14	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421577	10/13/20 21:10	IK	TAL SAC

Client Sample ID: SS-169

Date Collected: 09/29/20 11:30

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-13

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-169

Date Collected: 09/29/20 11:30

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-13

Matrix: Solid

Percent Solids: 92.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.04 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 05:30	IK	TAL SAC
Total/NA	Prep	SHAKE	DL		5.04 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)	DL	20			420393	10/09/20 18:36	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.26 g	10.00 mL	420112	10/08/20 21:14	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421577	10/13/20 21:20	IK	TAL SAC

Client Sample ID: SS-170

Date Collected: 09/29/20 11:35

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-170

Date Collected: 09/29/20 11:35

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-14

Matrix: Solid

Percent Solids: 89.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 05:40	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.11 g	10.00 mL	420112	10/08/20 21:14	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421577	10/13/20 21:29	IK	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: SS-171
Date Collected: 09/29/20 11:40
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: SS-171
Date Collected: 09/29/20 11:40
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-15
Matrix: Solid
Percent Solids: 92.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.39 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 05:49	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.17 g	10.00 mL	420112	10/08/20 21:14	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421577	10/13/20 21:57	IK	TAL SAC

Client Sample ID: DUP-01
Date Collected: 09/28/20 00:00
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418097	10/02/20 12:06	TCS	TAL SAC

Client Sample ID: DUP-01
Date Collected: 09/28/20 00:00
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-16
Matrix: Solid
Percent Solids: 97.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.25 g	10.00 mL	418644	10/05/20 05:32	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			419687	10/08/20 05:58	IK	TAL SAC
Total/NA	Prep	SHAKE	RE		5.06 g	10.00 mL	420112	10/08/20 21:14	AP	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			421577	10/13/20 22:06	IK	TAL SAC

Client Sample ID: EB-09-28-2020
Date Collected: 09/28/20 14:10
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			271.9 mL	10.00 mL	418100	10/02/20 11:49	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			418370	10/03/20 12:24	RS1	TAL SAC

Client Sample ID: FB-09-28-2020
Date Collected: 09/28/20 14:15
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65223-18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			274.8 mL	10.00 mL	418100	10/02/20 11:49	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			418370	10/03/20 12:33	RS1	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Client Sample ID: EB-09-29-2020

Lab Sample ID: 320-65223-19

Date Collected: 09/29/20 14:15

Matrix: Water

Date Received: 10/01/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.3 mL	10.00 mL	418100	10/02/20 11:49	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			418370	10/03/20 12:42	RS1	TAL SAC

Client Sample ID: FB-09-29-2020

Lab Sample ID: 320-65223-20

Date Collected: 09/29/20 14:20

Matrix: Water

Date Received: 10/01/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.4 mL	10.00 mL	418100	10/02/20 11:49	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			418370	10/03/20 12:52	RS1	TAL SAC

Laboratory References:

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 Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

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

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65223-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65223-1	SS-159	Solid	09/28/20 14:05	10/01/20 09:40	
320-65223-2	SS-158	Solid	09/28/20 14:30	10/01/20 09:40	
320-65223-3	SS-157	Solid	09/28/20 14:40	10/01/20 09:40	
320-65223-4	SS-160	Solid	09/28/20 14:50	10/01/20 09:40	
320-65223-5	SS-161	Solid	09/28/20 15:20	10/01/20 09:40	
320-65223-6	SS-162	Solid	09/29/20 10:35	10/01/20 09:40	
320-65223-7	SS-163	Solid	09/29/20 10:40	10/01/20 09:40	
320-65223-8	SS-164	Solid	09/29/20 10:50	10/01/20 09:40	
320-65223-9	SS-166	Solid	09/29/20 10:55	10/01/20 09:40	
320-65223-10	SS-165	Solid	09/29/20 11:05	10/01/20 09:40	
320-65223-11	SS-167	Solid	09/29/20 11:15	10/01/20 09:40	
320-65223-12	SS-168	Solid	09/29/20 11:25	10/01/20 09:40	
320-65223-13	SS-169	Solid	09/29/20 11:30	10/01/20 09:40	
320-65223-14	SS-170	Solid	09/29/20 11:35	10/01/20 09:40	
320-65223-15	SS-171	Solid	09/29/20 11:40	10/01/20 09:40	
320-65223-16	DUP-01	Solid	09/28/20 00:00	10/01/20 09:40	
320-65223-17	EB-09-28-2020	Water	09/28/20 14:10	10/01/20 09:40	
320-65223-18	FB-09-28-2020	Water	09/28/20 14:15	10/01/20 09:40	
320-65223-19	EB-09-29-2020	Water	09/29/20 14:15	10/01/20 09:40	
320-65223-20	FB-09-29-2020	Water	09/29/20 14:20	10/01/20 09:40	

Eurofins Test America, Sacramento
880 Riverside Parkway

Chain of Custody Record **492301**



Environment Testing
TestAmerica

Address: West Sacramento, CA 95605-1500

Regulatory Program: DW NPDES RCRA Other:

TAL-8210

Client Contact		Project Manager: <u>Erin Henry</u>		Site Contact: <u>Amy Siefker</u>		Date: <u>9/30/20</u>		COC No:	
Company Name: <u>Arcadis</u>		Tel/Email:		Lab Contact: <u>S. Fredrick</u>		Carrier: <u>Fedex</u>		1 of 2 COCs	
Address: <u>126 N. Jefferson St, Suite 400</u>		Analysis Turnaround Time							
City/State/Zip: <u>Milwaukee, WI 53202</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____							
Phone:		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week Standard <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day							
Fax:									
Project Name: <u>Marinette Sup. Site Inv.</u>									
Site: <u>Marinette, WI</u>									
PO# <u>30005294.00020</u>		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		# of Cont.	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		# of Cont.	
✓ SS-159	9/28/20	1405	G	S	1	N	N	X	
✓ SS-158		1430			1			X	
✓ SS-157		1440			1			X	
✓ SS-160		1450			1			X	
✓ SS-161		1520			1			X	
✓ SS-162	9/29/20	1035			1			X	
✓ SS-163		1040			1			X	
✓ SS-164		1050			1			X	
✓ SS-166		1055			3	Y	X		MS/MSD
✓ SS-165		1105			1	N	X		
✓ SS-167		1115			1	N	X		
✓ SS-168		1125			1	N	X		
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.		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"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months							
Special Instructions/QC Requirements & Comments: <u>Standard TAT</u>									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>135219 / 135717</u>		Cooler Temp. (°C): Obs'd: <u>10.3</u> Corr'd: <u>1.8</u>		Therm ID No.: <u>D46</u>			
Relinquished by: <u>Amy Siefker</u>		Company: <u>Arcadis</u>		Date/Time: <u>9/30/20 / 11:30</u>		Received by: <u>[Signature]</u>		Company: <u>Eurofins</u>	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	



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10/15/2020



Address: _____

Regulatory Program: DW NPDES RCRA Other:

TAL-8210

Client Contact		Project Manager:			Site Contact:			Date: 9/30/20			COC No:					
Company Name:		Tel/Email:			Lab Contact:			Carrier: FedEx			2 of 2 COCs					
Address:		Analysis Turnaround Time			Filtered Sample (Y/N)			Perform MS/MSD (Y/N)			537 Mod PFAS 36 compounds			Sampler: Amy Sietker		
City/State/Zip: SEE PAGE 1														<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		
Phone:											Walk-in Client:					
Fax:											Lab Sampling:					
Project Name:											Job / SDG No.:					
Site:																
P O #																
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)					Sample Specific Notes:			
SS-169		9/29/20	1130	G	S	1	N	N	X							
SS-170		↓	1135		S	1			X							
SS-171		↓	1140		S	1			X							
DUP-01		9/28/20	—		S	1			X				Duplicate			
EB-09-28-2020		↓	1410		W	2			X				Equipment Blank			
FB-09-28-2020		↓	1415			2			X				Field Blank			
EB-09-29-2020		9/29/20	1415	↓	↓	2	↓	↓	X				Equipment Blank			
FB-09-29-2020		9/29/20	1420	↓	↓	2	↓	↓	X				Field Blank			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____																
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.							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"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									
Special Instructions/QC Requirements & Comments: Standard TAT																
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 135 219 / 135 917			Cooler Temp. (°C): Obs'd: 3.5			Corr'd: 4.0			Therm ID No: 266					
Relinquished by: Amy Sietker		Company: Arcadis		Date/Time: 9/30/20 1630		Received by: [Signature]		Company: EADS		Date/Time: 10/1/20 940						
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:						
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:						

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10/15/2020

x Time List 1400-DK 10/1/20



Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-65223-1

Login Number: 65223

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	135719/135717
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	
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.	False	Refer to Job Narrative for details.
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-65226-1

Client Project/Site: Marinette Supp Site Inv - 30015294.00020

For:

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

Attn: Lisa Rutkowski



Authorized for release by:
10/14/2020 2:30:50 PM

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

LINKS

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results through
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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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Definitions/Glossary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Job ID: 320-65226-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative 320-65226-1

Comments

No additional comments.

Receipt

The samples were received on 10/1/2020 9:40 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8° C and 4.0° C.

Receipt Exceptions

The following sample(s) was collected in an improper container: Sample#17 SS-140 was received in a 4oz soil glass jar. PFC analysis sample should be in plastic containers and not glass containers.320-65226-17. Sample 17 cancelled by client.

LCMS

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for d7-N-MeFOSE-M and d9-N-EtFOSE-M: MB 320-418992/1-A. 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 Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for d-N-EtFOSA-M: 320-65226-A-1-B MS. 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): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several IDA of the following samples: 320-65226-1, 320-65226-2, 320-65226-4, 320-65226-5, 320-65226-7, 320-65226-8, 320-65226-9, 320-65226-A-1-B MS and 320-65226-A-1-C MSD. 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 M2-4:2 FTS of the following samples: 320-65226-3 and 320-65226-6. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for several analytes of preparation batch 320-418992 and analytical batch 320-420405 were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

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/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s). 320-65226-9

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for d7-N-MeFOSE-M and d9-N-EtFOSE-M: MB 320-418993/1-A. 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): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS and M2-8:2 FTS of the following samples: 320-65226-10, 320-65226-14, 320-65226-15, 320-65226-A-10-B MS and 320-65226-A-10-C MSD. 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 of the following samples: 320-65226-11, 320-65226-12, 320-65226-13 and 320-65226-19. 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 M2-8:2 FTS of the following sample: 320-65226-18. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Job ID: 320-65226-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method 537 (modified): The "1" 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.
320-65226-10

Method 537 (modified): The matrix spike (MS) recovery for 8:2 FTS of preparation batch 320-418993 and analytical batch 320-420408 was outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for d7-N-MeFOSE-M and d9-N-EtFOSE-M: MB 320-418992/1-A. 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): Results for samples 320-65226-10, 320-65226-A-10-B MS and 320-65226-A-10-C MSD 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): Due to the high concentration of 6:2 FTS, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-418993 and analytical batch 320-420974 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): The concentration of 8:2 FTS associated with the following sample exceeded the instrument calibration range: 320-65226-A-1-B MS. This is due to the addition of the matrix spike solution. The analyte have been qualified; however, the peak did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range

Method 537 (modified): Due to the high concentration of 8:2 FTS the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-418992 and analytical batch 320-420405 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): Results for samples 320-65226-1, 320-65226-A-1-B MS and 320-65226-A-1-C MSD 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): Due to the high concentration of 8:2 FTS, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-418992 and analytical batch 320-421231 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) precision for 10:2 FTS in preparation batch 320-418992 and analytical batch 320-421231 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

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 SHAKE: The sample, 320-65226-13, was yellow after extraction and final volume. Shake_Bath_14D/PFC_IDA Solid 320-418993

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

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-172

Lab Sample ID: 320-65226-1

Date Collected: 09/29/20 11:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.40	B	0.21	0.030	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluoropentanoic acid (PFPeA)	0.66		0.21	0.081	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorohexanoic acid (PFHxA)	0.88	F1	0.21	0.044	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluoroheptanoic acid (PFHpA)	0.76		0.21	0.031	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorooctanoic acid (PFOA)	6.2	F1	0.21	0.091	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorononanoic acid (PFNA)	2.1	F1	0.21	0.038	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorodecanoic acid (PFDA)	6.4	F1	0.21	0.023	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluoroundecanoic acid (PFUnA)	3.3	F1	0.21	0.038	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorododecanoic acid (PFDoA)	1.3		0.21	0.071	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorotridecanoic acid (PFTriA)	0.58		0.21	0.054	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorotetradecanoic acid (PFTeA)	0.46		0.21	0.057	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.16	J	0.21	0.047	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluoro-n-octadecanoic acid (PFODA)	0.035	J F2 F1	0.21	0.030	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorohexanesulfonic acid (PFHxS)	0.10	J	0.21	0.033	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorodecanesulfonic acid (PFDS)	0.11	J	0.21	0.041	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorooctanesulfonic acid (PFOS)	12		0.53	0.21	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorooctanesulfonamide (FOSA)	1.2		0.21	0.087	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21	F1	0.21	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorononanesulfonic acid (PFNS)	0.050	J	0.21	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.41	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.1		2.1	0.39	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
4:2 FTS	<2.1		2.1	0.39	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
6:2 FTS	3.3	F1 F2	2.1	0.16	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
8:2 FTS	16	F2	2.1	0.26	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
NEtFOSA	0.033	J	0.21	0.025	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
NMeFOSA	<0.21		0.21	0.043	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21	F1	0.21	0.063	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
NMeFOSE	<0.21		0.21	0.075	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
NEtFOSE	0.063	J	0.21	0.038	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
F-53B Major	<0.21		0.21	0.029	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
HFPO-DA (GenX)	<0.26		0.26	0.12	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/06/20 05:20	10/09/20 22:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	81		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C4 PFBA	65		25 - 150	10/06/20 05:20	10/09/20 22:39	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-172

Lab Sample ID: 320-65226-1

Date Collected: 09/29/20 11:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.9

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 PFPeA	73		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C2 PFHxA	90		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C4 PFHpA	89		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C4 PFOA	85		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C5 PFNA	98		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C2 PFDA	88		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C2 PFUnA	94		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C2 PFDoA	93		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C2 PFTeDA	101		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C3 PFBS	80		25 - 150	10/06/20 05:20	10/09/20 22:39	1
18O2 PFHxS	91		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C4 PFOS	83		25 - 150	10/06/20 05:20	10/09/20 22:39	1
d3-NMeFOSAA	86		25 - 150	10/06/20 05:20	10/09/20 22:39	1
d5-NEtFOSAA	99		25 - 150	10/06/20 05:20	10/09/20 22:39	1
M2-4:2 FTS	273	*5	25 - 150	10/06/20 05:20	10/09/20 22:39	1
M2-6:2 FTS	207	*5	25 - 150	10/06/20 05:20	10/09/20 22:39	1
M2-8:2 FTS	219	*5	25 - 150	10/06/20 05:20	10/09/20 22:39	1
d9-N-EtFOSE-M	61		10 - 120	10/06/20 05:20	10/09/20 22:39	1
d-N-MeFOSA-M	62		25 - 150	10/06/20 05:20	10/09/20 22:39	1
d7-N-MeFOSE-M	62		10 - 120	10/06/20 05:20	10/09/20 22:39	1
d-N-EtFOSA-M	63		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C2 PFHxDA	105		25 - 150	10/06/20 05:20	10/09/20 22:39	1
13C3 HFPO-DA	81		25 - 150	10/06/20 05:20	10/09/20 22:39	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>
10:2 FTS	24	F2	21	5.3	ug/Kg	☆	10/06/20 05:20	10/13/20 10:29	100
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
M2-8:2 FTS	126		25 - 150				10/06/20 05:20	10/13/20 10:29	100

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>
Percent Moisture	11.1		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	88.9		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-156

Lab Sample ID: 320-65226-2

Date Collected: 09/29/20 13:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.26	B	0.19	0.027	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluoropentanoic acid (PFPeA)	0.61		0.19	0.073	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorohexanoic acid (PFHxA)	0.67		0.19	0.040	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluoroheptanoic acid (PFHpA)	0.24		0.19	0.028	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorooctanoic acid (PFOA)	0.20		0.19	0.082	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorononanoic acid (PFNA)	0.63		0.19	0.034	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorodecanoic acid (PFDA)	0.22		0.19	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluoroundecanoic acid (PFUnA)	0.17	J	0.19	0.034	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorododecanoic acid (PFDoA)	<0.19		0.19	0.064	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorotridecanoic acid (PFTriA)	<0.19		0.19	0.049	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorotetradecanoic acid (PFTeA)	<0.19		0.19	0.051	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.044	J	0.19	0.042	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.19		0.19	0.027	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		0.19	0.024	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorohexanesulfonic acid (PFHxS)	0.032	J	0.19	0.029	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		0.19	0.033	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorodecanesulfonic acid (PFDS)	0.075	J	0.19	0.037	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorooctanesulfonic acid (PFOS)	1.1		0.48	0.19	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorooctanesulfonamide (FOSA)	<0.19		0.19	0.078	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluoropentanesulfonic acid (PFPeS)	<0.19		0.19	0.019	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorononanesulfonic acid (PFNS)	<0.19		0.19	0.019	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.9		1.9	0.37	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		1.9	0.35	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
4:2 FTS	<1.9		1.9	0.35	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
6:2 FTS	0.19	J	1.9	0.14	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
8:2 FTS	0.26	J	1.9	0.24	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
10:2 FTS	0.069	J	0.19	0.048	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
NEtFOSA	<0.19		0.19	0.023	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
NMeFOSA	<0.19		0.19	0.039	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
Perfluorododecanesulfonic acid (PFDoS)	<0.19		0.19	0.057	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
NMeFOSE	<0.19		0.19	0.068	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
NEtFOSE	<0.19		0.19	0.034	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
F-53B Major	<0.19		0.19	0.026	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
HFPO-DA (GenX)	<0.24		0.24	0.10	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
F-53B Minor	<0.19		0.19	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1
DONA	<0.19		0.19	0.017	ug/Kg	☼	10/06/20 05:20	10/09/20 23:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	83		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C4 PFBA	66		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C5 PFPeA	73		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C2 PFHxA	86		25 - 150	10/06/20 05:20	10/09/20 23:07	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-156

Lab Sample ID: 320-65226-2

Date Collected: 09/29/20 13:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.9

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	90		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C4 PFOA	87		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C5 PFNA	93		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C2 PFDA	90		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C2 PFUnA	88		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C2 PFDoA	80		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C2 PFTeDA	78		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C3 PFBS	76		25 - 150	10/06/20 05:20	10/09/20 23:07	1
18O2 PFHxS	84		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C4 PFOS	84		25 - 150	10/06/20 05:20	10/09/20 23:07	1
d3-NMeFOSAA	92		25 - 150	10/06/20 05:20	10/09/20 23:07	1
d5-NEtFOSAA	95		25 - 150	10/06/20 05:20	10/09/20 23:07	1
M2-4:2 FTS	249	*5	25 - 150	10/06/20 05:20	10/09/20 23:07	1
M2-6:2 FTS	204	*5	25 - 150	10/06/20 05:20	10/09/20 23:07	1
M2-8:2 FTS	216	*5	25 - 150	10/06/20 05:20	10/09/20 23:07	1
d9-N-EtFOSE-M	55		10 - 120	10/06/20 05:20	10/09/20 23:07	1
d-N-MeFOSA-M	72		25 - 150	10/06/20 05:20	10/09/20 23:07	1
d7-N-MeFOSE-M	57		10 - 120	10/06/20 05:20	10/09/20 23:07	1
d-N-EtFOSA-M	72		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C2 PFHxDA	74		25 - 150	10/06/20 05:20	10/09/20 23:07	1
13C3 HFPO-DA	76		25 - 150	10/06/20 05:20	10/09/20 23:07	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>
Percent Moisture	4.1		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	95.9		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-155

Lab Sample ID: 320-65226-3

Date Collected: 09/29/20 13:45

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.21	B	0.19	0.027	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluoropentanoic acid (PFPeA)	0.28		0.19	0.074	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorohexanoic acid (PFHxA)	0.22		0.19	0.040	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluoroheptanoic acid (PFHpA)	0.19		0.19	0.028	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorooctanoic acid (PFOA)	0.30		0.19	0.082	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorononanoic acid (PFNA)	0.40		0.19	0.034	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorodecanoic acid (PFDA)	0.35		0.19	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluoroundecanoic acid (PFUnA)	0.15	J	0.19	0.034	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorododecanoic acid (PFDoA)	<0.19		0.19	0.064	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorotridecanoic acid (PFTriA)	<0.19		0.19	0.049	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorotetradecanoic acid (PFTeA)	<0.19		0.19	0.052	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.046	J	0.19	0.042	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.19		0.19	0.027	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		0.19	0.024	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorohexanesulfonic acid (PFHxS)	0.053	J	0.19	0.030	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		0.19	0.033	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorodecanesulfonic acid (PFDS)	<0.19		0.19	0.037	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorooctanesulfonic acid (PFOS)	5.1		0.48	0.19	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorooctanesulfonamide (FOSA)	<0.19		0.19	0.078	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluoropentanesulfonic acid (PFPeS)	<0.19		0.19	0.019	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorononanesulfonic acid (PFNS)	<0.19		0.19	0.019	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.9		1.9	0.37	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		1.9	0.35	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
4:2 FTS	<1.9		1.9	0.35	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
6:2 FTS	0.98	J	1.9	0.14	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
8:2 FTS	0.78	J	1.9	0.24	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
10:2 FTS	<0.19		0.19	0.048	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
NEtFOSA	<0.19		0.19	0.023	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
NMeFOSA	<0.19		0.19	0.039	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Perfluorododecanesulfonic acid (PFDoS)	<0.19		0.19	0.057	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
NMeFOSE	<0.19		0.19	0.068	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
NEtFOSE	<0.19		0.19	0.034	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
F-53B Major	<0.19		0.19	0.026	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
HFPO-DA (GenX)	<0.24		0.24	0.11	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
F-53B Minor	<0.19		0.19	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
DONA	<0.19		0.19	0.017	ug/Kg	☼	10/06/20 05:20	10/09/20 23:16	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	75		25 - 150				10/06/20 05:20	10/09/20 23:16	1
13C4 PFBA	68		25 - 150				10/06/20 05:20	10/09/20 23:16	1
13C5 PFPeA	72		25 - 150				10/06/20 05:20	10/09/20 23:16	1
13C2 PFHxA	77		25 - 150				10/06/20 05:20	10/09/20 23:16	1
13C4 PFHpA	81		25 - 150				10/06/20 05:20	10/09/20 23:16	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-155

Lab Sample ID: 320-65226-3

Date Collected: 09/29/20 13:45

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 96.3

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	80		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C5 PFNA	88		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C2 PFDA	81		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C2 PFUnA	78		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C2 PFDoA	82		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C2 PFTeDA	90		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C3 PFBS	66		25 - 150	10/06/20 05:20	10/09/20 23:16	1
18O2 PFHxS	73		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C4 PFOS	71		25 - 150	10/06/20 05:20	10/09/20 23:16	1
d3-NMeFOSAA	81		25 - 150	10/06/20 05:20	10/09/20 23:16	1
d5-NEtFOSAA	76		25 - 150	10/06/20 05:20	10/09/20 23:16	1
M2-4:2 FTS	164	*5	25 - 150	10/06/20 05:20	10/09/20 23:16	1
M2-6:2 FTS	117		25 - 150	10/06/20 05:20	10/09/20 23:16	1
M2-8:2 FTS	136		25 - 150	10/06/20 05:20	10/09/20 23:16	1
d9-N-EtFOSE-M	41		10 - 120	10/06/20 05:20	10/09/20 23:16	1
d-N-MeFOSA-M	66		25 - 150	10/06/20 05:20	10/09/20 23:16	1
d7-N-MeFOSE-M	39		10 - 120	10/06/20 05:20	10/09/20 23:16	1
d-N-EtFOSA-M	70		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C2 PFHxDA	85		25 - 150	10/06/20 05:20	10/09/20 23:16	1
13C3 HFPO-DA	74		25 - 150	10/06/20 05:20	10/09/20 23:16	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>
Percent Moisture	3.7		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	96.3		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-154

Lab Sample ID: 320-65226-4

Date Collected: 09/29/20 13:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 91.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.30	B	0.21	0.029	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluoropentanoic acid (PFPeA)	0.57		0.21	0.079	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorohexanoic acid (PFHxA)	0.44		0.21	0.043	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluoroheptanoic acid (PFHpA)	0.36		0.21	0.030	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorooctanoic acid (PFOA)	0.70		0.21	0.089	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorononanoic acid (PFNA)	0.74		0.21	0.037	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorodecanoic acid (PFDA)	0.97		0.21	0.023	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluoroundecanoic acid (PFUnA)	1.5		0.21	0.037	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorododecanoic acid (PFDoA)	0.11	J	0.21	0.069	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.053	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.056	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.054	J	0.21	0.045	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.029	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorohexanesulfonic acid (PFHxS)	0.059	J	0.21	0.032	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.036	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.040	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorooctanesulfonic acid (PFOS)	0.96		0.52	0.21	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.084	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.40	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.38	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
4:2 FTS	<2.1		2.1	0.38	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
6:2 FTS	2.7		2.1	0.15	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
8:2 FTS	4.9		2.1	0.26	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
10:2 FTS	0.16	J	0.21	0.052	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
NMeFOSA	<0.21		0.21	0.042	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.062	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
NMeFOSE	<0.21		0.21	0.073	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
NEtFOSE	<0.21		0.21	0.037	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
F-53B Major	<0.21		0.21	0.028	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/06/20 05:20	10/09/20 23:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	68		25 - 150				10/06/20 05:20	10/09/20 23:26	1
13C4 PFBA	63		25 - 150				10/06/20 05:20	10/09/20 23:26	1
13C5 PFPeA	70		25 - 150				10/06/20 05:20	10/09/20 23:26	1
13C2 PFHxA	78		25 - 150				10/06/20 05:20	10/09/20 23:26	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-154

Lab Sample ID: 320-65226-4

Date Collected: 09/29/20 13:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 91.6

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	86		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C4 PFOA	76		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C5 PFNA	78		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C2 PFDA	66		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C2 PFUnA	65		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C2 PFDoA	67		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C2 PFTeDA	68		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C3 PFBS	71		25 - 150	10/06/20 05:20	10/09/20 23:26	1
18O2 PFHxS	76		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C4 PFOS	71		25 - 150	10/06/20 05:20	10/09/20 23:26	1
d3-NMeFOSAA	62		25 - 150	10/06/20 05:20	10/09/20 23:26	1
d5-NEtFOSAA	67		25 - 150	10/06/20 05:20	10/09/20 23:26	1
M2-4:2 FTS	231	*5	25 - 150	10/06/20 05:20	10/09/20 23:26	1
M2-6:2 FTS	184	*5	25 - 150	10/06/20 05:20	10/09/20 23:26	1
M2-8:2 FTS	169	*5	25 - 150	10/06/20 05:20	10/09/20 23:26	1
d9-N-EtFOSE-M	29		10 - 120	10/06/20 05:20	10/09/20 23:26	1
d-N-MeFOSA-M	35		25 - 150	10/06/20 05:20	10/09/20 23:26	1
d7-N-MeFOSE-M	31		10 - 120	10/06/20 05:20	10/09/20 23:26	1
d-N-EtFOSA-M	34		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C2 PFHxDA	65		25 - 150	10/06/20 05:20	10/09/20 23:26	1
13C3 HFPO-DA	70		25 - 150	10/06/20 05:20	10/09/20 23:26	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>
Percent Moisture	8.4		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	91.6		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-153

Lab Sample ID: 320-65226-5

Date Collected: 09/29/20 14:15

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 91.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.2	B	0.20	0.028	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluoropentanoic acid (PFPeA)	6.8		0.20	0.077	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorohexanoic acid (PFHxA)	3.2		0.20	0.042	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluoroheptanoic acid (PFHpA)	4.7		0.20	0.029	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorooctanoic acid (PFOA)	2.2		0.20	0.086	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorononanoic acid (PFNA)	0.74		0.20	0.036	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorodecanoic acid (PFDA)	0.14	J	0.20	0.022	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.045	J	0.20	0.044	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorohexanesulfonic acid (PFHxS)	0.069	J	0.20	0.031	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorooctanesulfonic acid (PFOS)	2.3		0.50	0.20	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
6:2 FTS	0.46	J	2.0	0.15	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/06/20 05:20	10/09/20 23:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	80		25 - 150				10/06/20 05:20	10/09/20 23:54	1
13C4 PFBA	64		25 - 150				10/06/20 05:20	10/09/20 23:54	1
13C5 PFPeA	70		25 - 150				10/06/20 05:20	10/09/20 23:54	1
13C2 PFHxA	81		25 - 150				10/06/20 05:20	10/09/20 23:54	1
13C4 PFHpA	84		25 - 150				10/06/20 05:20	10/09/20 23:54	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-153

Lab Sample ID: 320-65226-5

Date Collected: 09/29/20 14:15

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 91.9

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	83		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C5 PFNA	86		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C2 PFDA	80		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C2 PFUnA	86		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C2 PFDoA	92		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C2 PFTeDA	95		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C3 PFBS	72		25 - 150	10/06/20 05:20	10/09/20 23:54	1
18O2 PFHxS	80		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C4 PFOS	78		25 - 150	10/06/20 05:20	10/09/20 23:54	1
d3-NMeFOSAA	79		25 - 150	10/06/20 05:20	10/09/20 23:54	1
d5-NEtFOSAA	76		25 - 150	10/06/20 05:20	10/09/20 23:54	1
M2-4:2 FTS	206	*5	25 - 150	10/06/20 05:20	10/09/20 23:54	1
M2-6:2 FTS	187	*5	25 - 150	10/06/20 05:20	10/09/20 23:54	1
M2-8:2 FTS	209	*5	25 - 150	10/06/20 05:20	10/09/20 23:54	1
d9-N-EtFOSE-M	44		10 - 120	10/06/20 05:20	10/09/20 23:54	1
d-N-MeFOSA-M	60		25 - 150	10/06/20 05:20	10/09/20 23:54	1
d7-N-MeFOSE-M	45		10 - 120	10/06/20 05:20	10/09/20 23:54	1
d-N-EtFOSA-M	63		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C2 PFHxDA	90		25 - 150	10/06/20 05:20	10/09/20 23:54	1
13C3 HFPO-DA	70		25 - 150	10/06/20 05:20	10/09/20 23:54	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>
Percent Moisture	8.1		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	91.9		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-152

Lab Sample ID: 320-65226-6

Date Collected: 09/29/20 14:25

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.21	J B	0.22	0.030	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluoropentanoic acid (PFPeA)	0.36		0.22	0.083	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorohexanoic acid (PFHxA)	0.19	J	0.22	0.045	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluoroheptanoic acid (PFHpA)	0.15	J	0.22	0.031	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorooctanoic acid (PFOA)	0.57		0.22	0.093	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorononanoic acid (PFNA)	0.41		0.22	0.039	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorodecanoic acid (PFDA)	<0.22		0.22	0.024	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluoroundecanoic acid (PFUnA)	<0.22		0.22	0.039	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorododecanoic acid (PFDoA)	<0.22		0.22	0.072	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorotridecanoic acid (PFTriA)	<0.22		0.22	0.055	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.058	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.048	J	0.22	0.047	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.030	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.027	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorohexanesulfonic acid (PFHxS)	<0.22		0.22	0.033	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.038	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.042	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorooctanesulfonic acid (PFOS)	1.1		0.54	0.22	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorooctanesulfonamide (FOSA)	<0.22		0.22	0.088	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.42	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.40	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
4:2 FTS	<2.2		2.2	0.40	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
6:2 FTS	0.78	J	2.2	0.16	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
8:2 FTS	<2.2		2.2	0.27	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
10:2 FTS	<0.22		0.22	0.054	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
NEtFOSA	<0.22		0.22	0.026	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
NMeFOSA	<0.22		0.22	0.044	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.065	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
NMeFOSE	<0.22		0.22	0.077	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
NEtFOSE	<0.22		0.22	0.039	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
F-53B Major	<0.22		0.22	0.029	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
F-53B Minor	<0.22		0.22	0.024	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
DONA	<0.22		0.22	0.019	ug/Kg	☼	10/06/20 05:20	10/10/20 00:03	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	70		25 - 150				10/06/20 05:20	10/10/20 00:03	1
13C4 PFBA	74		25 - 150				10/06/20 05:20	10/10/20 00:03	1
13C5 PFPeA	75		25 - 150				10/06/20 05:20	10/10/20 00:03	1
13C2 PFHxA	83		25 - 150				10/06/20 05:20	10/10/20 00:03	1
13C4 PFHpA	84		25 - 150				10/06/20 05:20	10/10/20 00:03	1
13C4 PFOA	76		25 - 150				10/06/20 05:20	10/10/20 00:03	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-152

Lab Sample ID: 320-65226-6

Date Collected: 09/29/20 14:25

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.6

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	78		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C2 PFDA	69		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C2 PFUnA	63		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C2 PFDoA	60		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C2 PFTeDA	60		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C3 PFBS	77		25 - 150	10/06/20 05:20	10/10/20 00:03	1
18O2 PFHxS	81		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C4 PFOS	70		25 - 150	10/06/20 05:20	10/10/20 00:03	1
d3-NMeFOSAA	68		25 - 150	10/06/20 05:20	10/10/20 00:03	1
d5-NEtFOSAA	64		25 - 150	10/06/20 05:20	10/10/20 00:03	1
M2-4:2 FTS	183	*5	25 - 150	10/06/20 05:20	10/10/20 00:03	1
M2-6:2 FTS	132		25 - 150	10/06/20 05:20	10/10/20 00:03	1
M2-8:2 FTS	142		25 - 150	10/06/20 05:20	10/10/20 00:03	1
d9-N-EtFOSE-M	48		10 - 120	10/06/20 05:20	10/10/20 00:03	1
d-N-MeFOSA-M	58		25 - 150	10/06/20 05:20	10/10/20 00:03	1
d7-N-MeFOSE-M	49		10 - 120	10/06/20 05:20	10/10/20 00:03	1
d-N-EtFOSA-M	57		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C2 PFHxDA	56		25 - 150	10/06/20 05:20	10/10/20 00:03	1
13C3 HFPO-DA	79		25 - 150	10/06/20 05:20	10/10/20 00:03	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>
Percent Moisture	11.4		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	88.6		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-151

Lab Sample ID: 320-65226-7

Date Collected: 09/29/20 14:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.68	B	0.22	0.030	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluoropentanoic acid (PFPeA)	1.8		0.22	0.083	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorohexanoic acid (PFHxA)	1.0		0.22	0.045	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluoroheptanoic acid (PFHpA)	1.9		0.22	0.031	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorooctanoic acid (PFOA)	3.0		0.22	0.093	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorononanoic acid (PFNA)	3.8		0.22	0.039	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorodecanoic acid (PFDA)	2.4		0.22	0.024	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluoroundecanoic acid (PFUnA)	0.42		0.22	0.039	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorododecanoic acid (PFDoA)	<0.22		0.22	0.072	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorotridecanoic acid (PFTriA)	<0.22		0.22	0.055	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.058	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.048	J	0.22	0.047	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.030	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.027	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorohexanesulfonic acid (PFHxS)	0.33		0.22	0.033	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.038	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.042	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorooctanesulfonic acid (PFOS)	0.59		0.54	0.22	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorooctanesulfonamide (FOSA)	<0.22		0.22	0.088	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.42	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.40	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
4:2 FTS	<2.2		2.2	0.40	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
6:2 FTS	1.1	J	2.2	0.16	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
8:2 FTS	<2.2		2.2	0.27	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
10:2 FTS	1.4		0.22	0.054	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
NEtFOSA	<0.22		0.22	0.026	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
NMeFOSA	<0.22		0.22	0.044	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.065	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
NMeFOSE	<0.22		0.22	0.076	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
NEtFOSE	<0.22		0.22	0.039	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
F-53B Major	<0.22		0.22	0.029	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
F-53B Minor	<0.22		0.22	0.024	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1
DONA	<0.22		0.22	0.019	ug/Kg	☼	10/06/20 05:20	10/10/20 00:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	76		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C4 PFBA	73		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C5 PFPeA	77		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C2 PFHxA	81		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C4 PFHpA	85		25 - 150	10/06/20 05:20	10/10/20 00:12	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-151

Lab Sample ID: 320-65226-7

Date Collected: 09/29/20 14:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.2

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	84		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C5 PFNA	83		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C2 PFDA	75		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C2 PFUnA	65		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C2 PFDoA	65		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C2 PFTeDA	70		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C3 PFBS	75		25 - 150	10/06/20 05:20	10/10/20 00:12	1
18O2 PFHxS	81		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C4 PFOS	76		25 - 150	10/06/20 05:20	10/10/20 00:12	1
d3-NMeFOSAA	77		25 - 150	10/06/20 05:20	10/10/20 00:12	1
d5-NEtFOSAA	73		25 - 150	10/06/20 05:20	10/10/20 00:12	1
M2-4:2 FTS	208	*5	25 - 150	10/06/20 05:20	10/10/20 00:12	1
M2-6:2 FTS	162	*5	25 - 150	10/06/20 05:20	10/10/20 00:12	1
M2-8:2 FTS	184	*5	25 - 150	10/06/20 05:20	10/10/20 00:12	1
d9-N-EtFOSE-M	54		10 - 120	10/06/20 05:20	10/10/20 00:12	1
d-N-MeFOSA-M	60		25 - 150	10/06/20 05:20	10/10/20 00:12	1
d7-N-MeFOSE-M	56		10 - 120	10/06/20 05:20	10/10/20 00:12	1
d-N-EtFOSA-M	62		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C2 PFHxDA	65		25 - 150	10/06/20 05:20	10/10/20 00:12	1
13C3 HFPO-DA	79		25 - 150	10/06/20 05:20	10/10/20 00:12	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>
Percent Moisture	11.8		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	88.2		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-150

Lab Sample ID: 320-65226-8

Date Collected: 09/29/20 14:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 86.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.6	B	0.22	0.031	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluoropentanoic acid (PFPeA)	3.6		0.22	0.085	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorohexanoic acid (PFHxA)	1.7		0.22	0.046	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluoroheptanoic acid (PFHpA)	1.8		0.22	0.032	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorooctanoic acid (PFOA)	1.1		0.22	0.094	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorononanoic acid (PFNA)	1.3		0.22	0.040	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorodecanoic acid (PFDA)	0.79		0.22	0.024	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluoroundecanoic acid (PFUnA)	0.32		0.22	0.040	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorododecanoic acid (PFDoA)	<0.22		0.22	0.074	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorotridecanoic acid (PFTriA)	<0.22		0.22	0.056	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.059	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.049	J	0.22	0.048	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.031	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.027	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorohexanesulfonic acid (PFHxS)	0.055	J	0.22	0.034	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.038	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.043	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorooctanesulfonic acid (PFOS)	2.0		0.55	0.22	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorooctanesulfonamide (FOSA)	<0.22		0.22	0.090	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.43	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.41	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
4:2 FTS	<2.2		2.2	0.41	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
6:2 FTS	0.46	J	2.2	0.16	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
8:2 FTS	<2.2		2.2	0.27	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
10:2 FTS	<0.22		0.22	0.055	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
NEtFOSA	<0.22		0.22	0.026	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
NMeFOSA	<0.22		0.22	0.045	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.066	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
NMeFOSE	<0.22		0.22	0.078	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
NEtFOSE	<0.22		0.22	0.040	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
F-53B Major	<0.22		0.22	0.030	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
F-53B Minor	<0.22		0.22	0.024	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1
DONA	<0.22		0.22	0.020	ug/Kg	☼	10/06/20 05:20	10/10/20 00:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	68		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C4 PFBA	57		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C5 PFPeA	67		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C2 PFHxA	79		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C4 PFHpA	86		25 - 150	10/06/20 05:20	10/10/20 00:22	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-150

Lab Sample ID: 320-65226-8

Date Collected: 09/29/20 14:50

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 86.6

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	78		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C5 PFNA	78		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C2 PFDA	71		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C2 PFUnA	76		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C2 PFDoA	76		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C2 PFTeDA	78		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C3 PFBS	72		25 - 150	10/06/20 05:20	10/10/20 00:22	1
18O2 PFHxS	79		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C4 PFOS	73		25 - 150	10/06/20 05:20	10/10/20 00:22	1
d3-NMeFOSAA	86		25 - 150	10/06/20 05:20	10/10/20 00:22	1
d5-NEtFOSAA	86		25 - 150	10/06/20 05:20	10/10/20 00:22	1
M2-4:2 FTS	254	*5	25 - 150	10/06/20 05:20	10/10/20 00:22	1
M2-6:2 FTS	231	*5	25 - 150	10/06/20 05:20	10/10/20 00:22	1
M2-8:2 FTS	211	*5	25 - 150	10/06/20 05:20	10/10/20 00:22	1
d9-N-EtFOSE-M	38		10 - 120	10/06/20 05:20	10/10/20 00:22	1
d-N-MeFOSA-M	43		25 - 150	10/06/20 05:20	10/10/20 00:22	1
d7-N-MeFOSE-M	38		10 - 120	10/06/20 05:20	10/10/20 00:22	1
d-N-EtFOSA-M	45		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C2 PFHxDA	87		25 - 150	10/06/20 05:20	10/10/20 00:22	1
13C3 HFPO-DA	68		25 - 150	10/06/20 05:20	10/10/20 00:22	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>
Percent Moisture	13.4		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	86.6		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-149

Lab Sample ID: 320-65226-9

Date Collected: 09/29/20 15:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 87.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.27	B	0.22	0.031	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluoropentanoic acid (PFPeA)	0.75		0.22	0.086	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorohexanoic acid (PFHxA)	0.34		0.22	0.047	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluoroheptanoic acid (PFHpA)	0.37		0.22	0.032	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorooctanoic acid (PFOA)	0.72		0.22	0.096	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorononanoic acid (PFNA)	2.4		0.22	0.040	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorodecanoic acid (PFDA)	0.097	J I	0.22	0.025	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluoroundecanoic acid (PFUnA)	0.10	J	0.22	0.040	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorododecanoic acid (PFDoA)	<0.22		0.22	0.075	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorotridecanoic acid (PFTriA)	<0.22		0.22	0.057	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.060	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.055	J	0.22	0.049	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.031	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.028	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorohexanesulfonic acid (PFHxS)	<0.22		0.22	0.035	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.039	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.044	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorooctanesulfonic acid (PFOS)	1.1		0.56	0.22	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorooctanesulfonamide (FOSA)	<0.22		0.22	0.092	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.44	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.41	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
4:2 FTS	<2.2		2.2	0.41	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
6:2 FTS	0.47	J	2.2	0.17	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
8:2 FTS	1.5	J	2.2	0.28	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
10:2 FTS	<0.22		0.22	0.056	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
NEtFOSA	<0.22		0.22	0.027	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
NMeFOSA	<0.22		0.22	0.046	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.067	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
NMeFOSE	<0.22		0.22	0.080	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
NEtFOSE	<0.22		0.22	0.040	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
F-53B Major	<0.22		0.22	0.030	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
HFPO-DA (GenX)	<0.28		0.28	0.12	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
F-53B Minor	<0.22		0.22	0.025	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1
DONA	<0.22		0.22	0.020	ug/Kg	☼	10/06/20 05:20	10/10/20 00:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	81		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C4 PFBA	68		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C5 PFPeA	74		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C2 PFHxA	85		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C4 PFHpA	84		25 - 150	10/06/20 05:20	10/10/20 00:31	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-149

Lab Sample ID: 320-65226-9

Date Collected: 09/29/20 15:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 87.5

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	81		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C5 PFNA	85		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C2 PFDA	79		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C2 PFUnA	80		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C2 PFDoA	83		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C2 PFTeDA	90		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C3 PFBS	76		25 - 150	10/06/20 05:20	10/10/20 00:31	1
18O2 PFHxS	82		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C4 PFOS	77		25 - 150	10/06/20 05:20	10/10/20 00:31	1
d3-NMeFOSAA	93		25 - 150	10/06/20 05:20	10/10/20 00:31	1
d5-NEtFOSAA	88		25 - 150	10/06/20 05:20	10/10/20 00:31	1
M2-4:2 FTS	231	*5	25 - 150	10/06/20 05:20	10/10/20 00:31	1
M2-6:2 FTS	165	*5	25 - 150	10/06/20 05:20	10/10/20 00:31	1
M2-8:2 FTS	209	*5	25 - 150	10/06/20 05:20	10/10/20 00:31	1
d9-N-EtFOSE-M	35		10 - 120	10/06/20 05:20	10/10/20 00:31	1
d-N-MeFOSA-M	44		25 - 150	10/06/20 05:20	10/10/20 00:31	1
d7-N-MeFOSE-M	36		10 - 120	10/06/20 05:20	10/10/20 00:31	1
d-N-EtFOSA-M	44		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C2 PFHxDA	85		25 - 150	10/06/20 05:20	10/10/20 00:31	1
13C3 HFPO-DA	74		25 - 150	10/06/20 05:20	10/10/20 00:31	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>
Percent Moisture	12.5		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	87.5		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-148

Lab Sample ID: 320-65226-10

Date Collected: 09/29/20 15:20

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 86.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.4	B	0.22	0.031	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluoropentanoic acid (PFPeA)	5.4		0.22	0.086	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorohexanoic acid (PFHxA)	2.4		0.22	0.047	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluoroheptanoic acid (PFHpA)	0.99		0.22	0.033	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorooctanoic acid (PFOA)	0.81		0.22	0.097	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorononanoic acid (PFNA)	0.55		0.22	0.040	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorodecanoic acid (PFDA)	1.0		0.22	0.025	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluoroundecanoic acid (PFUnA)	0.22		0.22	0.040	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorododecanoic acid (PFDoA)	<0.22		0.22	0.075	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorotridecanoic acid (PFTriA)	<0.22		0.22	0.057	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.061	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.053	J	0.22	0.049	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.031	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.028	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorohexanesulfonic acid (PFHxS)	0.069	J I	0.22	0.035	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.044	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorooctanesulfonic acid (PFOS)	0.54	J	0.56	0.22	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorooctanesulfonamide (FOSA)	<0.22		0.22	0.092	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.44	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.42	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
4:2 FTS	<2.2		2.2	0.42	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
8:2 FTS	1.9	J F1	2.2	0.28	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
10:2 FTS	0.067	J	0.22	0.056	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
NEtFOSA	<0.22		0.22	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
NMeFOSA	<0.22		0.22	0.046	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.067	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
NMeFOSE	<0.22		0.22	0.080	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
NEtFOSE	0.052	J	0.22	0.040	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
F-53B Major	<0.22		0.22	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
HFPO-DA (GenX)	<0.28		0.28	0.12	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
F-53B Minor	<0.22		0.22	0.025	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1
DONA	<0.22		0.22	0.020	ug/Kg	☼	10/06/20 05:26	10/10/20 01:46	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	84		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C4 PFBA	67		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C5 PFPeA	75		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C2 PFHxA	82		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C4 PFHpA	88		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C4 PFOA	81		25 - 150	10/06/20 05:26	10/10/20 01:46	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-148

Lab Sample ID: 320-65226-10

Date Collected: 09/29/20 15:20

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 86.6

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	87		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C2 PFDA	83		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C2 PFUnA	92		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C2 PFDoA	90		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C2 PFTeDA	95		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C3 PFBS	70		25 - 150	10/06/20 05:26	10/10/20 01:46	1
18O2 PFHxS	78		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C4 PFOS	78		25 - 150	10/06/20 05:26	10/10/20 01:46	1
d3-NMeFOSAA	104		25 - 150	10/06/20 05:26	10/10/20 01:46	1
d5-NEtFOSAA	98		25 - 150	10/06/20 05:26	10/10/20 01:46	1
M2-4:2 FTS	218	*5	25 - 150	10/06/20 05:26	10/10/20 01:46	1
M2-8:2 FTS	162	*5	25 - 150	10/06/20 05:26	10/10/20 01:46	1
d9-N-EtFOSE-M	25		10 - 120	10/06/20 05:26	10/10/20 01:46	1
d-N-MeFOSA-M	36		25 - 150	10/06/20 05:26	10/10/20 01:46	1
d7-N-MeFOSE-M	27		10 - 120	10/06/20 05:26	10/10/20 01:46	1
d-N-EtFOSA-M	31		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C2 PFHxDA	97		25 - 150	10/06/20 05:26	10/10/20 01:46	1
13C3 HFPO-DA	78		25 - 150	10/06/20 05:26	10/10/20 01:46	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	37		22	1.7	ug/Kg	☼	10/06/20 05:26	10/12/20 11:55	10
<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	106		25 - 150	10/06/20 05:26	10/12/20 11:55	10			

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>
Percent Moisture	13.4		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	86.6		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-147

Lab Sample ID: 320-65226-11

Date Collected: 09/29/20 15:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 94.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.33	B	0.20	0.028	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluoropentanoic acid (PFPeA)	0.50		0.20	0.078	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorohexanoic acid (PFHxA)	0.25		0.20	0.042	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluoroheptanoic acid (PFHpA)	0.24		0.20	0.029	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorooctanoic acid (PFOA)	0.32		0.20	0.087	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorononanoic acid (PFNA)	0.66		0.20	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorodecanoic acid (PFDA)	0.31		0.20	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.068	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.044	J	0.20	0.044	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorohexanesulfonic acid (PFHxS)	0.033	J	0.20	0.031	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorooctanesulfonic acid (PFOS)	3.6		0.50	0.20	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.083	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.061	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
NMeFOSE	<0.20		0.20	0.072	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/06/20 05:26	10/10/20 02:14	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	84		25 - 150				10/06/20 05:26	10/10/20 02:14	1
13C4 PFBA	64		25 - 150				10/06/20 05:26	10/10/20 02:14	1
13C5 PFPeA	71		25 - 150				10/06/20 05:26	10/10/20 02:14	1
13C2 PFHxA	84		25 - 150				10/06/20 05:26	10/10/20 02:14	1
13C4 PFHpA	85		25 - 150				10/06/20 05:26	10/10/20 02:14	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-147

Lab Sample ID: 320-65226-11

Date Collected: 09/29/20 15:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 94.7

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	81		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C5 PFNA	90		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C2 PFDA	85		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C2 PFUnA	85		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C2 PFDoA	95		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C2 PFTeDA	97		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C3 PFBS	73		25 - 150	10/06/20 05:26	10/10/20 02:14	1
18O2 PFHxS	79		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C4 PFOS	78		25 - 150	10/06/20 05:26	10/10/20 02:14	1
d3-NMeFOSAA	95		25 - 150	10/06/20 05:26	10/10/20 02:14	1
d5-NEtFOSAA	94		25 - 150	10/06/20 05:26	10/10/20 02:14	1
M2-4:2 FTS	247	*5	25 - 150	10/06/20 05:26	10/10/20 02:14	1
M2-6:2 FTS	164	*5	25 - 150	10/06/20 05:26	10/10/20 02:14	1
M2-8:2 FTS	189	*5	25 - 150	10/06/20 05:26	10/10/20 02:14	1
d9-N-EtFOSE-M	49		10 - 120	10/06/20 05:26	10/10/20 02:14	1
d-N-MeFOSA-M	53		25 - 150	10/06/20 05:26	10/10/20 02:14	1
d7-N-MeFOSE-M	42		10 - 120	10/06/20 05:26	10/10/20 02:14	1
d-N-EtFOSA-M	55		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C2 PFHxDA	92		25 - 150	10/06/20 05:26	10/10/20 02:14	1
13C3 HFPO-DA	77		25 - 150	10/06/20 05:26	10/10/20 02:14	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>
Percent Moisture	5.3		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	94.7		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-146

Lab Sample ID: 320-65226-12

Date Collected: 09/29/20 15:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.64	B	0.21	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluoropentanoic acid (PFPeA)	1.2		0.21	0.082	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorohexanoic acid (PFHxA)	0.36		0.21	0.045	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluoroheptanoic acid (PFHpA)	0.57		0.21	0.031	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorooctanoic acid (PFOA)	0.32		0.21	0.092	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorononanoic acid (PFNA)	0.38		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorodecanoic acid (PFDA)	0.12	J	0.21	0.023	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.072	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.054	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.058	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.051	J	0.21	0.047	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.21		0.21	0.033	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.042	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorooctanesulfonic acid (PFOS)	1.1		0.53	0.21	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.088	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.42	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.40	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
4:2 FTS	<2.1		2.1	0.40	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
8:2 FTS	<2.1		2.1	0.27	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
10:2 FTS	<0.21		0.21	0.053	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
NEtFOSA	<0.21		0.21	0.026	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
NMeFOSA	<0.21		0.21	0.044	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.064	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
NMeFOSE	<0.21		0.21	0.076	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
NEtFOSE	<0.21		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
F-53B Major	<0.21		0.21	0.029	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/06/20 05:26	10/10/20 02:23	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	78		25 - 150				10/06/20 05:26	10/10/20 02:23	1
13C4 PFBA	61		25 - 150				10/06/20 05:26	10/10/20 02:23	1
13C5 PFPeA	63		25 - 150				10/06/20 05:26	10/10/20 02:23	1
13C2 PFHxA	76		25 - 150				10/06/20 05:26	10/10/20 02:23	1
13C4 PFHpA	77		25 - 150				10/06/20 05:26	10/10/20 02:23	1
13C4 PFOA	74		25 - 150				10/06/20 05:26	10/10/20 02:23	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-146

Lab Sample ID: 320-65226-12

Date Collected: 09/29/20 15:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.4

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	80		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C2 PFDA	79		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C2 PFUnA	79		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C2 PFDoA	82		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C2 PFTeDA	89		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C3 PFBS	66		25 - 150	10/06/20 05:26	10/10/20 02:23	1
18O2 PFHxS	74		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C4 PFOS	74		25 - 150	10/06/20 05:26	10/10/20 02:23	1
d3-NMeFOSAA	93		25 - 150	10/06/20 05:26	10/10/20 02:23	1
d5-NEtFOSAA	86		25 - 150	10/06/20 05:26	10/10/20 02:23	1
M2-4:2 FTS	195	*5	25 - 150	10/06/20 05:26	10/10/20 02:23	1
M2-6:2 FTS	151	*5	25 - 150	10/06/20 05:26	10/10/20 02:23	1
M2-8:2 FTS	172	*5	25 - 150	10/06/20 05:26	10/10/20 02:23	1
d9-N-EtFOSE-M	30		10 - 120	10/06/20 05:26	10/10/20 02:23	1
d-N-MeFOSA-M	43		25 - 150	10/06/20 05:26	10/10/20 02:23	1
d7-N-MeFOSE-M	32		10 - 120	10/06/20 05:26	10/10/20 02:23	1
d-N-EtFOSA-M	40		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C2 PFHxDA	84		25 - 150	10/06/20 05:26	10/10/20 02:23	1
13C3 HFPO-DA	68		25 - 150	10/06/20 05:26	10/10/20 02:23	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>
Percent Moisture	11.6		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	88.4		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-145

Lab Sample ID: 320-65226-13

Date Collected: 09/29/20 16:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 53.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.55	B	0.36	0.050	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluoropentanoic acid (PFPeA)	2.2		0.36	0.14	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorohexanoic acid (PFHxA)	2.3		0.36	0.075	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluoroheptanoic acid (PFHpA)	3.0		0.36	0.052	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorooctanoic acid (PFOA)	13		0.36	0.15	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorononanoic acid (PFNA)	6.5		0.36	0.064	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorodecanoic acid (PFDA)	6.4		0.36	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluoroundecanoic acid (PFUnA)	4.0		0.36	0.064	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorododecanoic acid (PFDoA)	1.7		0.36	0.12	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorotridecanoic acid (PFTriA)	1.1		0.36	0.091	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorotetradecanoic acid (PFTeA)	0.70		0.36	0.097	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.18	J	0.36	0.079	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.36		0.36	0.050	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		0.36	0.045	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorohexanesulfonic acid (PFHxS)	2.1		0.36	0.055	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.11	J	0.36	0.063	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorodecanesulfonic acid (PFDS)	0.10	J	0.36	0.070	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorooctanesulfonic acid (PFOS)	15		0.89	0.36	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorooctanesulfonamide (FOSA)	0.33	J	0.36	0.15	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluoropentanesulfonic acid (PFPeS)	<0.36		0.36	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorononanesulfonic acid (PFNS)	0.036	J	0.36	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<3.6		3.6	0.70	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<3.6		3.6	0.66	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
4:2 FTS	<3.6		3.6	0.66	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
6:2 FTS	0.98	J	3.6	0.27	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
8:2 FTS	4.8		3.6	0.45	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
10:2 FTS	1.2		0.36	0.089	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
NEtFOSA	<0.36		0.36	0.043	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
NMeFOSA	<0.36		0.36	0.073	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
Perfluorododecanesulfonic acid (PFDoS)	<0.36		0.36	0.11	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
NMeFOSE	<0.36		0.36	0.13	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
NEtFOSE	0.47		0.36	0.064	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
F-53B Major	<0.36		0.36	0.048	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
HFPO-DA (GenX)	<0.45		0.45	0.20	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
F-53B Minor	<0.36		0.36	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1
DONA	<0.36		0.36	0.032	ug/Kg	☼	10/06/20 05:26	10/10/20 02:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C8 FOSA	62		25 - 150	10/06/20 05:26	10/10/20 02:33	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-145

Lab Sample ID: 320-65226-13

Date Collected: 09/29/20 16:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 53.9

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 PFBA	50		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C5 PFPeA	57		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C2 PFHxA	75		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C4 PFHpA	80		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C4 PFOA	74		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C5 PFNA	82		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C2 PFDA	77		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C2 PFUnA	81		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C2 PFDoA	81		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C2 PFTeDA	82		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C3 PFBS	75		25 - 150	10/06/20 05:26	10/10/20 02:33	1
18O2 PFHxS	85		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C4 PFOS	84		25 - 150	10/06/20 05:26	10/10/20 02:33	1
d3-NMeFOSAA	72		25 - 150	10/06/20 05:26	10/10/20 02:33	1
d5-NEtFOSAA	76		25 - 150	10/06/20 05:26	10/10/20 02:33	1
M2-4:2 FTS	253	*5	25 - 150	10/06/20 05:26	10/10/20 02:33	1
M2-6:2 FTS	227	*5	25 - 150	10/06/20 05:26	10/10/20 02:33	1
M2-8:2 FTS	221	*5	25 - 150	10/06/20 05:26	10/10/20 02:33	1
d9-N-EtFOSE-M	39		10 - 120	10/06/20 05:26	10/10/20 02:33	1
d-N-MeFOSA-M	48		25 - 150	10/06/20 05:26	10/10/20 02:33	1
d7-N-MeFOSE-M	35		10 - 120	10/06/20 05:26	10/10/20 02:33	1
d-N-EtFOSA-M	48		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C2 PFHxDA	87		25 - 150	10/06/20 05:26	10/10/20 02:33	1
13C3 HFPO-DA	68		25 - 150	10/06/20 05:26	10/10/20 02:33	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>
Percent Moisture	46.1		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	53.9		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-144

Lab Sample ID: 320-65226-14

Date Collected: 09/29/20 16:15

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 89.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.15	J B	0.21	0.029	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluoropentanoic acid (PFPeA)	0.14	J	0.21	0.081	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorohexanoic acid (PFHxA)	0.12	J	0.21	0.044	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluoroheptanoic acid (PFHpA)	0.12	J	0.21	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorooctanoic acid (PFOA)	0.33		0.21	0.090	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorononanoic acid (PFNA)	1.6		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorodecanoic acid (PFDA)	0.35		0.21	0.023	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluoroundecanoic acid (PFUnA)	0.039	J	0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.070	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.053	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.057	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.048	J	0.21	0.046	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.029	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorohexanesulfonic acid (PFHxS)	0.049	J	0.21	0.032	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.041	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorooctanesulfonic acid (PFOS)	5.3		0.52	0.21	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.086	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.41	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.39	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
4:2 FTS	<2.1		2.1	0.39	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
8:2 FTS	<2.1		2.1	0.26	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
10:2 FTS	<0.21		0.21	0.052	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
NMeFOSA	<0.21		0.21	0.043	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.063	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
NMeFOSE	<0.21		0.21	0.074	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
NEtFOSE	<0.21		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
F-53B Major	<0.21		0.21	0.028	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
HFPO-DA (GenX)	<0.26		0.26	0.12	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/06/20 05:26	10/10/20 03:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	79		25 - 150				10/06/20 05:26	10/10/20 03:01	1
13C4 PFBA	70		25 - 150				10/06/20 05:26	10/10/20 03:01	1
13C5 PFPeA	74		25 - 150				10/06/20 05:26	10/10/20 03:01	1
13C2 PFHxA	80		25 - 150				10/06/20 05:26	10/10/20 03:01	1
13C4 PFHpA	84		25 - 150				10/06/20 05:26	10/10/20 03:01	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-144

Lab Sample ID: 320-65226-14

Date Collected: 09/29/20 16:15

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 89.9

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	83		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C5 PFNA	87		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C2 PFDA	86		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C2 PFUnA	87		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C2 PFDoA	91		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C2 PFTeDA	98		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C3 PFBS	75		25 - 150	10/06/20 05:26	10/10/20 03:01	1
18O2 PFHxS	78		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C4 PFOS	74		25 - 150	10/06/20 05:26	10/10/20 03:01	1
d3-NMeFOSAA	93		25 - 150	10/06/20 05:26	10/10/20 03:01	1
d5-NEtFOSAA	88		25 - 150	10/06/20 05:26	10/10/20 03:01	1
M2-4:2 FTS	169	*5	25 - 150	10/06/20 05:26	10/10/20 03:01	1
M2-6:2 FTS	140		25 - 150	10/06/20 05:26	10/10/20 03:01	1
M2-8:2 FTS	170	*5	25 - 150	10/06/20 05:26	10/10/20 03:01	1
d9-N-EtFOSE-M	29		10 - 120	10/06/20 05:26	10/10/20 03:01	1
d-N-MeFOSA-M	47		25 - 150	10/06/20 05:26	10/10/20 03:01	1
d7-N-MeFOSE-M	30		10 - 120	10/06/20 05:26	10/10/20 03:01	1
d-N-EtFOSA-M	42		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C2 PFHxDA	95		25 - 150	10/06/20 05:26	10/10/20 03:01	1
13C3 HFPO-DA	75		25 - 150	10/06/20 05:26	10/10/20 03:01	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>
Percent Moisture	10.1		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	89.9		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-143

Lab Sample ID: 320-65226-15

Date Collected: 09/29/20 16:25

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.23	B	0.20	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluoropentanoic acid (PFPeA)	0.29		0.20	0.075	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorohexanoic acid (PFHxA)	0.15	J	0.20	0.041	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluoroheptanoic acid (PFHpA)	0.22		0.20	0.028	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorooctanoic acid (PFOA)	0.37		0.20	0.084	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorononanoic acid (PFNA)	0.59		0.20	0.035	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorodecanoic acid (PFDA)	0.24		0.20	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluoroundecanoic acid (PFUnA)	0.055	J	0.20	0.035	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.066	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.050	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.053	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.046	J	0.20	0.043	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorohexanesulfonic acid (PFHxS)	0.030	J	0.20	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.034	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorooctanesulfonic acid (PFOS)	2.5		0.49	0.20	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.080	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.38	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.36	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
4:2 FTS	<2.0		2.0	0.36	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
10:2 FTS	<0.20		0.20	0.049	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
NMeFOSA	<0.20		0.20	0.040	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.059	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
NMeFOSE	<0.20		0.20	0.070	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
NEtFOSE	<0.20		0.20	0.035	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
F-53B Major	<0.20		0.20	0.026	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/06/20 05:26	10/10/20 03:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	81		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C4 PFBA	70		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C5 PFPeA	75		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C2 PFHxA	78		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C4 PFHpA	82		25 - 150	10/06/20 05:26	10/10/20 03:10	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-143

Lab Sample ID: 320-65226-15

Date Collected: 09/29/20 16:25

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.1

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	79		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C5 PFNA	87		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C2 PFDA	82		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C2 PFUnA	85		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C2 PFDoA	85		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C2 PFTeDA	97		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C3 PFBS	73		25 - 150	10/06/20 05:26	10/10/20 03:10	1
18O2 PFHxS	80		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C4 PFOS	78		25 - 150	10/06/20 05:26	10/10/20 03:10	1
d3-NMeFOSAA	89		25 - 150	10/06/20 05:26	10/10/20 03:10	1
d5-NEtFOSAA	86		25 - 150	10/06/20 05:26	10/10/20 03:10	1
M2-4:2 FTS	177	*5	25 - 150	10/06/20 05:26	10/10/20 03:10	1
M2-6:2 FTS	143		25 - 150	10/06/20 05:26	10/10/20 03:10	1
M2-8:2 FTS	168	*5	25 - 150	10/06/20 05:26	10/10/20 03:10	1
d9-N-EtFOSE-M	26		10 - 120	10/06/20 05:26	10/10/20 03:10	1
d-N-MeFOSA-M	41		25 - 150	10/06/20 05:26	10/10/20 03:10	1
d7-N-MeFOSE-M	29		10 - 120	10/06/20 05:26	10/10/20 03:10	1
d-N-EtFOSA-M	39		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C2 PFHxDA	88		25 - 150	10/06/20 05:26	10/10/20 03:10	1
13C3 HFPO-DA	75		25 - 150	10/06/20 05:26	10/10/20 03:10	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>
Percent Moisture	4.9		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	95.1		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-142

Lab Sample ID: 320-65226-16

Date Collected: 09/29/20 16:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.14	J B	0.21	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluoropentanoic acid (PFPeA)	0.14	J	0.21	0.083	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorohexanoic acid (PFHxA)	0.11	J	0.21	0.045	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluoroheptanoic acid (PFHpA)	0.19	J	0.21	0.031	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorooctanoic acid (PFOA)	0.37		0.21	0.092	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorononanoic acid (PFNA)	0.46		0.21	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorodecanoic acid (PFDA)	<0.21		0.21	0.024	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.072	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.055	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.058	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.047	J	0.21	0.047	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorohexanesulfonic acid (PFHxS)	0.039	J	0.21	0.033	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.042	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorooctanesulfonic acid (PFOS)	1.6		0.54	0.21	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.088	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.42	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.40	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
4:2 FTS	<2.1		2.1	0.40	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
8:2 FTS	<2.1		2.1	0.27	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
10:2 FTS	<0.21		0.21	0.054	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
NEtFOSA	<0.21		0.21	0.026	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
NMeFOSA	<0.21		0.21	0.044	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.064	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
NMeFOSE	<0.21		0.21	0.076	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
NEtFOSE	<0.21		0.21	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
F-53B Major	<0.21		0.21	0.029	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
F-53B Minor	<0.21		0.21	0.024	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/06/20 05:26	10/10/20 03:20	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	84		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C4 PFBA	74		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C5 PFPeA	77		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C2 PFHxA	82		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C4 PFHpA	85		25 - 150	10/06/20 05:26	10/10/20 03:20	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-142

Lab Sample ID: 320-65226-16

Date Collected: 09/29/20 16:35

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.2

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	84		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C5 PFNA	92		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C2 PFDA	84		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C2 PFUnA	86		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C2 PFDoA	89		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C2 PFTeDA	105		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C3 PFBS	78		25 - 150	10/06/20 05:26	10/10/20 03:20	1
18O2 PFHxS	83		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C4 PFOS	85		25 - 150	10/06/20 05:26	10/10/20 03:20	1
d3-NMeFOSAA	83		25 - 150	10/06/20 05:26	10/10/20 03:20	1
d5-NEtFOSAA	84		25 - 150	10/06/20 05:26	10/10/20 03:20	1
M2-4:2 FTS	122		25 - 150	10/06/20 05:26	10/10/20 03:20	1
M2-6:2 FTS	130		25 - 150	10/06/20 05:26	10/10/20 03:20	1
M2-8:2 FTS	149		25 - 150	10/06/20 05:26	10/10/20 03:20	1
d9-N-EtFOSE-M	15		10 - 120	10/06/20 05:26	10/10/20 03:20	1
d-N-MeFOSA-M	52		25 - 150	10/06/20 05:26	10/10/20 03:20	1
d7-N-MeFOSE-M	18		10 - 120	10/06/20 05:26	10/10/20 03:20	1
d-N-EtFOSA-M	49		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C2 PFHxDA	99		25 - 150	10/06/20 05:26	10/10/20 03:20	1
13C3 HFPO-DA	79		25 - 150	10/06/20 05:26	10/10/20 03:20	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>
Percent Moisture	7.8		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	92.2		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: DUP-02
Date Collected: 09/29/20 00:00
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-18
Matrix: Solid
Percent Solids: 92.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.4	B	0.21	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluoropentanoic acid (PFPeA)	4.8		0.21	0.082	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorohexanoic acid (PFHxA)	2.4		0.21	0.045	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluoroheptanoic acid (PFHpA)	4.5		0.21	0.031	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorooctanoic acid (PFOA)	2.5		0.21	0.091	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorononanoic acid (PFNA)	0.57		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorodecanoic acid (PFDA)	0.055	J	0.21	0.023	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.071	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.054	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.057	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		0.21	0.047	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.030	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorohexanesulfonic acid (PFHxS)	0.056	J	0.21	0.033	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.041	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorooctanesulfonic acid (PFOS)	2.1		0.53	0.21	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.087	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.41	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.39	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
4:2 FTS	<2.1		2.1	0.39	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
6:2 FTS	0.37	J	2.1	0.16	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
8:2 FTS	<2.1		2.1	0.27	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
10:2 FTS	<0.21		0.21	0.053	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
NEtFOSA	<0.21		0.21	0.026	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
NMeFOSA	<0.21		0.21	0.044	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.064	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
NMeFOSE	<0.21		0.21	0.075	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
NEtFOSE	<0.21		0.21	0.038	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
F-53B Major	<0.21		0.21	0.029	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/06/20 05:26	10/10/20 03:29	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	70		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C4 PFBA	58		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C5 PFPeA	63		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C2 PFHxA	69		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C4 PFHpA	73		25 - 150	10/06/20 05:26	10/10/20 03:29	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: DUP-02

Lab Sample ID: 320-65226-18

Date Collected: 09/29/20 00:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 92.7

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	69		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C5 PFNA	76		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C2 PFDA	66		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C2 PFUnA	63		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C2 PFDoA	61		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C2 PFTeDA	67		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C3 PFBS	65		25 - 150	10/06/20 05:26	10/10/20 03:29	1
18O2 PFHxS	67		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C4 PFOS	66		25 - 150	10/06/20 05:26	10/10/20 03:29	1
d3-NMeFOSAA	55		25 - 150	10/06/20 05:26	10/10/20 03:29	1
d5-NEtFOSAA	52		25 - 150	10/06/20 05:26	10/10/20 03:29	1
M2-4:2 FTS	146		25 - 150	10/06/20 05:26	10/10/20 03:29	1
M2-6:2 FTS	136		25 - 150	10/06/20 05:26	10/10/20 03:29	1
M2-8:2 FTS	151	*5	25 - 150	10/06/20 05:26	10/10/20 03:29	1
d9-N-EtFOSE-M	30		10 - 120	10/06/20 05:26	10/10/20 03:29	1
d-N-MeFOSA-M	40		25 - 150	10/06/20 05:26	10/10/20 03:29	1
d7-N-MeFOSE-M	28		10 - 120	10/06/20 05:26	10/10/20 03:29	1
d-N-EtFOSA-M	41		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C2 PFHxDA	62		25 - 150	10/06/20 05:26	10/10/20 03:29	1
13C3 HFPO-DA	63		25 - 150	10/06/20 05:26	10/10/20 03:29	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>
Percent Moisture	7.3		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	92.7		0.1	0.1	%			10/02/20 12:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: DUP-03

Lab Sample ID: 320-65226-19

Date Collected: 09/29/20 00:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.22	B	0.20	0.028	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluoropentanoic acid (PFPeA)	0.31		0.20	0.077	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorohexanoic acid (PFHxA)	0.18	J	0.20	0.042	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluoroheptanoic acid (PFHpA)	0.23		0.20	0.029	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorooctanoic acid (PFOA)	0.36		0.20	0.086	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorononanoic acid (PFNA)	0.67		0.20	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorodecanoic acid (PFDA)	0.13	J	0.20	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluoroundecanoic acid (PFUnA)	0.039	J	0.20	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.044	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorooctanesulfonic acid (PFOS)	2.4		0.50	0.20	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/06/20 05:26	10/10/20 03:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	94		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C4 PFBA	71		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C5 PFPeA	76		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C2 PFHxA	88		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C4 PFHpA	89		25 - 150	10/06/20 05:26	10/10/20 03:38	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: DUP-03

Lab Sample ID: 320-65226-19

Date Collected: 09/29/20 00:00

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 95.3

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	88		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C5 PFNA	96		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C2 PFDA	86		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C2 PFUnA	92		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C2 PFDoA	93		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C2 PFTeDA	100		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C3 PFBS	78		25 - 150	10/06/20 05:26	10/10/20 03:38	1
18O2 PFHxS	86		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C4 PFOS	86		25 - 150	10/06/20 05:26	10/10/20 03:38	1
d3-NMeFOSAA	100		25 - 150	10/06/20 05:26	10/10/20 03:38	1
d5-NEtFOSAA	95		25 - 150	10/06/20 05:26	10/10/20 03:38	1
M2-4:2 FTS	233	*5	25 - 150	10/06/20 05:26	10/10/20 03:38	1
M2-6:2 FTS	192	*5	25 - 150	10/06/20 05:26	10/10/20 03:38	1
M2-8:2 FTS	196	*5	25 - 150	10/06/20 05:26	10/10/20 03:38	1
d9-N-EtFOSE-M	37		10 - 120	10/06/20 05:26	10/10/20 03:38	1
d-N-MeFOSA-M	61		25 - 150	10/06/20 05:26	10/10/20 03:38	1
d7-N-MeFOSE-M	35		10 - 120	10/06/20 05:26	10/10/20 03:38	1
d-N-EtFOSA-M	56		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C2 PFHxDA	97		25 - 150	10/06/20 05:26	10/10/20 03:38	1
13C3 HFPO-DA	76		25 - 150	10/06/20 05:26	10/10/20 03:38	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>
Percent Moisture	4.7		0.1	0.1	%			10/02/20 12:39	1
Percent Solids	95.3		0.1	0.1	%			10/02/20 12:39	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFOSA (25-150)	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)
320-65226-1	SS-172	81	65	73	90	89	85	98	88
320-65226-1 - DL	SS-172								
320-65226-1 MS	SS-172	65	61	69	82	85	80	82	68
320-65226-1 MS - DL	SS-172								
320-65226-1 MSD	SS-172	72	65	71	85	92	85	92	77
320-65226-1 MSD - DL	SS-172								
320-65226-2	SS-156	83	66	73	86	90	87	93	90
320-65226-3	SS-155	75	68	72	77	81	80	88	81
320-65226-4	SS-154	68	63	70	78	86	76	78	66
320-65226-5	SS-153	80	64	70	81	84	83	86	80
320-65226-6	SS-152	70	74	75	83	84	76	78	69
320-65226-7	SS-151	76	73	77	81	85	84	83	75
320-65226-8	SS-150	68	57	67	79	86	78	78	71
320-65226-9	SS-149	81	68	74	85	84	81	85	79
320-65226-10	SS-148	84	67	75	82	88	81	87	83
320-65226-10 - DL	SS-148								
320-65226-10 MS	SS-148	87	63	72	82	85	82	88	87
320-65226-10 MS - DL	SS-148								
320-65226-10 MSD	SS-148	84	63	71	86	84	82	87	82
320-65226-10 MSD - DL	SS-148								
320-65226-11	SS-147	84	64	71	84	85	81	90	85
320-65226-12	SS-146	78	61	63	76	77	74	80	79
320-65226-13	SS-145	62	50	57	75	80	74	82	77
320-65226-14	SS-144	79	70	74	80	84	83	87	86
320-65226-15	SS-143	81	70	75	78	82	79	87	82
320-65226-16	SS-142	84	74	77	82	85	84	92	84
320-65226-18	DUP-02	70	58	63	69	73	69	76	66
320-65226-19	DUP-03	94	71	76	88	89	88	96	86
LCS 320-418992/2-A	Lab Control Sample	58	70	72	73	77	73	77	75
LCS 320-418993/2-A	Lab Control Sample	78	78	80	82	88	83	92	82
MB 320-418992/1-A	Method Blank	72	79	84	84	87	83	90	85
MB 320-418993/1-A	Method Blank	78	74	75	77	84	84	86	80

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
320-65226-1	SS-172	94	93	101	80	91	83	86	99
320-65226-1 - DL	SS-172								
320-65226-1 MS	SS-172	65	66	63	75	83	74	58	59
320-65226-1 MS - DL	SS-172								
320-65226-1 MSD	SS-172	72	62	59	77	88	82	65	64
320-65226-1 MSD - DL	SS-172								
320-65226-2	SS-156	88	80	78	76	84	84	92	95
320-65226-3	SS-155	78	82	90	66	73	71	81	76
320-65226-4	SS-154	65	67	68	71	76	71	62	67
320-65226-5	SS-153	86	92	95	72	80	78	79	76
320-65226-6	SS-152	63	60	60	77	81	70	68	64
320-65226-7	SS-151	65	65	70	75	81	76	77	73
320-65226-8	SS-150	76	76	78	72	79	73	86	86
320-65226-9	SS-149	80	83	90	76	82	77	93	88

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65226-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFUnA (25-150)	PFDaA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
320-65226-10	SS-148	92	90	95	70	78	78	104	98
320-65226-10 - DL	SS-148								
320-65226-10 MS	SS-148	89	99	104	73	78	79	103	101
320-65226-10 MS - DL	SS-148								
320-65226-10 MSD	SS-148	85	93	104	72	76	78	100	101
320-65226-10 MSD - DL	SS-148								
320-65226-11	SS-147	85	95	97	73	79	78	95	94
320-65226-12	SS-146	79	82	89	66	74	74	93	86
320-65226-13	SS-145	81	81	82	75	85	84	72	76
320-65226-14	SS-144	87	91	98	75	78	74	93	88
320-65226-15	SS-143	85	85	97	73	80	78	89	86
320-65226-16	SS-142	86	89	105	78	83	85	83	84
320-65226-18	DUP-02	63	61	67	65	67	66	55	52
320-65226-19	DUP-03	92	93	100	78	86	86	100	95
LCS 320-418992/2-A	Lab Control Sample	70	72	80	73	74	73	77	74
LCS 320-418993/2-A	Lab Control Sample	80	90	93	80	86	84	87	83
MB 320-418992/1-A	Method Blank	87	91	98	82	89	85	88	82
MB 320-418993/1-A	Method Blank	79	81	89	77	82	81	83	75

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	NEFM (10-120)	dMeFOSA (25-150)	NMFM (10-120)	dEtFOSA (25-150)	PFHxDA (25-150)
320-65226-1	SS-172	273 *5	207 *5	219 *5	61	62	62	63	105
320-65226-1 - DL	SS-172			126					
320-65226-1 MS	SS-172	271 *5	184 *5		20	27	22	22 *5	56
320-65226-1 MS - DL	SS-172			105					
320-65226-1 MSD	SS-172	272 *5	220 *5		21	40	26	33	58
320-65226-1 MSD - DL	SS-172			116					
320-65226-2	SS-156	249 *5	204 *5	216 *5	55	72	57	72	74
320-65226-3	SS-155	164 *5	117	136	41	66	39	70	85
320-65226-4	SS-154	231 *5	184 *5	169 *5	29	35	31	34	65
320-65226-5	SS-153	206 *5	187 *5	209 *5	44	60	45	63	90
320-65226-6	SS-152	183 *5	132	142	48	58	49	57	56
320-65226-7	SS-151	208 *5	162 *5	184 *5	54	60	56	62	65
320-65226-8	SS-150	254 *5	231 *5	211 *5	38	43	38	45	87
320-65226-9	SS-149	231 *5	165 *5	209 *5	35	44	36	44	85
320-65226-10	SS-148	218 *5		162 *5	25	36	27	31	97
320-65226-10 - DL	SS-148		106						
320-65226-10 MS	SS-148	224 *5		198 *5	36	51	38	49	98
320-65226-10 MS - DL	SS-148		113						
320-65226-10 MSD	SS-148	239 *5		201 *5	33	45	37	42	86
320-65226-10 MSD - DL	SS-148		123						
320-65226-11	SS-147	247 *5	164 *5	189 *5	49	53	42	55	92
320-65226-12	SS-146	195 *5	151 *5	172 *5	30	43	32	40	84
320-65226-13	SS-145	253 *5	227 *5	221 *5	39	48	35	48	87
320-65226-14	SS-144	169 *5	140	170 *5	29	47	30	42	95
320-65226-15	SS-143	177 *5	143	168 *5	26	41	29	39	88
320-65226-16	SS-142	122	130	149	15	52	18	49	99
320-65226-18	DUP-02	146	136	151 *5	30	40	28	41	62
320-65226-19	DUP-03	233 *5	192 *5	196 *5	37	61	35	56	97
LCS 320-418992/2-A	Lab Control Sample	91	99	85	12	54	12	52	78

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65226-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	NEFM (10-120)	dMeFOSA (25-150)	NMFM (10-120)	dEtFOSA (25-150)	PFHxDA (25-150)
LCS 320-418993/2-A	Lab Control Sample	113	106	104	18	67	22	60	99
MB 320-418992/1-A	Method Blank	102	106	105	8 *5	67	8 *5	65	96
MB 320-418993/1-A	Method Blank	105	105	98	7 *5	63	8 *5	58	88

Lab Sample ID	Client Sample ID	HFPODA
		(25-150)
320-65226-1	SS-172	81
320-65226-1 - DL	SS-172	
320-65226-1 MS	SS-172	70
320-65226-1 MS - DL	SS-172	
320-65226-1 MSD	SS-172	78
320-65226-1 MSD - DL	SS-172	
320-65226-2	SS-156	76
320-65226-3	SS-155	74
320-65226-4	SS-154	70
320-65226-5	SS-153	70
320-65226-6	SS-152	79
320-65226-7	SS-151	79
320-65226-8	SS-150	68
320-65226-9	SS-149	74
320-65226-10	SS-148	78
320-65226-10 - DL	SS-148	
320-65226-10 MS	SS-148	74
320-65226-10 MS - DL	SS-148	
320-65226-10 MSD	SS-148	73
320-65226-10 MSD - DL	SS-148	
320-65226-11	SS-147	77
320-65226-12	SS-146	68
320-65226-13	SS-145	68
320-65226-14	SS-144	75
320-65226-15	SS-143	75
320-65226-16	SS-142	79
320-65226-18	DUP-02	63
320-65226-19	DUP-03	76
LCS 320-418992/2-A	Lab Control Sample	73
LCS 320-418993/2-A	Lab Control Sample	82
MB 320-418992/1-A	Method Blank	79
MB 320-418993/1-A	Method Blank	81

Surrogate Legend

- PFOSA = 13C8 FOSA
- 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

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65226-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
NEFM = d9-N-EtFOSE-M
dMeFOSA = d-N-MeFOSA-M
NMFm = d7-N-MeFOSE-M
dEtFOSA = d-N-EtFOSA-M
PFHxDA = 13C2 PFHxDA
HFPODA = 13C3 HFPO-DA

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

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-418992/1-A
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418992

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	0.0812	J	0.20	0.028	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20	0.077	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorohexanoic acid (PFHxA)	<0.20		0.20	0.042	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20	0.029	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20	0.086	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorononanoic acid (PFNA)	<0.20		0.20	0.036	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorodecanoic acid (PFDA)	<0.20		0.20	0.022	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.044	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorooctanesulfonic acid (PFOS)	<0.50		0.50	0.20	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
F-53B Major	<0.20		0.20	0.027	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
DONA	<0.20		0.20	0.018	ug/Kg		10/06/20 05:20	10/09/20 22:20	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	72		25 - 150				10/06/20 05:20	10/09/20 22:20	1
13C4 PFBA	79		25 - 150				10/06/20 05:20	10/09/20 22:20	1
13C5 PFPeA	84		25 - 150				10/06/20 05:20	10/09/20 22:20	1
13C2 PFHxA	84		25 - 150				10/06/20 05:20	10/09/20 22:20	1
13C4 PFHpA	87		25 - 150				10/06/20 05:20	10/09/20 22:20	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: MB 320-418992/1-A
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418992

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOA	83		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C5 PFNA	90		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C2 PFDA	85		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C2 PFUnA	87		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C2 PFDoA	91		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C2 PFTeDA	98		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C3 PFBS	82		25 - 150	10/06/20 05:20	10/09/20 22:20	1
18O2 PFHxS	89		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C4 PFOS	85		25 - 150	10/06/20 05:20	10/09/20 22:20	1
d3-NMeFOSAA	88		25 - 150	10/06/20 05:20	10/09/20 22:20	1
d5-NEtFOSAA	82		25 - 150	10/06/20 05:20	10/09/20 22:20	1
M2-4:2 FTS	102		25 - 150	10/06/20 05:20	10/09/20 22:20	1
M2-6:2 FTS	106		25 - 150	10/06/20 05:20	10/09/20 22:20	1
M2-8:2 FTS	105		25 - 150	10/06/20 05:20	10/09/20 22:20	1
d9-N-EtFOSE-M	8	*5	10 - 120	10/06/20 05:20	10/09/20 22:20	1
d-N-MeFOSA-M	67		25 - 150	10/06/20 05:20	10/09/20 22:20	1
d7-N-MeFOSE-M	8	*5	10 - 120	10/06/20 05:20	10/09/20 22:20	1
d-N-EtFOSA-M	65		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C2 PFHxDA	96		25 - 150	10/06/20 05:20	10/09/20 22:20	1
13C3 HFPO-DA	79		25 - 150	10/06/20 05:20	10/09/20 22:20	1

Lab Sample ID: LCS 320-418992/2-A
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	2.00	2.25		ug/Kg		113	69 - 129
Perfluorohexanoic acid (PFHxA)	2.00	2.50		ug/Kg		125	71 - 131
Perfluoroheptanoic acid (PFHpA)	2.00	2.30		ug/Kg		115	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.37		ug/Kg		118	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.13		ug/Kg		107	73 - 133
Perfluorodecanoic acid (PFDA)	2.00	2.27		ug/Kg		113	72 - 132
Perfluoroundecanoic acid (PFUnA)	2.00	2.36		ug/Kg		118	66 - 126
Perfluorododecanoic acid (PFDoA)	2.00	2.29		ug/Kg		114	71 - 131
Perfluorotridecanoic acid (PFTriA)	2.00	2.24		ug/Kg		112	71 - 131
Perfluorotetradecanoic acid (PFTeA)	2.00	2.07		ug/Kg		103	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	1.97		ug/Kg		98	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.12		ug/Kg		106	53 - 130
Perfluorobutanesulfonic acid (PFBS)	1.77	2.15		ug/Kg		121	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.95		ug/Kg		107	62 - 122
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.25		ug/Kg		118	76 - 136

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: LCS 320-418992/2-A
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanesulfonic acid (PFDS)	1.93	2.18		ug/Kg		113	71 - 131
Perfluorooctanesulfonic acid (PFOS)	1.86	2.11		ug/Kg		114	68 - 141
Perfluorooctanesulfonamide (FOSA)	2.00	2.35		ug/Kg		117	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.06		ug/Kg		110	66 - 126
Perfluorononanesulfonic acid (PFNS)	1.92	2.23		ug/Kg		116	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.25		ug/Kg		112	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.07		ug/Kg		104	72 - 132
4:2 FTS	1.87	2.10		ug/Kg		112	68 - 143
6:2 FTS	1.90	1.85	J	ug/Kg		98	73 - 139
8:2 FTS	1.92	2.19		ug/Kg		114	75 - 135
10:2 FTS	1.93	1.92		ug/Kg		100	69 - 145
NEtFOSA	2.00	2.31		ug/Kg		115	47 - 161
NMeFOSA	2.00	2.19		ug/Kg		110	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.93		ug/Kg		100	70 - 130
NMeFOSE	2.00	2.05		ug/Kg		103	43 - 153
NEtFOSE	2.00	1.77		ug/Kg		88	44 - 155
F-53B Major	1.86	2.15		ug/Kg		116	74 - 134
HFPO-DA (GenX)	2.00	2.22		ug/Kg		111	53 - 158
F-53B Minor	1.88	2.05		ug/Kg		109	66 - 136
DONA	1.88	2.24		ug/Kg		119	79 - 139

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C8 FOSA	58		25 - 150
13C4 PFBA	70		25 - 150
13C5 PFPeA	72		25 - 150
13C2 PFHxA	73		25 - 150
13C4 PFHpA	77		25 - 150
13C4 PFOA	73		25 - 150
13C5 PFNA	77		25 - 150
13C2 PFDA	75		25 - 150
13C2 PFUnA	70		25 - 150
13C2 PFDoA	72		25 - 150
13C2 PFTeDA	80		25 - 150
13C3 PFBS	73		25 - 150
18O2 PFHxS	74		25 - 150
13C4 PFOS	73		25 - 150
d3-NMeFOSAA	77		25 - 150
d5-NEtFOSAA	74		25 - 150
M2-4:2 FTS	91		25 - 150
M2-6:2 FTS	99		25 - 150
M2-8:2 FTS	85		25 - 150
d9-N-EtFOSE-M	12		10 - 120
d-N-MeFOSA-M	54		25 - 150

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: LCS 320-418992/2-A
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418992

<i>Isotope Dilution</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>d7-N-MeFOSE-M</i>	12		10 - 120
<i>d-N-EtFOSA-M</i>	52		25 - 150
<i>13C2 PFHxDA</i>	78		25 - 150
<i>13C3 HFPO-DA</i>	73		25 - 150

Lab Sample ID: 320-65226-1 MS
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: SS-172
Prep Type: Total/NA
Prep Batch: 418992

<i>Analyte</i>	<i>Sample</i>	<i>Sample</i>	<i>Spike</i>	<i>MS</i>	<i>MS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
	<i>Result</i>	<i>Qualifier</i>	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>				
Perfluorobutanoic acid (PFBA)	0.40	B	2.07	2.73		ug/Kg	☼	113	76 - 136
Perfluoropentanoic acid (PFPeA)	0.66		2.07	2.88		ug/Kg	☼	107	69 - 129
Perfluorohexanoic acid (PFHxA)	0.88	F1	2.07	3.61	F1	ug/Kg	☼	132	71 - 131
Perfluoroheptanoic acid (PFHpA)	0.76		2.07	3.08		ug/Kg	☼	112	71 - 131
Perfluorooctanoic acid (PFOA)	6.2	F1	2.07	8.66		ug/Kg	☼	120	72 - 132
Perfluorononanoic acid (PFNA)	2.1	F1	2.07	5.06	F1	ug/Kg	☼	143	73 - 133
Perfluorodecanoic acid (PFDA)	6.4	F1	2.07	9.41	F1	ug/Kg	☼	144	72 - 132
Perfluoroundecanoic acid (PFUnA)	3.3	F1	2.07	6.53	F1	ug/Kg	☼	154	66 - 126
Perfluorododecanoic acid (PFDoA)	1.3		2.07	3.93		ug/Kg	☼	127	71 - 131
Perfluorotridecanoic acid (PFTriA)	0.58		2.07	3.17		ug/Kg	☼	126	71 - 131
Perfluorotetradecanoic acid (PFTeA)	0.46		2.07	2.69		ug/Kg	☼	108	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.16	J	2.07	2.11		ug/Kg	☼	94	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	0.035	J F2 F1	2.07	1.80		ug/Kg	☼	85	53 - 130
Perfluorobutanesulfonic acid (PFBS)	<0.21		1.83	2.27		ug/Kg	☼	124	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	0.10	J	1.88	2.15		ug/Kg	☼	109	62 - 122
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		1.97	2.50		ug/Kg	☼	127	76 - 136
Perfluorodecanesulfonic acid (PFDS)	0.11	J	1.99	2.13		ug/Kg	☼	101	71 - 131
Perfluorooctanesulfonic acid (PFOS)	12		1.92	16.0	4	ug/Kg	☼	229	68 - 141
Perfluorooctanesulfonamide (FOSA)	1.2		2.07	3.74		ug/Kg	☼	125	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	<0.21	F1	1.94	2.54	F1	ug/Kg	☼	131	66 - 126
Perfluorononanesulfonic acid (PFNS)	0.050	J	1.98	1.98		ug/Kg	☼	97	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.07	2.43		ug/Kg	☼	118	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.1		2.07	4.38		ug/Kg	☼	112	72 - 132
4:2 FTS	<2.1		1.93	1.95	J	ug/Kg	☼	101	68 - 143
6:2 FTS	3.3	F1 F2	1.96	7.01	F1	ug/Kg	☼	191	73 - 139
8:2 FTS	16	F2	1.98	25.5	E 4	ug/Kg	☼	473	75 - 135
NEtFOSA	0.033	J	2.07	2.43		ug/Kg	☼	116	47 - 161

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: 320-65226-1 MS
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: SS-172
Prep Type: Total/NA
Prep Batch: 418992

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
NMeFOSA	<0.21		2.07	2.35		ug/Kg	⊛	114	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	<0.21	F1	2.00	1.62		ug/Kg	⊛	76	70 - 130
NMeFOSE	<0.21		2.07	2.35		ug/Kg	⊛	114	43 - 153
NEtFOSE	0.063	J	2.07	2.38		ug/Kg	⊛	112	44 - 155
F-53B Major	<0.21		1.93	2.39		ug/Kg	⊛	124	74 - 134
HFPO-DA (GenX)	<0.26		2.07	2.36		ug/Kg	⊛	114	53 - 158
F-53B Minor	<0.21		1.95	1.80		ug/Kg	⊛	93	66 - 136
DONA	<0.21		1.95	2.40		ug/Kg	⊛	123	79 - 139

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C8 FOSA	65		25 - 150
13C4 PFBA	61		25 - 150
13C5 PFPeA	69		25 - 150
13C2 PFHxA	82		25 - 150
13C4 PFHpA	85		25 - 150
13C4 PFOA	80		25 - 150
13C5 PFNA	82		25 - 150
13C2 PFDA	68		25 - 150
13C2 PFUnA	65		25 - 150
13C2 PFDoA	66		25 - 150
13C2 PFTeDA	63		25 - 150
13C3 PFBS	75		25 - 150
18O2 PFHxS	83		25 - 150
13C4 PFOS	74		25 - 150
d3-NMeFOSAA	58		25 - 150
d5-NEtFOSAA	59		25 - 150
M2-4:2 FTS	271	*5	25 - 150
M2-6:2 FTS	184	*5	25 - 150
d9-N-EtFOSE-M	20		10 - 120
d-N-MeFOSA-M	27		25 - 150
d7-N-MeFOSE-M	22		10 - 120
d-N-EtFOSA-M	22	*5	25 - 150
13C2 PFHxDA	56		25 - 150
13C3 HFPO-DA	70		25 - 150

Lab Sample ID: 320-65226-1 MSD
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: SS-172
Prep Type: Total/NA
Prep Batch: 418992

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	
				Result	Qualifier					RPD	Limit
Perfluorobutanoic acid (PFBA)	0.40	B	2.14	2.64		ug/Kg	⊛	105	76 - 136	3	30
Perfluoropentanoic acid (PFPeA)	0.66		2.14	2.84		ug/Kg	⊛	102	69 - 129	1	30
Perfluorohexanoic acid (PFHxA)	0.88	F1	2.14	3.30		ug/Kg	⊛	113	71 - 131	9	30
Perfluoroheptanoic acid (PFHpA)	0.76		2.14	3.06		ug/Kg	⊛	107	71 - 131	1	30
Perfluorooctanoic acid (PFOA)	6.2	F1	2.14	7.42	F1	ug/Kg	⊛	58	72 - 132	15	30
Perfluorononanoic acid (PFNA)	2.1	F1	2.14	5.54	F1	ug/Kg	⊛	160	73 - 133	9	30
Perfluorodecanoic acid (PFDA)	6.4	F1	2.14	8.05		ug/Kg	⊛	75	72 - 132	16	30

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: 320-65226-1 MSD
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: SS-172
Prep Type: Total/NA
Prep Batch: 418992

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	3.3	F1	2.14	5.48		ug/Kg	☼	100	66 - 126	17	30
Perfluorododecanoic acid (PFDoA)	1.3		2.14	3.54		ug/Kg	☼	104	71 - 131	10	30
Perfluorotridecanoic acid (PFTriA)	0.58		2.14	2.92		ug/Kg	☼	109	71 - 131	8	30
Perfluorotetradecanoic acid (PFTeA)	0.46		2.14	2.54		ug/Kg	☼	97	67 - 127	6	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.16	J	2.14	2.11		ug/Kg	☼	91	75 - 135	0	30
Perfluoro-n-octadecanoic acid (PFODA)	0.035	J F2 F1	2.14	1.10	F2 F1	ug/Kg	☼	50	53 - 130	48	30
Perfluorobutanesulfonic acid (PFBS)	<0.21		1.89	2.32		ug/Kg	☼	122	69 - 129	2	30
Perfluorohexanesulfonic acid (PFHxS)	0.10	J	1.95	2.16		ug/Kg	☼	106	62 - 122	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		2.04	2.55		ug/Kg	☼	125	76 - 136	2	30
Perfluorodecanesulfonic acid (PFDS)	0.11	J	2.06	2.01		ug/Kg	☼	92	71 - 131	6	30
Perfluorooctanesulfonic acid (PFOS)	12		1.99	15.6	4	ug/Kg	☼	199	68 - 141	3	30
Perfluorooctanesulfonamide (FOSA)	1.2		2.14	3.58		ug/Kg	☼	113	77 - 137	4	30
Perfluoropentanesulfonic acid (PFPeS)	<0.21	F1	2.01	2.77	F1	ug/Kg	☼	138	66 - 126	8	30
Perfluorononanesulfonic acid (PFNS)	0.050	J	2.06	2.08		ug/Kg	☼	99	72 - 132	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.14	2.35		ug/Kg	☼	110	72 - 132	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.1		2.14	3.87		ug/Kg	☼	84	72 - 132	13	30
4:2 FTS	<2.1		2.00	2.01	J	ug/Kg	☼	100	68 - 143	3	30
6:2 FTS	3.3	F1 F2	2.03	4.83	F2	ug/Kg	☼	78	73 - 139	37	30
8:2 FTS	16	F2	2.05	11.2	4 F2	ug/Kg	☼	-239	75 - 135	78	30
NEtFOSA	0.033	J	2.14	2.39		ug/Kg	☼	110	47 - 161	2	30
NMeFOSA	<0.21		2.14	2.44		ug/Kg	☼	114	63 - 148	4	30
Perfluorododecanesulfonic acid (PFDoS)	<0.21	F1	2.07	1.38	F1	ug/Kg	☼	62	70 - 130	16	30
NMeFOSE	<0.21		2.14	2.17		ug/Kg	☼	101	43 - 153	8	30
NEtFOSE	0.063	J	2.14	2.37		ug/Kg	☼	108	44 - 155	0	30
F-53B Major	<0.21		2.00	2.52		ug/Kg	☼	126	74 - 134	5	30
HFPO-DA (GenX)	<0.26		2.14	2.32		ug/Kg	☼	109	53 - 158	1	30
F-53B Minor	<0.21		2.02	1.74		ug/Kg	☼	86	66 - 136	4	30
DONA	<0.21		2.02	2.34		ug/Kg	☼	116	79 - 139	3	30
MSD MSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C8 FOSA	72		25 - 150								
13C4 PFBA	65		25 - 150								
13C5 PFPeA	71		25 - 150								
13C2 PFHxA	85		25 - 150								
13C4 PFHpA	92		25 - 150								
13C4 PFOA	85		25 - 150								

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: 320-65226-1 MSD
Matrix: Solid
Analysis Batch: 420405

Client Sample ID: SS-172
Prep Type: Total/NA
Prep Batch: 418992

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C5 PFNA	92		25 - 150
13C2 PFDA	77		25 - 150
13C2 PFUnA	72		25 - 150
13C2 PFDoA	62		25 - 150
13C2 PFTeDA	59		25 - 150
13C3 PFBS	77		25 - 150
18O2 PFHxS	88		25 - 150
13C4 PFOS	82		25 - 150
d3-NMeFOSAA	65		25 - 150
d5-NEtFOSAA	64		25 - 150
M2-4:2 FTS	272	*5	25 - 150
M2-6:2 FTS	220	*5	25 - 150
d9-N-EtFOSE-M	21		10 - 120
d-N-MeFOSA-M	40		25 - 150
d7-N-MeFOSE-M	26		10 - 120
d-N-EtFOSA-M	33		25 - 150
13C2 PFHxDA	58		25 - 150
13C3 HFPO-DA	78		25 - 150

Lab Sample ID: MB 320-418993/1-A
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418993

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	0.0781	J	0.20	0.028	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20	0.077	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorohexanoic acid (PFHxA)	<0.20		0.20	0.042	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20	0.029	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20	0.086	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorononanoic acid (PFNA)	<0.20		0.20	0.036	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorodecanoic acid (PFDA)	<0.20		0.20	0.022	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.044	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorooctanesulfonic acid (PFOS)	<0.50		0.50	0.20	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg		10/06/20 05:26	10/10/20 01:27	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: MB 320-418993/1-A
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418993

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
F-53B Major	<0.20		0.20	0.027	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg		10/06/20 05:26	10/10/20 01:27	1
DONA	<0.20		0.20	0.018	ug/Kg		10/06/20 05:26	10/10/20 01:27	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	78		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C4 PFBA	74		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C5 PFPeA	75		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C2 PFHxA	77		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C4 PFHpA	84		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C4 PFOA	84		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C5 PFNA	86		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C2 PFDA	80		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C2 PFUnA	79		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C2 PFDoA	81		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C2 PFTeDA	89		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C3 PFBS	77		25 - 150	10/06/20 05:26	10/10/20 01:27	1
18O2 PFHxS	82		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C4 PFOS	81		25 - 150	10/06/20 05:26	10/10/20 01:27	1
d3-NMeFOSAA	83		25 - 150	10/06/20 05:26	10/10/20 01:27	1
d5-NEtFOSAA	75		25 - 150	10/06/20 05:26	10/10/20 01:27	1
M2-4:2 FTS	105		25 - 150	10/06/20 05:26	10/10/20 01:27	1
M2-6:2 FTS	105		25 - 150	10/06/20 05:26	10/10/20 01:27	1
M2-8:2 FTS	98		25 - 150	10/06/20 05:26	10/10/20 01:27	1
d9-N-EtFOSE-M	7 *5		10 - 120	10/06/20 05:26	10/10/20 01:27	1
d-N-MeFOSA-M	63		25 - 150	10/06/20 05:26	10/10/20 01:27	1
d7-N-MeFOSE-M	8 *5		10 - 120	10/06/20 05:26	10/10/20 01:27	1
d-N-EtFOSA-M	58		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C2 PFHxDA	88		25 - 150	10/06/20 05:26	10/10/20 01:27	1
13C3 HFPO-DA	81		25 - 150	10/06/20 05:26	10/10/20 01:27	1

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: LCS 320-418993/2-A
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418993

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	2.00	2.33		ug/Kg		117	76 - 136
Perfluoropentanoic acid (PFPeA)	2.00	2.12		ug/Kg		106	69 - 129
Perfluorohexanoic acid (PFHxA)	2.00	2.38		ug/Kg		119	71 - 131
Perfluoroheptanoic acid (PFHpA)	2.00	2.13		ug/Kg		106	71 - 131
Perfluorooctanoic acid (PFOA)	2.00	2.31		ug/Kg		116	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.02		ug/Kg		101	73 - 133
Perfluorodecanoic acid (PFDA)	2.00	2.30		ug/Kg		115	72 - 132
Perfluoroundecanoic acid (PFUnA)	2.00	2.21		ug/Kg		111	66 - 126
Perfluorododecanoic acid (PFDoA)	2.00	2.23		ug/Kg		112	71 - 131
Perfluorotridecanoic acid (PFTriA)	2.00	2.24		ug/Kg		112	71 - 131
Perfluorotetradecanoic acid (PFTeA)	2.00	2.09		ug/Kg		104	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	1.76		ug/Kg		88	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	2.00	1.85		ug/Kg		93	53 - 130
Perfluorobutanesulfonic acid (PFBS)	1.77	2.17		ug/Kg		123	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.84		ug/Kg		101	62 - 122
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.12		ug/Kg		112	76 - 136
Perfluorodecanesulfonic acid (PFDS)	1.93	2.08		ug/Kg		108	71 - 131
Perfluorooctanesulfonic acid (PFOS)	1.86	1.96		ug/Kg		106	68 - 141
Perfluorooctanesulfonamide (FOSA)	2.00	2.15		ug/Kg		107	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.07		ug/Kg		110	66 - 126
Perfluorononanesulfonic acid (PFNS)	1.92	2.16		ug/Kg		113	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.02		ug/Kg		101	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.17		ug/Kg		109	72 - 132
4:2 FTS	1.87	1.86	J	ug/Kg		100	68 - 143
6:2 FTS	1.90	1.85	J	ug/Kg		98	73 - 139
8:2 FTS	1.92	1.91	J	ug/Kg		100	75 - 135
10:2 FTS	1.93	1.93		ug/Kg		100	69 - 145
NEtFOSA	2.00	2.17		ug/Kg		109	47 - 161
NMeFOSA	2.00	2.27		ug/Kg		113	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.96		ug/Kg		101	70 - 130
NMeFOSE	2.00	2.06		ug/Kg		103	43 - 153
NEtFOSE	2.00	2.11		ug/Kg		106	44 - 155
F-53B Major	1.86	2.06		ug/Kg		110	74 - 134
HFPO-DA (GenX)	2.00	2.21		ug/Kg		111	53 - 158
F-53B Minor	1.88	2.04		ug/Kg		108	66 - 136
DONA	1.88	2.06		ug/Kg		109	79 - 139

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C8 FOSA	78		25 - 150
13C4 PFBA	78		25 - 150
13C5 PFPeA	80		25 - 150
13C2 PFHxA	82		25 - 150
13C4 PFHpA	88		25 - 150
13C4 PFOA	83		25 - 150
13C5 PFNA	92		25 - 150
13C2 PFDA	82		25 - 150
13C2 PFUnA	80		25 - 150
13C2 PFDoA	90		25 - 150
13C2 PFTeDA	93		25 - 150
13C3 PFBS	80		25 - 150
18O2 PFHxS	86		25 - 150
13C4 PFOS	84		25 - 150
d3-NMeFOSAA	87		25 - 150
d5-NEtFOSAA	83		25 - 150
M2-4:2 FTS	113		25 - 150
M2-6:2 FTS	106		25 - 150
M2-8:2 FTS	104		25 - 150
d9-N-EtFOSE-M	18		10 - 120
d-N-MeFOSA-M	67		25 - 150
d7-N-MeFOSE-M	22		10 - 120
d-N-EtFOSA-M	60		25 - 150
13C2 PFHxDA	99		25 - 150
13C3 HFPO-DA	82		25 - 150

Lab Sample ID: 320-65226-10 MS
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: SS-148
Prep Type: Total/NA
Prep Batch: 418993

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Perfluorobutanoic acid (PFBA)	1.4	B	2.29	4.13		ug/Kg	☼	119	76 - 136
Perfluoropentanoic acid (PFPeA)	5.4		2.29	8.24		ug/Kg	☼	126	69 - 129
Perfluorohexanoic acid (PFHxA)	2.4		2.29	5.26		ug/Kg	☼	125	71 - 131
Perfluoroheptanoic acid (PFHpA)	0.99		2.29	3.45		ug/Kg	☼	108	71 - 131
Perfluorooctanoic acid (PFOA)	0.81		2.29	3.33		ug/Kg	☼	110	72 - 132
Perfluorononanoic acid (PFNA)	0.55		2.29	2.97		ug/Kg	☼	106	73 - 133
Perfluorodecanoic acid (PFDA)	1.0		2.29	3.60		ug/Kg	☼	112	72 - 132
Perfluoroundecanoic acid (PFUnA)	0.22		2.29	3.00		ug/Kg	☼	122	66 - 126
Perfluorododecanoic acid (PFDoA)	<0.22		2.29	2.62		ug/Kg	☼	114	71 - 131
Perfluorotridecanoic acid (PFTriA)	<0.22		2.29	2.38		ug/Kg	☼	104	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<0.22		2.29	2.34		ug/Kg	☼	102	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.053	J	2.29	2.23		ug/Kg	☼	95	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		2.29	2.10		ug/Kg	☼	92	53 - 130
Perfluorobutanesulfonic acid (PFBS)	<0.22		2.02	2.40		ug/Kg	☼	118	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	0.069	J I	2.08	2.15		ug/Kg	☼	100	62 - 122

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: 320-65226-10 MS
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: SS-148
Prep Type: Total/NA
Prep Batch: 418993

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		2.18	2.47		ug/Kg	☼	113	76 - 136
Perfluorodecanesulfonic acid (PFDS)	<0.22		2.21	2.64		ug/Kg	☼	119	71 - 131
Perfluorooctanesulfonic acid (PFOS)	0.54	J	2.13	2.94		ug/Kg	☼	113	68 - 141
Perfluorooctanesulfonamide (FOSA)	<0.22		2.29	2.43		ug/Kg	☼	106	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	<0.22		2.15	2.52		ug/Kg	☼	117	66 - 126
Perfluorononanesulfonic acid (PFNS)	<0.22		2.20	2.50		ug/Kg	☼	114	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.29	2.59		ug/Kg	☼	113	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.29	2.55		ug/Kg	☼	112	72 - 132
4:2 FTS	<2.2		2.14	2.22	J	ug/Kg	☼	104	68 - 143
8:2 FTS	1.9	J F1	2.19	3.42	F1	ug/Kg	☼	69	75 - 135
10:2 FTS	0.067	J	2.21	2.20		ug/Kg	☼	97	69 - 145
NEtFOSA	<0.22		2.29	2.61		ug/Kg	☼	114	47 - 161
NMeFOSA	<0.22		2.29	2.50		ug/Kg	☼	109	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	<0.22		2.22	2.40		ug/Kg	☼	108	70 - 130
NMeFOSE	<0.22		2.29	2.44		ug/Kg	☼	107	43 - 153
NEtFOSE	0.052	J	2.29	2.28		ug/Kg	☼	97	44 - 155
F-53B Major	<0.22		2.13	2.63		ug/Kg	☼	123	74 - 134
HFPO-DA (GenX)	<0.28		2.29	2.55		ug/Kg	☼	111	53 - 158
F-53B Minor	<0.22		2.16	2.57		ug/Kg	☼	119	66 - 136
DONA	<0.22		2.16	2.42		ug/Kg	☼	112	79 - 139

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C8 FOSA	87		25 - 150
13C4 PFBA	63		25 - 150
13C5 PFPeA	72		25 - 150
13C2 PFHxA	82		25 - 150
13C4 PFHpA	85		25 - 150
13C4 PFOA	82		25 - 150
13C5 PFNA	88		25 - 150
13C2 PFDA	87		25 - 150
13C2 PFUnA	89		25 - 150
13C2 PFDoA	99		25 - 150
13C2 PFTeDA	104		25 - 150
13C3 PFBS	73		25 - 150
18O2 PFHxS	78		25 - 150
13C4 PFOS	79		25 - 150
d3-NMeFOSAA	103		25 - 150
d5-NEtFOSAA	101		25 - 150
M2-4:2 FTS	224	*5	25 - 150
M2-8:2 FTS	198	*5	25 - 150
d9-N-EtFOSE-M	36		10 - 120
d-N-MeFOSA-M	51		25 - 150

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: 320-65226-10 MS
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: SS-148
Prep Type: Total/NA
Prep Batch: 418993

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>d7-N-MeFOSE-M</i>	38		10 - 120
<i>d-N-EtFOSA-M</i>	49		25 - 150
<i>13C2 PFHxDA</i>	98		25 - 150
<i>13C3 HFPO-DA</i>	74		25 - 150

Lab Sample ID: 320-65226-10 MSD
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: SS-148
Prep Type: Total/NA
Prep Batch: 418993

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	1.4	B	2.15	3.78		ug/Kg	⊛	111	76 - 136	9	30
Perfluoropentanoic acid (PFPeA)	5.4		2.15	7.43		ug/Kg	⊛	97	69 - 129	10	30
Perfluorohexanoic acid (PFHxA)	2.4		2.15	4.70		ug/Kg	⊛	106	71 - 131	11	30
Perfluoroheptanoic acid (PFHpA)	0.99		2.15	3.56		ug/Kg	⊛	119	71 - 131	3	30
Perfluorooctanoic acid (PFOA)	0.81		2.15	3.26		ug/Kg	⊛	114	72 - 132	2	30
Perfluorononanoic acid (PFNA)	0.55		2.15	2.89		ug/Kg	⊛	109	73 - 133	3	30
Perfluorodecanoic acid (PFDA)	1.0		2.15	3.69		ug/Kg	⊛	124	72 - 132	3	30
Perfluoroundecanoic acid (PFUnA)	0.22		2.15	2.90		ug/Kg	⊛	125	66 - 126	3	30
Perfluorododecanoic acid (PFDoA)	<0.22		2.15	2.49		ug/Kg	⊛	116	71 - 131	5	30
Perfluorotridecanoic acid (PFTriA)	<0.22		2.15	2.48		ug/Kg	⊛	115	71 - 131	4	30
Perfluorotetradecanoic acid (PFTeA)	<0.22		2.15	2.06		ug/Kg	⊛	96	67 - 127	13	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.053	J	2.15	2.24		ug/Kg	⊛	102	75 - 135	0	30
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		2.15	2.06		ug/Kg	⊛	96	53 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<0.22		1.90	2.35		ug/Kg	⊛	124	69 - 129	2	30
Perfluorohexanesulfonic acid (PFHxS)	0.069	J I	1.96	2.14		ug/Kg	⊛	106	62 - 122	0	30
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		2.05	2.37		ug/Kg	⊛	116	76 - 136	4	30
Perfluorodecanesulfonic acid (PFDS)	<0.22		2.07	2.54		ug/Kg	⊛	122	71 - 131	4	30
Perfluorooctanesulfonic acid (PFOS)	0.54	J	1.99	2.81		ug/Kg	⊛	114	68 - 141	4	30
Perfluorooctanesulfonamide (FOSA)	<0.22		2.15	2.44		ug/Kg	⊛	113	77 - 137	0	30
Perfluoropentanesulfonic acid (PFPeS)	<0.22		2.02	2.48		ug/Kg	⊛	123	66 - 126	2	30
Perfluorononanesulfonic acid (PFNS)	<0.22		2.06	2.38		ug/Kg	⊛	115	72 - 132	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.15	2.46		ug/Kg	⊛	114	72 - 132	5	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.15	2.26		ug/Kg	⊛	105	72 - 132	12	30
4:2 FTS	<2.2		2.01	2.03	J	ug/Kg	⊛	101	68 - 143	9	30
8:2 FTS	1.9	J F1	2.06	3.68		ug/Kg	⊛	86	75 - 135	7	30
10:2 FTS	0.067	J	2.07	1.79		ug/Kg	⊛	83	69 - 145	21	30
NEtFOSA	<0.22		2.15	2.37		ug/Kg	⊛	110	47 - 161	10	30

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: 320-65226-10 MSD
Matrix: Solid
Analysis Batch: 420408

Client Sample ID: SS-148
Prep Type: Total/NA
Prep Batch: 418993

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
NMeFOSA	<0.22		2.15	2.53		ug/Kg	⊛	118	63 - 148	1	30
Perfluorododecanesulfonic acid (PFDoS)	<0.22		2.08	2.27		ug/Kg	⊛	109	70 - 130	6	30
NMeFOSE	<0.22		2.15	2.28		ug/Kg	⊛	106	43 - 153	7	30
NEtFOSE	0.052	J	2.15	2.21		ug/Kg	⊛	100	44 - 155	3	30
F-53B Major	<0.22		2.00	2.42		ug/Kg	⊛	121	74 - 134	8	30
HFPO-DA (GenX)	<0.28		2.15	2.46		ug/Kg	⊛	115	53 - 158	4	30
F-53B Minor	<0.22		2.02	2.32		ug/Kg	⊛	115	66 - 136	10	30
DONA	<0.22		2.02	2.33		ug/Kg	⊛	115	79 - 139	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C8 FOSA	84		25 - 150
13C4 PFBA	63		25 - 150
13C5 PFPeA	71		25 - 150
13C2 PFHxA	86		25 - 150
13C4 PFHpA	84		25 - 150
13C4 PFOA	82		25 - 150
13C5 PFNA	87		25 - 150
13C2 PFDA	82		25 - 150
13C2 PFUnA	85		25 - 150
13C2 PFDoA	93		25 - 150
13C2 PFTeDA	104		25 - 150
13C3 PFBS	72		25 - 150
18O2 PFHxS	76		25 - 150
13C4 PFOS	78		25 - 150
d3-NMeFOSAA	100		25 - 150
d5-NEtFOSAA	101		25 - 150
M2-4:2 FTS	239	*5	25 - 150
M2-8:2 FTS	201	*5	25 - 150
d9-N-EtFOSE-M	33		10 - 120
d-N-MeFOSA-M	45		25 - 150
d7-N-MeFOSE-M	37		10 - 120
d-N-EtFOSA-M	42		25 - 150
13C2 PFHxDA	86		25 - 150
13C3 HFPO-DA	73		25 - 150

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

Lab Sample ID: 320-65226-1 MS
Matrix: Solid
Analysis Batch: 421231

Client Sample ID: SS-172
Prep Type: Total/NA
Prep Batch: 418992

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
10:2 FTS - DL	24	F2	1.99	25.2	4	ug/Kg	⊛	41	69 - 145

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
M2-8:2 FTS - DL	105		25 - 150

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

Lab Sample ID: 320-65226-1 MSD
Matrix: Solid
Analysis Batch: 421231

Client Sample ID: SS-172
Prep Type: Total/NA
Prep Batch: 418992

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
10:2 FTS - DL	24	F2	2.06	9.16	J 4 F2	ug/Kg	✱	-738	69 - 145	93	30
	<i>MSD</i>	<i>MSD</i>									
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>								
M2-8:2 FTS - DL	116		25 - 150								

Lab Sample ID: 320-65226-10 MS
Matrix: Solid
Analysis Batch: 420974

Client Sample ID: SS-148
Prep Type: Total/NA
Prep Batch: 418993

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
6:2 FTS - DL	37		2.17	34.7	4	ug/Kg	✱	-98	73 - 139		
	<i>MS</i>	<i>MS</i>									
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>								
M2-6:2 FTS - DL	113		25 - 150								

Lab Sample ID: 320-65226-10 MSD
Matrix: Solid
Analysis Batch: 420974

Client Sample ID: SS-148
Prep Type: Total/NA
Prep Batch: 418993

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
6:2 FTS - DL	37		2.04	32.4	4	ug/Kg	✱	-215	73 - 139	7	30
	<i>MSD</i>	<i>MSD</i>									
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>								
M2-6:2 FTS - DL	123		25 - 150								

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-65226-1 DU
Matrix: Solid
Analysis Batch: 418113

Client Sample ID: SS-172
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Moisture	11.1		11.2		%		0.7	20
Percent Solids	88.9		88.8		%		0.09	20

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

LCMS

Prep Batch: 418992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65226-1 - DL	SS-172	Total/NA	Solid	SHAKE	
320-65226-1	SS-172	Total/NA	Solid	SHAKE	
320-65226-2	SS-156	Total/NA	Solid	SHAKE	
320-65226-3	SS-155	Total/NA	Solid	SHAKE	
320-65226-4	SS-154	Total/NA	Solid	SHAKE	
320-65226-5	SS-153	Total/NA	Solid	SHAKE	
320-65226-6	SS-152	Total/NA	Solid	SHAKE	
320-65226-7	SS-151	Total/NA	Solid	SHAKE	
320-65226-8	SS-150	Total/NA	Solid	SHAKE	
320-65226-9	SS-149	Total/NA	Solid	SHAKE	
MB 320-418992/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-418992/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-65226-1 MS - DL	SS-172	Total/NA	Solid	SHAKE	
320-65226-1 MS	SS-172	Total/NA	Solid	SHAKE	
320-65226-1 MSD - DL	SS-172	Total/NA	Solid	SHAKE	
320-65226-1 MSD	SS-172	Total/NA	Solid	SHAKE	

Prep Batch: 418993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65226-10 - DL	SS-148	Total/NA	Solid	SHAKE	
320-65226-10	SS-148	Total/NA	Solid	SHAKE	
320-65226-11	SS-147	Total/NA	Solid	SHAKE	
320-65226-12	SS-146	Total/NA	Solid	SHAKE	
320-65226-13	SS-145	Total/NA	Solid	SHAKE	
320-65226-14	SS-144	Total/NA	Solid	SHAKE	
320-65226-15	SS-143	Total/NA	Solid	SHAKE	
320-65226-16	SS-142	Total/NA	Solid	SHAKE	
320-65226-18	DUP-02	Total/NA	Solid	SHAKE	
320-65226-19	DUP-03	Total/NA	Solid	SHAKE	
MB 320-418993/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-418993/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-65226-10 MS - DL	SS-148	Total/NA	Solid	SHAKE	
320-65226-10 MS	SS-148	Total/NA	Solid	SHAKE	
320-65226-10 MSD - DL	SS-148	Total/NA	Solid	SHAKE	
320-65226-10 MSD	SS-148	Total/NA	Solid	SHAKE	

Analysis Batch: 420405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65226-1	SS-172	Total/NA	Solid	537 (modified)	418992
320-65226-2	SS-156	Total/NA	Solid	537 (modified)	418992
320-65226-3	SS-155	Total/NA	Solid	537 (modified)	418992
320-65226-4	SS-154	Total/NA	Solid	537 (modified)	418992
320-65226-5	SS-153	Total/NA	Solid	537 (modified)	418992
320-65226-6	SS-152	Total/NA	Solid	537 (modified)	418992
320-65226-7	SS-151	Total/NA	Solid	537 (modified)	418992
320-65226-8	SS-150	Total/NA	Solid	537 (modified)	418992
320-65226-9	SS-149	Total/NA	Solid	537 (modified)	418992
MB 320-418992/1-A	Method Blank	Total/NA	Solid	537 (modified)	418992
LCS 320-418992/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	418992
320-65226-1 MS	SS-172	Total/NA	Solid	537 (modified)	418992
320-65226-1 MSD	SS-172	Total/NA	Solid	537 (modified)	418992

Eurofins TestAmerica, Sacramento

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

LCMS

Analysis Batch: 420408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65226-10	SS-148	Total/NA	Solid	537 (modified)	418993
320-65226-11	SS-147	Total/NA	Solid	537 (modified)	418993
320-65226-12	SS-146	Total/NA	Solid	537 (modified)	418993
320-65226-13	SS-145	Total/NA	Solid	537 (modified)	418993
320-65226-14	SS-144	Total/NA	Solid	537 (modified)	418993
320-65226-15	SS-143	Total/NA	Solid	537 (modified)	418993
320-65226-16	SS-142	Total/NA	Solid	537 (modified)	418993
320-65226-18	DUP-02	Total/NA	Solid	537 (modified)	418993
320-65226-19	DUP-03	Total/NA	Solid	537 (modified)	418993
MB 320-418993/1-A	Method Blank	Total/NA	Solid	537 (modified)	418993
LCS 320-418993/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	418993
320-65226-10 MS	SS-148	Total/NA	Solid	537 (modified)	418993
320-65226-10 MSD	SS-148	Total/NA	Solid	537 (modified)	418993

Analysis Batch: 420974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65226-10 - DL	SS-148	Total/NA	Solid	537 (modified)	418993
320-65226-10 MS - DL	SS-148	Total/NA	Solid	537 (modified)	418993
320-65226-10 MSD - DL	SS-148	Total/NA	Solid	537 (modified)	418993

Analysis Batch: 421231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65226-1 - DL	SS-172	Total/NA	Solid	537 (modified)	418992
320-65226-1 MS - DL	SS-172	Total/NA	Solid	537 (modified)	418992
320-65226-1 MSD - DL	SS-172	Total/NA	Solid	537 (modified)	418992

General Chemistry

Analysis Batch: 418113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65226-1	SS-172	Total/NA	Solid	D 2216	
320-65226-2	SS-156	Total/NA	Solid	D 2216	
320-65226-3	SS-155	Total/NA	Solid	D 2216	
320-65226-4	SS-154	Total/NA	Solid	D 2216	
320-65226-5	SS-153	Total/NA	Solid	D 2216	
320-65226-6	SS-152	Total/NA	Solid	D 2216	
320-65226-7	SS-151	Total/NA	Solid	D 2216	
320-65226-8	SS-150	Total/NA	Solid	D 2216	
320-65226-9	SS-149	Total/NA	Solid	D 2216	
320-65226-10	SS-148	Total/NA	Solid	D 2216	
320-65226-11	SS-147	Total/NA	Solid	D 2216	
320-65226-12	SS-146	Total/NA	Solid	D 2216	
320-65226-13	SS-145	Total/NA	Solid	D 2216	
320-65226-14	SS-144	Total/NA	Solid	D 2216	
320-65226-15	SS-143	Total/NA	Solid	D 2216	
320-65226-16	SS-142	Total/NA	Solid	D 2216	
320-65226-18	DUP-02	Total/NA	Solid	D 2216	
320-65226-19	DUP-03	Total/NA	Solid	D 2216	
320-65226-1 DU	SS-172	Total/NA	Solid	D 2216	

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-172

Date Collected: 09/29/20 11:50

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-172

Date Collected: 09/29/20 11:50

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-1

Matrix: Solid

Percent Solids: 88.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE	DL		5.32 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100			421231	10/13/20 10:29	D1R	TAL SAC
Total/NA	Prep	SHAKE			5.32 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/09/20 22:39	K1S	TAL SAC

Client Sample ID: SS-156

Date Collected: 09/29/20 13:30

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-156

Date Collected: 09/29/20 13:30

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-2

Matrix: Solid

Percent Solids: 95.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.48 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/09/20 23:07	K1S	TAL SAC

Client Sample ID: SS-155

Date Collected: 09/29/20 13:45

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-155

Date Collected: 09/29/20 13:45

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-3

Matrix: Solid

Percent Solids: 96.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/09/20 23:16	K1S	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-154
Date Collected: 09/29/20 13:50
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-154
Date Collected: 09/29/20 13:50
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-4
Matrix: Solid
Percent Solids: 91.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/09/20 23:26	K1S	TAL SAC

Client Sample ID: SS-153
Date Collected: 09/29/20 14:15
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-153
Date Collected: 09/29/20 14:15
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-5
Matrix: Solid
Percent Solids: 91.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.43 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/09/20 23:54	K1S	TAL SAC

Client Sample ID: SS-152
Date Collected: 09/29/20 14:25
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-152
Date Collected: 09/29/20 14:25
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-6
Matrix: Solid
Percent Solids: 88.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/10/20 00:03	K1S	TAL SAC

Client Sample ID: SS-151
Date Collected: 09/29/20 14:35
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-151
Date Collected: 09/29/20 14:35
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-7
Matrix: Solid
Percent Solids: 88.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/10/20 00:12	K1S	TAL SAC

Client Sample ID: SS-150
Date Collected: 09/29/20 14:50
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-150
Date Collected: 09/29/20 14:50
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-8
Matrix: Solid
Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.26 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/10/20 00:22	K1S	TAL SAC

Client Sample ID: SS-149
Date Collected: 09/29/20 15:00
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-149
Date Collected: 09/29/20 15:00
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-9
Matrix: Solid
Percent Solids: 87.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.00 mL	418992	10/06/20 05:20	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420405	10/10/20 00:31	K1S	TAL SAC

Client Sample ID: SS-148
Date Collected: 09/29/20 15:20
Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-148

Lab Sample ID: 320-65226-10

Date Collected: 09/29/20 15:20

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.14 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 01:46	K1S	TAL SAC
Total/NA	Prep	SHAKE	DL		5.14 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			420974	10/12/20 11:55	S1M	TAL SAC

Client Sample ID: SS-147

Lab Sample ID: 320-65226-11

Date Collected: 09/29/20 15:30

Matrix: Solid

Date Received: 10/01/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-147

Lab Sample ID: 320-65226-11

Date Collected: 09/29/20 15:30

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 94.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 02:14	K1S	TAL SAC

Client Sample ID: SS-146

Lab Sample ID: 320-65226-12

Date Collected: 09/29/20 15:40

Matrix: Solid

Date Received: 10/01/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-146

Lab Sample ID: 320-65226-12

Date Collected: 09/29/20 15:40

Matrix: Solid

Date Received: 10/01/20 09:40

Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.30 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 02:23	K1S	TAL SAC

Client Sample ID: SS-145

Lab Sample ID: 320-65226-13

Date Collected: 09/29/20 16:00

Matrix: Solid

Date Received: 10/01/20 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-145

Date Collected: 09/29/20 16:00

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-13

Matrix: Solid

Percent Solids: 53.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.19 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 02:33	K1S	TAL SAC

Client Sample ID: SS-144

Date Collected: 09/29/20 16:15

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-144

Date Collected: 09/29/20 16:15

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-14

Matrix: Solid

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.31 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 03:01	K1S	TAL SAC

Client Sample ID: SS-143

Date Collected: 09/29/20 16:25

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-15

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: SS-143

Date Collected: 09/29/20 16:25

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-15

Matrix: Solid

Percent Solids: 95.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.36 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 03:10	K1S	TAL SAC

Client Sample ID: SS-142

Date Collected: 09/29/20 16:35

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-16

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Client Sample ID: SS-142

Date Collected: 09/29/20 16:35

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-16

Matrix: Solid

Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.05 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 03:20	K1S	TAL SAC

Client Sample ID: DUP-02

Date Collected: 09/29/20 00:00

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-18

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: DUP-02

Date Collected: 09/29/20 00:00

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-18

Matrix: Solid

Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 03:29	K1S	TAL SAC

Client Sample ID: DUP-03

Date Collected: 09/29/20 00:00

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-19

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			418113	10/02/20 12:39	TCS	TAL SAC

Client Sample ID: DUP-03

Date Collected: 09/29/20 00:00

Date Received: 10/01/20 09:40

Lab Sample ID: 320-65226-19

Matrix: Solid

Percent Solids: 95.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.23 g	10.00 mL	418993	10/06/20 05:26	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1			420408	10/10/20 03:38	K1S	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

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

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65226-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65226-1	SS-172	Solid	09/29/20 11:50	10/01/20 09:40	
320-65226-2	SS-156	Solid	09/29/20 13:30	10/01/20 09:40	
320-65226-3	SS-155	Solid	09/29/20 13:45	10/01/20 09:40	
320-65226-4	SS-154	Solid	09/29/20 13:50	10/01/20 09:40	
320-65226-5	SS-153	Solid	09/29/20 14:15	10/01/20 09:40	
320-65226-6	SS-152	Solid	09/29/20 14:25	10/01/20 09:40	
320-65226-7	SS-151	Solid	09/29/20 14:35	10/01/20 09:40	
320-65226-8	SS-150	Solid	09/29/20 14:50	10/01/20 09:40	
320-65226-9	SS-149	Solid	09/29/20 15:00	10/01/20 09:40	
320-65226-10	SS-148	Solid	09/29/20 15:20	10/01/20 09:40	
320-65226-11	SS-147	Solid	09/29/20 15:30	10/01/20 09:40	
320-65226-12	SS-146	Solid	09/29/20 15:40	10/01/20 09:40	
320-65226-13	SS-145	Solid	09/29/20 16:00	10/01/20 09:40	
320-65226-14	SS-144	Solid	09/29/20 16:15	10/01/20 09:40	
320-65226-15	SS-143	Solid	09/29/20 16:25	10/01/20 09:40	
320-65226-16	SS-142	Solid	09/29/20 16:35	10/01/20 09:40	
320-65226-18	DUP-02	Solid	09/29/20 00:00	10/01/20 09:40	
320-65226-19	DUP-03	Solid	09/29/20 00:00	10/01/20 09:40	

Eurofins TestAmerica, Sacramento
880 Riverside Parkway

Chain of Custody Record **492303**



Environment Testing
TestAmerica

Address: West Sacramento, CA 95605-1500

Regulatory Program: DW NPDES RCRA Other:

TAL-8210

Client Contact		Project Manager: <u>Erin Henry</u>		Site Contact: <u>Amy Siefker</u>		Date: <u>9/30/20</u>		COC No:							
Company Name: <u>Arcadis</u>		Tel/Email:		Lab Contact: <u>S. Fredrick</u>		Carrier: <u>FedEx</u>		1 of 2 COCs							
Address: <u>126 N. Jefferson St, Suite 400</u>		Analysis Turnaround Time													
City/State/Zip: <u>Milwaukee, WI 53202</u>		<input type="checkbox"/> CALENDAR DAYS		<input type="checkbox"/> WORKING DAYS		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>5BT Mod. PFAS</u> <u>36 compounds</u>		Sampler: <u>Amy Siefker</u>							
Phone:		TAT if different from Below _____						For Lab Use Only:							
Fax:		<input type="checkbox"/> 2 weeks		<input type="checkbox"/> 1 week				Walk-in Client:							
Project Name: <u>Mannette Sup. Site Inv.</u>		<input type="checkbox"/> 2 days		<input type="checkbox"/> 1 day				Lab Sampling:							
Site: <u>Mannette, WI</u>		Standard		# of Cont.		Sample Specific Notes:		Job / SDG No.:							
PO# <u>30005294-00020</u>								Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.		Filtered Sample (Y/N)		Perform MS / MSD (Y/N)	
SS-172		9/29/20		1150		G		S		1		N		X	
SS-156				1330						1				X	
SS-155				1345						1				X	
SS-154				1350						1				X	
SS-153				1415						1				X	
SS-152				1425						1				X	
SS-151				1435						1				X	
SS-150				1450						1				X	
SS-149				1500						1				X	
SS-148				1520						1				X	
SS-147				1530						1				X	
SS-146		↓		1540		↓		↓		1		↓		X	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____										N					
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.										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"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months					
Special Instructions/QC Requirements & Comments: <u>Standard TAT</u>															
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>135717 / 135719</u>				Cooler Temp. (°C): Obs'd: <u>3.5</u> Corr'd: <u>4.0</u>		Therm ID No.: <u>146</u>							
Relinquished by: <u>Amy Siefker</u>		Company: <u>Arcadis</u>		Date/Time: <u>9/30/20 1630</u>		Received by: <u>[Signature]</u>		Company: <u>EMDsc</u>		Date/Time: <u>9/30/20 1112</u>					
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:					
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:					



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10/14/2020



Address: _____

Regulatory Program: DW NPDES RCRA Other:

TAL-8210

Client Contact		Project Manager:		Site Contact:		Date: 9/30/20		COC No:	
Company Name:		Tel/Email:		Lab Contact:		Carrier: FedEx		2 of 2 COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS/MSD (Y/N) 537 Mod. PEAS 36 compounds				Sampler: Amy Siefker For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone:		TAT if different from Below							
Fax:		<input type="checkbox"/> 2 weeks							
Project Name:		<input type="checkbox"/> 1 week							
Site:		<input type="checkbox"/> 2 days		Standard					
P O #		<input type="checkbox"/> 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.			Sample Specific Notes:
SS-145		9/29/20	1600	G	S	1	N	X	
SS-144			1615		S	1		X	
SS-143			1630	1625	S	1		X	
SS-142			1635		S	1		X	
SS-140			1725		S	1		X	
DUP-02			—		S	1		X	Duplicate
DUP-03			—		S	1		X	Duplicate
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							N		
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.							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"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months		
Special Instructions/QC Requirements & Comments: Standard TAT									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 135717 / 135719		Cooler Temp. (°C): Obs'd: 35		Corr'd: 4.0		Therm ID No.: gkl	
Relinquished by: Amy Siefker		Company: Arcadis		Date/Time: 9/30/20/1630		Received by: [Signature]		Company: EPA	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time: 9/30/20	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Date/Time: 9/30/20	

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10/14/2020

* Sample in Glass jar. Dlt 10/14/20



Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-65226-1

Login Number: 65226

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	135717/135719
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	
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.	False	Improper containers received.
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-65467-1

Client Project/Site: Marinette Supp Site Inv - 30015294.00020

For:

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

Attn: Lisa Rutkowski



Authorized for release by:
10/22/2020 12:30:08 PM

Sandie Fredrick, Project Manager II
(920)261-1660
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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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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Job ID: 320-65467-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative 320-65467-1

Comments

No additional comments.

Receipt

The samples were received on 10/9/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.6° C.

LCMS

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2 PFHxDA: 320-65467-1 and 320-65467-7. 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): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several IDA of the following samples: 320-65467-1, 320-65467-2, 320-65467-10, 320-65467-11, 320-65467-11[MSD] and 320-65467-13. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for several IDA: 320-65467-3, 320-65467-6 and 320-65467-13. 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): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-4:2 FTS and M2-6:2 FTS of the following samples: 320-65467-3, 320-65467-4, 320-65467-5, 320-65467-7, 320-65467-8, 320-65467-9, 320-65467-11[MS] and 320-65467-12. 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 M2-4:2 FTS of the following sample: 320-65467-6. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The matrix spike (MS) recoveries for Perfluorodecanesulfonic acid (PFDS) and Perfluorododecanesulfonic acid (PFDoS) of preparation batch 320-421181 and analytical batch 320-422523 were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 537 (modified): The matrix spike duplicate (MSD) recoveries for Perfluorododecanesulfonic acid (PFDoS) of preparation batch 320-421181 and analytical batch 320-422523 were outside control limits. Sample matrix interference are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 537 (modified): The matrix spike and matrix spike duplicate (MS/MSD) precision for Perfluorododecanoic acid (PFDoA) of preparation batch 320-421181 and analytical batch 320-422523 was outside control limits. Sample matrix interference are suspected. The MS and MSD recovery was within control limits.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2 FTS the following sample: 320-65467-15. 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 of d9-N-EtFOSE-M is above the method recommended limit for the following sample: CCV 320-423614/3. The associated analyte is within %D limits. 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.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Job ID: 320-65467-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Organic Prep

Method SHAKE: The following sample was yellow after final volume: 320-65467-11. preparation batch 320-421181 Method: PFC_IDA/Shake_Bath_14D Matrix: Solid

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with: preparation batch 320-422783. 320-422783 Method: 3535 PFC-W

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

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Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-174

Lab Sample ID: 320-65467-1

Date Collected: 10/06/20 16:00

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 90.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.091	J	0.21	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluoropentanoic acid (PFPeA)	0.15	J	0.21	0.082	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorohexanoic acid (PFHxA)	0.12	J	0.21	0.045	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.031	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorooctanoic acid (PFOA)	<0.21		0.21	0.092	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorononanoic acid (PFNA)	0.11	J	0.21	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorodecanoic acid (PFDA)	0.025	J	0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.071	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.054	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.058	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		0.21	0.047	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluoro-n-octadecanoic acid (PFOA)	<0.21		0.21	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.027	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorohexanesulfonic acid (PFHxS)	<0.21		0.21	0.033	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.042	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorooctanesulfonic acid (PFOS)	0.28	J	0.53	0.21	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.087	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.42	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.39	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
4:2 FTS	<2.1		2.1	0.39	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
8:2 FTS	<2.1		2.1	0.27	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
10:2 FTS	<0.21		0.21	0.053	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
NEtFOSA	<0.21		0.21	0.026	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
NMeFOSA	<0.21		0.21	0.044	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.064	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
NMeFOSE	<0.21		0.21	0.076	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
NEtFOSE	0.055	J	0.21	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
F-53B Major	<0.21		0.21	0.029	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/13/20 07:39	10/15/20 22:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	76		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C4 PFBA	97		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C5 PFPeA	93		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C2 PFHxA	106		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C4 PFHpA	102		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C4 PFOA	99		25 - 150	10/13/20 07:39	10/15/20 22:38	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-174

Lab Sample ID: 320-65467-1

Date Collected: 10/06/20 16:00

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 90.6

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	100		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C2 PFDA	92		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C2 PFUnA	73		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C2 PFDoA	45		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C2 PFTeDA	31		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C3 PFBS	95		25 - 150	10/13/20 07:39	10/15/20 22:38	1
18O2 PFHxS	100		25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C2 PFHxDA	21	*5	25 - 150	10/13/20 07:39	10/15/20 22:38	1
13C4 PFOS	93		25 - 150	10/13/20 07:39	10/15/20 22:38	1
d3-NMeFOSAA	67		25 - 150	10/13/20 07:39	10/15/20 22:38	1
d5-NEtFOSAA	57		25 - 150	10/13/20 07:39	10/15/20 22:38	1
M2-4:2 FTS	233	*5	25 - 150	10/13/20 07:39	10/15/20 22:38	1
M2-6:2 FTS	177	*5	25 - 150	10/13/20 07:39	10/15/20 22:38	1
M2-8:2 FTS	164	*5	25 - 150	10/13/20 07:39	10/15/20 22:38	1
d-N-MeFOSA-M	39		25 - 150	10/13/20 07:39	10/15/20 22:38	1
d-N-EtFOSA-M	34		25 - 150	10/13/20 07:39	10/15/20 22:38	1
d7-N-MeFOSE-M	20		10 - 120	10/13/20 07:39	10/15/20 22:38	1
d9-N-EtFOSE-M	19		10 - 120	10/13/20 07:39	10/15/20 22:38	1
13C3 HFPO-DA	96		25 - 150	10/13/20 07:39	10/15/20 22:38	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>
Percent Moisture	9.4		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	90.6		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	3700		1000	670	mg/Kg			10/19/20 18:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-173

Lab Sample ID: 320-65467-2

Date Collected: 10/07/20 08:40

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 88.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.14	J	0.22	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluoropentanoic acid (PFPeA)	0.14	J	0.22	0.083	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorohexanoic acid (PFHxA)	0.077	J	0.22	0.045	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluoroheptanoic acid (PFHpA)	0.050	J	0.22	0.031	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorooctanoic acid (PFOA)	0.25		0.22	0.093	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorononanoic acid (PFNA)	<0.22		0.22	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorodecanoic acid (PFDA)	<0.22		0.22	0.024	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluoroundecanoic acid (PFUnA)	<0.22		0.22	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorododecanoic acid (PFDoA)	<0.22		0.22	0.072	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorotridecanoic acid (PFTriA)	<0.22		0.22	0.055	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.058	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.22		0.22	0.048	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.027	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorohexanesulfonic acid (PFHxS)	<0.22		0.22	0.034	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.042	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorooctanesulfonic acid (PFOS)	0.30	J	0.54	0.22	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorooctanesulfonamide (FOSA)	<0.22		0.22	0.089	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.42	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.40	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
4:2 FTS	<2.2		2.2	0.40	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
6:2 FTS	<2.2		2.2	0.16	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
8:2 FTS	<2.2		2.2	0.27	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
10:2 FTS	<0.22		0.22	0.054	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
NEtFOSA	<0.22		0.22	0.026	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
NMeFOSA	<0.22		0.22	0.044	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.065	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
NMeFOSE	<0.22		0.22	0.077	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
NEtFOSE	0.097	J	0.22	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
F-53B Major	<0.22		0.22	0.029	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
F-53B Minor	<0.22		0.22	0.024	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
DONA	<0.22		0.22	0.019	ug/Kg	☼	10/13/20 07:39	10/15/20 22:47	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	88		25 - 150				10/13/20 07:39	10/15/20 22:47	1
13C4 PFBA	92		25 - 150				10/13/20 07:39	10/15/20 22:47	1
13C5 PFPeA	85		25 - 150				10/13/20 07:39	10/15/20 22:47	1
13C2 PFHxA	97		25 - 150				10/13/20 07:39	10/15/20 22:47	1
13C4 PFHpA	100		25 - 150				10/13/20 07:39	10/15/20 22:47	1
13C4 PFOA	102		25 - 150				10/13/20 07:39	10/15/20 22:47	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-173

Lab Sample ID: 320-65467-2

Date Collected: 10/07/20 08:40

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 88.7

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	10/13/20 07:39	10/15/20 22:47	1
13C2 PFDA	103		25 - 150	10/13/20 07:39	10/15/20 22:47	1
13C2 PFUnA	93		25 - 150	10/13/20 07:39	10/15/20 22:47	1
13C2 PFDoA	87		25 - 150	10/13/20 07:39	10/15/20 22:47	1
13C2 PFTeDA	62		25 - 150	10/13/20 07:39	10/15/20 22:47	1
13C3 PFBS	89		25 - 150	10/13/20 07:39	10/15/20 22:47	1
18O2 PFHxS	93		25 - 150	10/13/20 07:39	10/15/20 22:47	1
13C2 PFHxDA	47		25 - 150	10/13/20 07:39	10/15/20 22:47	1
13C4 PFOS	93		25 - 150	10/13/20 07:39	10/15/20 22:47	1
d3-NMeFOSAA	90		25 - 150	10/13/20 07:39	10/15/20 22:47	1
d5-NEtFOSAA	92		25 - 150	10/13/20 07:39	10/15/20 22:47	1
M2-4:2 FTS	225	*5	25 - 150	10/13/20 07:39	10/15/20 22:47	1
M2-6:2 FTS	201	*5	25 - 150	10/13/20 07:39	10/15/20 22:47	1
M2-8:2 FTS	201	*5	25 - 150	10/13/20 07:39	10/15/20 22:47	1
d-N-MeFOSA-M	67		25 - 150	10/13/20 07:39	10/15/20 22:47	1
d-N-EtFOSA-M	58		25 - 150	10/13/20 07:39	10/15/20 22:47	1
d7-N-MeFOSE-M	30		10 - 120	10/13/20 07:39	10/15/20 22:47	1
d9-N-EtFOSE-M	24		10 - 120	10/13/20 07:39	10/15/20 22:47	1
13C3 HFPO-DA	90		25 - 150	10/13/20 07:39	10/15/20 22:47	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>
Percent Moisture	11.3		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	88.7		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	2000		1000	670	mg/Kg			10/19/20 18:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-175

Lab Sample ID: 320-65467-3

Date Collected: 10/07/20 09:15

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 94.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.31		0.21	0.029	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluoropentanoic acid (PFPeA)	0.60		0.21	0.080	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorohexanoic acid (PFHxA)	0.29		0.21	0.043	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorooctanoic acid (PFOA)	0.59		0.21	0.089	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorononanoic acid (PFNA)	0.068	J	0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorodecanoic acid (PFDA)	0.033	J	0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.069	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.053	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.056	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		0.21	0.046	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.029	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.21		0.21	0.032	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.036	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.040	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorooctanesulfonic acid (PFOS)	0.33	J	0.52	0.21	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.085	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.40	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.38	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
4:2 FTS	<2.1		2.1	0.38	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
8:2 FTS	<2.1		2.1	0.26	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
10:2 FTS	<0.21		0.21	0.052	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
NMeFOSA	<0.21		0.21	0.042	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.062	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
NMeFOSE	<0.21		0.21	0.073	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
NEtFOSE	0.073	J	0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
F-53B Major	<0.21		0.21	0.028	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/13/20 07:39	10/15/20 22:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	40		25 - 150				10/13/20 07:39	10/15/20 22:57	1
13C4 PFBA	86		25 - 150				10/13/20 07:39	10/15/20 22:57	1
13C5 PFPeA	74		25 - 150				10/13/20 07:39	10/15/20 22:57	1
13C2 PFHxA	87		25 - 150				10/13/20 07:39	10/15/20 22:57	1
13C4 PFHpA	91		25 - 150				10/13/20 07:39	10/15/20 22:57	1
13C4 PFOA	88		25 - 150				10/13/20 07:39	10/15/20 22:57	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-175

Lab Sample ID: 320-65467-3

Date Collected: 10/07/20 09:15

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 94.3

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	75		25 - 150	10/13/20 07:39	10/15/20 22:57	1
13C2 PFDA	53		25 - 150	10/13/20 07:39	10/15/20 22:57	1
13C2 PFUnA	32		25 - 150	10/13/20 07:39	10/15/20 22:57	1
13C2 PFDoA	23	*5	25 - 150	10/13/20 07:39	10/15/20 22:57	1
13C2 PFTeDA	16	*5	25 - 150	10/13/20 07:39	10/15/20 22:57	1
13C3 PFBS	80		25 - 150	10/13/20 07:39	10/15/20 22:57	1
18O2 PFHxS	91		25 - 150	10/13/20 07:39	10/15/20 22:57	1
13C2 PFHxDA	14	*5	25 - 150	10/13/20 07:39	10/15/20 22:57	1
13C4 PFOS	67		25 - 150	10/13/20 07:39	10/15/20 22:57	1
d3-NMeFOSAA	25		25 - 150	10/13/20 07:39	10/15/20 22:57	1
d5-NEtFOSAA	24	*5	25 - 150	10/13/20 07:39	10/15/20 22:57	1
M2-4:2 FTS	214	*5	25 - 150	10/13/20 07:39	10/15/20 22:57	1
M2-6:2 FTS	173	*5	25 - 150	10/13/20 07:39	10/15/20 22:57	1
M2-8:2 FTS	111		25 - 150	10/13/20 07:39	10/15/20 22:57	1
d-N-MeFOSA-M	27		25 - 150	10/13/20 07:39	10/15/20 22:57	1
d-N-EtFOSA-M	22	*5	25 - 150	10/13/20 07:39	10/15/20 22:57	1
d7-N-MeFOSE-M	19		10 - 120	10/13/20 07:39	10/15/20 22:57	1
d9-N-EtFOSE-M	15		10 - 120	10/13/20 07:39	10/15/20 22:57	1
13C3 HFPO-DA	81		25 - 150	10/13/20 07:39	10/15/20 22:57	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>
Percent Moisture	5.7		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	94.3		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	5100		1000	670	mg/Kg			10/19/20 18:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-176
Date Collected: 10/07/20 09:35
Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-4
Matrix: Solid
Percent Solids: 92.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.11	J	0.21	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoropentanoic acid (PFPeA)	0.12	J	0.21	0.081	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorohexanoic acid (PFHxA)	0.085	J	0.21	0.044	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoroheptanoic acid (PFHpA)	0.075	J	0.21	0.031	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorooctanoic acid (PFOA)	0.48		0.21	0.091	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorononanoic acid (PFNA)	<0.21		0.21	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorodecanoic acid (PFDA)	<0.21		0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.071	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.054	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.057	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		0.21	0.047	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorohexanesulfonic acid (PFHxS)	<0.21		0.21	0.033	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.041	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorooctanesulfonic acid (PFOS)	0.25	J	0.53	0.21	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.087	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluoronanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.41	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.39	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
4:2 FTS	<2.1		2.1	0.39	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
8:2 FTS	<2.1		2.1	0.26	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
10:2 FTS	<0.21		0.21	0.053	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
NMeFOSA	<0.21		0.21	0.043	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.063	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
NMeFOSE	<0.21		0.21	0.075	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
NEtFOSE	0.054	J	0.21	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
F-53B Major	<0.21		0.21	0.029	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
HFPO-DA (GenX)	<0.26		0.26	0.12	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/13/20 07:39	10/15/20 23:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	54		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C4 PFBA	86		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C5 PFPeA	79		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C2 PFHxA	91		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C4 PFHpA	95		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C4 PFOA	94		25 - 150	10/13/20 07:39	10/15/20 23:06	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-176

Lab Sample ID: 320-65467-4

Date Collected: 10/07/20 09:35

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 92.7

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	91		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C2 PFDA	65		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C2 PFUnA	57		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C2 PFDoA	40		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C2 PFTeDA	39		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C3 PFBS	82		25 - 150	10/13/20 07:39	10/15/20 23:06	1
18O2 PFHxS	89		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C2 PFHxDA	32		25 - 150	10/13/20 07:39	10/15/20 23:06	1
13C4 PFOS	77		25 - 150	10/13/20 07:39	10/15/20 23:06	1
d3-NMeFOSAA	46		25 - 150	10/13/20 07:39	10/15/20 23:06	1
d5-NEtFOSAA	46		25 - 150	10/13/20 07:39	10/15/20 23:06	1
M2-4:2 FTS	232	*5	25 - 150	10/13/20 07:39	10/15/20 23:06	1
M2-6:2 FTS	189	*5	25 - 150	10/13/20 07:39	10/15/20 23:06	1
M2-8:2 FTS	135		25 - 150	10/13/20 07:39	10/15/20 23:06	1
d-N-MeFOSA-M	44		25 - 150	10/13/20 07:39	10/15/20 23:06	1
d-N-EtFOSA-M	43		25 - 150	10/13/20 07:39	10/15/20 23:06	1
d7-N-MeFOSE-M	26		10 - 120	10/13/20 07:39	10/15/20 23:06	1
d9-N-EtFOSE-M	24		10 - 120	10/13/20 07:39	10/15/20 23:06	1
13C3 HFPO-DA	83		25 - 150	10/13/20 07:39	10/15/20 23:06	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>
Percent Moisture	7.3		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	92.7		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	4400		1000	670	mg/Kg			10/19/20 18:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-177

Lab Sample ID: 320-65467-5

Date Collected: 10/07/20 10:30

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 90.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.24		0.22	0.031	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluoropentanoic acid (PFPeA)	0.30		0.22	0.084	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorohexanoic acid (PFHxA)	0.18	J	0.22	0.046	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluoroheptanoic acid (PFHpA)	0.16	J	0.22	0.032	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorooctanoic acid (PFOA)	0.45		0.22	0.094	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorononanoic acid (PFNA)	0.048	J	0.22	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorodecanoic acid (PFDA)	<0.22		0.22	0.024	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluoroundecanoic acid (PFUnA)	<0.22		0.22	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorododecanoic acid (PFDoA)	<0.22		0.22	0.073	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorotridecanoic acid (PFTriA)	<0.22		0.22	0.056	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorotetradecanoic acid (PFTeA)	<0.22		0.22	0.059	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.22		0.22	0.048	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.22		0.22	0.031	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorobutanesulfonic acid (PFBS)	<0.22		0.22	0.027	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorohexanesulfonic acid (PFHxS)	0.036	J	0.22	0.034	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.22		0.22	0.038	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorodecanesulfonic acid (PFDS)	<0.22		0.22	0.042	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorooctanesulfonic acid (PFOS)	0.31	J	0.54	0.22	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorooctanesulfonamide (FOSA)	<0.22		0.22	0.089	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluoropentanesulfonic acid (PFPeS)	<0.22		0.22	0.022	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorononanesulfonic acid (PFNS)	<0.22		0.22	0.022	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.2		2.2	0.42	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.2		2.2	0.40	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
4:2 FTS	<2.2		2.2	0.40	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
6:2 FTS	<2.2		2.2	0.16	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
8:2 FTS	<2.2		2.2	0.27	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
10:2 FTS	<0.22		0.22	0.054	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
NEtFOSA	<0.22		0.22	0.026	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
NMeFOSA	<0.22		0.22	0.045	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
Perfluorododecanesulfonic acid (PFDoS)	<0.22		0.22	0.065	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
NMeFOSE	<0.22		0.22	0.077	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
NEtFOSE	0.076	J	0.22	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
F-53B Major	<0.22		0.22	0.029	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
HFPO-DA (GenX)	<0.27		0.27	0.12	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
F-53B Minor	<0.22		0.22	0.024	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1
DONA	<0.22		0.22	0.020	ug/Kg	☼	10/13/20 07:39	10/15/20 23:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	51		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C4 PFBA	88		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C5 PFPeA	81		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C2 PFHxA	97		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C4 PFHpA	92		25 - 150	10/13/20 07:39	10/15/20 23:16	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-177

Lab Sample ID: 320-65467-5

Date Collected: 10/07/20 10:30

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 90.9

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	88		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C5 PFNA	74		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C2 PFDA	54		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C2 PFUnA	54		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C2 PFDoA	45		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C2 PFTeDA	43		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C3 PFBS	88		25 - 150	10/13/20 07:39	10/15/20 23:16	1
18O2 PFHxS	91		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C2 PFHxDA	37		25 - 150	10/13/20 07:39	10/15/20 23:16	1
13C4 PFOS	65		25 - 150	10/13/20 07:39	10/15/20 23:16	1
d3-NMeFOSAA	45		25 - 150	10/13/20 07:39	10/15/20 23:16	1
d5-NEtFOSAA	48		25 - 150	10/13/20 07:39	10/15/20 23:16	1
M2-4:2 FTS	231	*5	25 - 150	10/13/20 07:39	10/15/20 23:16	1
M2-6:2 FTS	192	*5	25 - 150	10/13/20 07:39	10/15/20 23:16	1
M2-8:2 FTS	123		25 - 150	10/13/20 07:39	10/15/20 23:16	1
d-N-MeFOSA-M	42		25 - 150	10/13/20 07:39	10/15/20 23:16	1
d-N-EtFOSA-M	38		25 - 150	10/13/20 07:39	10/15/20 23:16	1
d7-N-MeFOSE-M	26		10 - 120	10/13/20 07:39	10/15/20 23:16	1
d9-N-EtFOSE-M	26		10 - 120	10/13/20 07:39	10/15/20 23:16	1
13C3 HFPO-DA	86		25 - 150	10/13/20 07:39	10/15/20 23:16	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>
Percent Moisture	9.1		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	90.9		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	13000		1000	670	mg/Kg			10/19/20 18:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-178

Lab Sample ID: 320-65467-6

Date Collected: 10/07/20 10:50

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 85.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.26		0.23	0.032	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluoropentanoic acid (PFPeA)	0.39		0.23	0.087	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorohexanoic acid (PFHxA)	0.24		0.23	0.047	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluoroheptanoic acid (PFHpA)	0.32		0.23	0.033	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorooctanoic acid (PFOA)	0.29		0.23	0.097	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorononanoic acid (PFNA)	0.090	J	0.23	0.041	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorodecanoic acid (PFDA)	<0.23		0.23	0.025	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluoroundecanoic acid (PFUnA)	<0.23		0.23	0.041	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorododecanoic acid (PFDoA)	<0.23		0.23	0.075	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorotridecanoic acid (PFTriA)	<0.23		0.23	0.057	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorotetradecanoic acid (PFTeA)	<0.23		0.23	0.061	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.23		0.23	0.050	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.23		0.23	0.032	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.23		0.23	0.028	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorohexanesulfonic acid (PFHxS)	<0.23		0.23	0.035	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.23		0.23	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorodecanesulfonic acid (PFDS)	<0.23		0.23	0.044	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.56		0.56	0.23	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorooctanesulfonamide (FOSA)	<0.23		0.23	0.092	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluoropentanesulfonic acid (PFPeS)	<0.23		0.23	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorononanesulfonic acid (PFNS)	<0.23		0.23	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.3		2.3	0.44	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.3		2.3	0.42	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
4:2 FTS	<2.3		2.3	0.42	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
6:2 FTS	<2.3		2.3	0.17	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
8:2 FTS	<2.3		2.3	0.28	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
10:2 FTS	<0.23		0.23	0.056	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
NEtFOSA	<0.23		0.23	0.027	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
NMeFOSA	<0.23		0.23	0.046	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
Perfluorododecanesulfonic acid (PFDoS)	<0.23		0.23	0.068	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
NMeFOSE	<0.23		0.23	0.080	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
NEtFOSE	0.21	J	0.23	0.041	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
F-53B Major	<0.23		0.23	0.030	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
HFPO-DA (GenX)	<0.28		0.28	0.12	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
F-53B Minor	<0.23		0.23	0.025	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1
DONA	<0.23		0.23	0.020	ug/Kg	☼	10/13/20 07:39	10/15/20 23:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	36		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C4 PFBA	87		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C5 PFPeA	77		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C2 PFHxA	94		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C4 PFHpA	84		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C4 PFOA	69		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C5 PFNA	50		25 - 150	10/13/20 07:39	10/15/20 23:25	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-178

Lab Sample ID: 320-65467-6

Date Collected: 10/07/20 10:50

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 85.8

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	40		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C2 PFUnA	32		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C2 PFDoA	32		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C2 PFTeDA	28		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C3 PFBS	87		25 - 150	10/13/20 07:39	10/15/20 23:25	1
18O2 PFHxS	80		25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C2 PFHxDA	23	*5	25 - 150	10/13/20 07:39	10/15/20 23:25	1
13C4 PFOS	43		25 - 150	10/13/20 07:39	10/15/20 23:25	1
d3-NMeFOSAA	29		25 - 150	10/13/20 07:39	10/15/20 23:25	1
d5-NEtFOSAA	31		25 - 150	10/13/20 07:39	10/15/20 23:25	1
M2-4:2 FTS	208	*5	25 - 150	10/13/20 07:39	10/15/20 23:25	1
M2-6:2 FTS	147		25 - 150	10/13/20 07:39	10/15/20 23:25	1
M2-8:2 FTS	84		25 - 150	10/13/20 07:39	10/15/20 23:25	1
d-N-MeFOSA-M	24	*5	25 - 150	10/13/20 07:39	10/15/20 23:25	1
d-N-EtFOSA-M	23	*5	25 - 150	10/13/20 07:39	10/15/20 23:25	1
d7-N-MeFOSE-M	19		10 - 120	10/13/20 07:39	10/15/20 23:25	1
d9-N-EtFOSE-M	18		10 - 120	10/13/20 07:39	10/15/20 23:25	1
13C3 HFPO-DA	83		25 - 150	10/13/20 07:39	10/15/20 23:25	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>
Percent Moisture	14.2		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	85.8		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	26000		1000	670	mg/Kg			10/19/20 18:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-179

Lab Sample ID: 320-65467-7

Date Collected: 10/07/20 11:10

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 96.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.24		0.19	0.027	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluoropentanoic acid (PFPeA)	0.43		0.19	0.073	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorohexanoic acid (PFHxA)	0.24		0.19	0.040	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluoroheptanoic acid (PFHpA)	0.44		0.19	0.028	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorooctanoic acid (PFOA)	0.35		0.19	0.082	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorononanoic acid (PFNA)	0.15	J	0.19	0.034	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorodecanoic acid (PFDA)	0.044	J	0.19	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluoroundecanoic acid (PFUnA)	0.039	J	0.19	0.034	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorododecanoic acid (PFDoA)	<0.19		0.19	0.064	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorotridecanoic acid (PFTriA)	<0.19		0.19	0.048	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorotetradecanoic acid (PFTeA)	<0.19		0.19	0.051	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.19		0.19	0.042	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.19		0.19	0.027	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		0.19	0.024	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorohexanesulfonic acid (PFHxS)	<0.19		0.19	0.029	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.19		0.19	0.033	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorodecanesulfonic acid (PFDS)	<0.19		0.19	0.037	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorooctanesulfonic acid (PFOS)	0.30	J	0.47	0.19	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorooctanesulfonamide (FOSA)	<0.19		0.19	0.078	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluoropentanesulfonic acid (PFPeS)	<0.19		0.19	0.019	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorononanesulfonic acid (PFNS)	<0.19		0.19	0.019	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.9		1.9	0.37	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		1.9	0.35	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
4:2 FTS	<1.9		1.9	0.35	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
6:2 FTS	<1.9		1.9	0.14	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
8:2 FTS	<1.9		1.9	0.24	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
10:2 FTS	<0.19		0.19	0.047	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
NEtFOSA	<0.19		0.19	0.023	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
NMeFOSA	<0.19		0.19	0.039	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Perfluorododecanesulfonic acid (PFDoS)	<0.19		0.19	0.057	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
NMeFOSE	<0.19		0.19	0.067	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
NEtFOSE	0.15	J	0.19	0.034	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
F-53B Major	<0.19		0.19	0.026	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
HFPO-DA (GenX)	<0.24		0.24	0.10	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
F-53B Minor	<0.19		0.19	0.021	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
DONA	<0.19		0.19	0.017	ug/Kg	☼	10/13/20 07:39	10/15/20 23:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	50		25 - 150				10/13/20 07:39	10/15/20 23:53	1
13C4 PFBA	85		25 - 150				10/13/20 07:39	10/15/20 23:53	1
13C5 PFPeA	79		25 - 150				10/13/20 07:39	10/15/20 23:53	1
13C2 PFHxA	91		25 - 150				10/13/20 07:39	10/15/20 23:53	1
13C4 PFHpA	89		25 - 150				10/13/20 07:39	10/15/20 23:53	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-179

Lab Sample ID: 320-65467-7

Date Collected: 10/07/20 11:10

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 96.5

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	92		25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C5 PFNA	89		25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C2 PFDA	66		25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C2 PFUnA	49		25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C2 PFDoA	39		25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C2 PFTeDA	33		25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C3 PFBS	86		25 - 150	10/13/20 07:39	10/15/20 23:53	1
18O2 PFHxS	89		25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C2 PFHxDA	24	*5	25 - 150	10/13/20 07:39	10/15/20 23:53	1
13C4 PFOS	78		25 - 150	10/13/20 07:39	10/15/20 23:53	1
d3-NMeFOSAA	40		25 - 150	10/13/20 07:39	10/15/20 23:53	1
d5-NEtFOSAA	36		25 - 150	10/13/20 07:39	10/15/20 23:53	1
M2-4:2 FTS	223	*5	25 - 150	10/13/20 07:39	10/15/20 23:53	1
M2-6:2 FTS	182	*5	25 - 150	10/13/20 07:39	10/15/20 23:53	1
M2-8:2 FTS	126		25 - 150	10/13/20 07:39	10/15/20 23:53	1
d-N-MeFOSA-M	40		25 - 150	10/13/20 07:39	10/15/20 23:53	1
d-N-EtFOSA-M	36		25 - 150	10/13/20 07:39	10/15/20 23:53	1
d7-N-MeFOSE-M	27		10 - 120	10/13/20 07:39	10/15/20 23:53	1
d9-N-EtFOSE-M	24		10 - 120	10/13/20 07:39	10/15/20 23:53	1
13C3 HFPO-DA	84		25 - 150	10/13/20 07:39	10/15/20 23:53	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>
Percent Moisture	3.5		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	96.5		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	8000		1000	670	mg/Kg			10/19/20 18:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-180

Lab Sample ID: 320-65467-8

Date Collected: 10/07/20 11:30

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 93.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.28		0.20	0.027	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluoropentanoic acid (PFPeA)	0.37		0.20	0.075	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorohexanoic acid (PFHxA)	0.24		0.20	0.041	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluoroheptanoic acid (PFHpA)	0.20		0.20	0.028	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorooctanoic acid (PFOA)	0.36		0.20	0.084	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorononanoic acid (PFNA)	0.067	J	0.20	0.035	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorodecanoic acid (PFDA)	0.030	J	0.20	0.021	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.035	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.065	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.050	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.053	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.043	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.027	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.024	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.034	J	0.20	0.030	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.034	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.038	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorooctanesulfonic acid (PFOS)	0.27	J	0.49	0.20	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.080	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.38	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.36	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
4:2 FTS	<2.0		2.0	0.36	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
8:2 FTS	<2.0		2.0	0.24	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
10:2 FTS	<0.20		0.20	0.049	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
NEtFOSA	<0.20		0.20	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
NMeFOSA	<0.20		0.20	0.040	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.059	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
NMeFOSE	<0.20		0.20	0.069	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
NEtFOSE	<0.20		0.20	0.035	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
F-53B Major	<0.20		0.20	0.026	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
HFPO-DA (GenX)	<0.24		0.24	0.11	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
F-53B Minor	<0.20		0.20	0.021	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/13/20 07:39	10/16/20 00:03	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	54		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C4 PFBA	87		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C5 PFPeA	77		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C2 PFHxA	90		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C4 PFHpA	90		25 - 150	10/13/20 07:39	10/16/20 00:03	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-180

Lab Sample ID: 320-65467-8

Date Collected: 10/07/20 11:30

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 93.0

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	84		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C5 PFNA	72		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C2 PFDA	58		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C2 PFUnA	56		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C2 PFDoA	46		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C2 PFTeDA	44		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C3 PFBS	84		25 - 150	10/13/20 07:39	10/16/20 00:03	1
18O2 PFHxS	86		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C2 PFHxDA	40		25 - 150	10/13/20 07:39	10/16/20 00:03	1
13C4 PFOS	65		25 - 150	10/13/20 07:39	10/16/20 00:03	1
d3-NMeFOSAA	51		25 - 150	10/13/20 07:39	10/16/20 00:03	1
d5-NEtFOSAA	51		25 - 150	10/13/20 07:39	10/16/20 00:03	1
M2-4:2 FTS	214	*5	25 - 150	10/13/20 07:39	10/16/20 00:03	1
M2-6:2 FTS	189	*5	25 - 150	10/13/20 07:39	10/16/20 00:03	1
M2-8:2 FTS	131		25 - 150	10/13/20 07:39	10/16/20 00:03	1
d-N-MeFOSA-M	44		25 - 150	10/13/20 07:39	10/16/20 00:03	1
d-N-EtFOSA-M	43		25 - 150	10/13/20 07:39	10/16/20 00:03	1
d7-N-MeFOSE-M	26		10 - 120	10/13/20 07:39	10/16/20 00:03	1
d9-N-EtFOSE-M	26		10 - 120	10/13/20 07:39	10/16/20 00:03	1
13C3 HFPO-DA	81		25 - 150	10/13/20 07:39	10/16/20 00:03	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>
Percent Moisture	7.0		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	93.0		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	7000		1000	670	mg/Kg			10/19/20 19:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-181

Lab Sample ID: 320-65467-9

Date Collected: 10/07/20 11:50

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 90.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.19	J	0.21	0.029	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluoropentanoic acid (PFPeA)	0.28		0.21	0.080	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorohexanoic acid (PFHxA)	0.18	J	0.21	0.043	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluoroheptanoic acid (PFHpA)	0.17	J	0.21	0.030	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorooctanoic acid (PFOA)	0.48		0.21	0.089	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorononanoic acid (PFNA)	0.046	J	0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorodecanoic acid (PFDA)	0.025	J	0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluoroundecanoic acid (PFUnA)	<0.21		0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorododecanoic acid (PFDoA)	<0.21		0.21	0.069	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorotridecanoic acid (PFTriA)	<0.21		0.21	0.053	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorotetradecanoic acid (PFTeA)	<0.21		0.21	0.056	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.21		0.21	0.046	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.21		0.21	0.029	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorobutanesulfonic acid (PFBS)	<0.21		0.21	0.026	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorohexanesulfonic acid (PFHxS)	<0.21		0.21	0.032	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.21		0.21	0.036	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorodecanesulfonic acid (PFDS)	<0.21		0.21	0.040	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorooctanesulfonic acid (PFOS)	0.23	J	0.52	0.21	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorooctanesulfonamide (FOSA)	<0.21		0.21	0.085	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluoropentanesulfonic acid (PFPeS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorononanesulfonic acid (PFNS)	<0.21		0.21	0.021	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.1		2.1	0.40	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.1		2.1	0.38	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
4:2 FTS	<2.1		2.1	0.38	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
6:2 FTS	<2.1		2.1	0.16	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
8:2 FTS	<2.1		2.1	0.26	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
10:2 FTS	<0.21		0.21	0.052	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
NEtFOSA	<0.21		0.21	0.025	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
NMeFOSA	<0.21		0.21	0.042	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Perfluorododecanesulfonic acid (PFDoS)	<0.21		0.21	0.062	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
NMeFOSE	<0.21		0.21	0.073	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
NEtFOSE	<0.21		0.21	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
F-53B Major	<0.21		0.21	0.028	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
F-53B Minor	<0.21		0.21	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
DONA	<0.21		0.21	0.019	ug/Kg	☼	10/13/20 07:39	10/16/20 00:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	51		25 - 150				10/13/20 07:39	10/16/20 00:12	1
13C4 PFBA	89		25 - 150				10/13/20 07:39	10/16/20 00:12	1
13C5 PFPeA	77		25 - 150				10/13/20 07:39	10/16/20 00:12	1
13C2 PFHxA	93		25 - 150				10/13/20 07:39	10/16/20 00:12	1
13C4 PFHpA	93		25 - 150				10/13/20 07:39	10/16/20 00:12	1
13C4 PFOA	93		25 - 150				10/13/20 07:39	10/16/20 00:12	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-181

Lab Sample ID: 320-65467-9

Date Collected: 10/07/20 11:50

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 90.3

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	73		25 - 150	10/13/20 07:39	10/16/20 00:12	1
13C2 PFDA	56		25 - 150	10/13/20 07:39	10/16/20 00:12	1
13C2 PFUnA	50		25 - 150	10/13/20 07:39	10/16/20 00:12	1
13C2 PFDoA	42		25 - 150	10/13/20 07:39	10/16/20 00:12	1
13C2 PFTeDA	39		25 - 150	10/13/20 07:39	10/16/20 00:12	1
13C3 PFBS	81		25 - 150	10/13/20 07:39	10/16/20 00:12	1
18O2 PFHxS	88		25 - 150	10/13/20 07:39	10/16/20 00:12	1
13C2 PFHxDA	35		25 - 150	10/13/20 07:39	10/16/20 00:12	1
13C4 PFOS	68		25 - 150	10/13/20 07:39	10/16/20 00:12	1
d3-NMeFOSAA	37		25 - 150	10/13/20 07:39	10/16/20 00:12	1
d5-NEtFOSAA	39		25 - 150	10/13/20 07:39	10/16/20 00:12	1
M2-4:2 FTS	218	*5	25 - 150	10/13/20 07:39	10/16/20 00:12	1
M2-6:2 FTS	186	*5	25 - 150	10/13/20 07:39	10/16/20 00:12	1
M2-8:2 FTS	114		25 - 150	10/13/20 07:39	10/16/20 00:12	1
d-N-MeFOSA-M	45		25 - 150	10/13/20 07:39	10/16/20 00:12	1
d-N-EtFOSA-M	42		25 - 150	10/13/20 07:39	10/16/20 00:12	1
d7-N-MeFOSE-M	27		10 - 120	10/13/20 07:39	10/16/20 00:12	1
d9-N-EtFOSE-M	30		10 - 120	10/13/20 07:39	10/16/20 00:12	1
13C3 HFPO-DA	85		25 - 150	10/13/20 07:39	10/16/20 00:12	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>
Percent Moisture	9.7		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	90.3		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	10000		1000	670	mg/Kg			10/19/20 19:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-182

Lab Sample ID: 320-65467-10

Date Collected: 10/07/20 12:05

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 91.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.44		0.20	0.029	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluoropentanoic acid (PFPeA)	0.61		0.20	0.079	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorohexanoic acid (PFHxA)	0.41		0.20	0.043	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluoroheptanoic acid (PFHpA)	0.37		0.20	0.030	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorooctanoic acid (PFOA)	0.88		0.20	0.088	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorononanoic acid (PFNA)	0.098	J	0.20	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorodecanoic acid (PFDA)	0.042	J	0.20	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluoroundecanoic acid (PFUnA)	0.050	J	0.20	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.069	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.052	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.055	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.045	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.029	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorobutanesulfonic acid (PFBS)	0.036	J	0.20	0.026	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorohexanesulfonic acid (PFHxS)	0.084	J	0.20	0.032	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.036	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.040	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorooctanesulfonic acid (PFOS)	0.23	J	0.51	0.20	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.084	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluoropentanesulfonic acid (PFPeS)	0.024	J	0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.40	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.38	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
4:2 FTS	<2.0		2.0	0.38	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
8:2 FTS	<2.0		2.0	0.26	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
10:2 FTS	<0.20		0.20	0.051	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
NEtFOSA	<0.20		0.20	0.025	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
NMeFOSA	<0.20		0.20	0.042	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.061	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
NMeFOSE	<0.20		0.20	0.073	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
NEtFOSE	0.060	J	0.20	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
F-53B Major	<0.20		0.20	0.028	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
F-53B Minor	<0.20		0.20	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
DONA	0.022	J	0.20	0.018	ug/Kg	☼	10/13/20 07:39	10/16/20 00:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	57		25 - 150				10/13/20 07:39	10/16/20 00:21	1
13C4 PFBA	90		25 - 150				10/13/20 07:39	10/16/20 00:21	1
13C5 PFPeA	81		25 - 150				10/13/20 07:39	10/16/20 00:21	1
13C2 PFHxA	97		25 - 150				10/13/20 07:39	10/16/20 00:21	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-182

Lab Sample ID: 320-65467-10

Date Collected: 10/07/20 12:05

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 91.0

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	96		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C4 PFOA	98		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C5 PFNA	92		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C2 PFDA	79		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C2 PFUnA	63		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C2 PFDoA	60		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C2 PFTeDA	52		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C3 PFBS	87		25 - 150	10/13/20 07:39	10/16/20 00:21	1
18O2 PFHxS	96		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C2 PFHxDA	47		25 - 150	10/13/20 07:39	10/16/20 00:21	1
13C4 PFOS	83		25 - 150	10/13/20 07:39	10/16/20 00:21	1
d3-NMeFOSAA	55		25 - 150	10/13/20 07:39	10/16/20 00:21	1
d5-NEtFOSAA	57		25 - 150	10/13/20 07:39	10/16/20 00:21	1
M2-4:2 FTS	234	*5	25 - 150	10/13/20 07:39	10/16/20 00:21	1
M2-6:2 FTS	204	*5	25 - 150	10/13/20 07:39	10/16/20 00:21	1
M2-8:2 FTS	164	*5	25 - 150	10/13/20 07:39	10/16/20 00:21	1
d-N-MeFOSA-M	47		25 - 150	10/13/20 07:39	10/16/20 00:21	1
d-N-EtFOSA-M	42		25 - 150	10/13/20 07:39	10/16/20 00:21	1
d7-N-MeFOSE-M	28		10 - 120	10/13/20 07:39	10/16/20 00:21	1
d9-N-EtFOSE-M	25		10 - 120	10/13/20 07:39	10/16/20 00:21	1
13C3 HFPO-DA	86		25 - 150	10/13/20 07:39	10/16/20 00:21	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>
Percent Moisture	9.0		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	91.0		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	8500		1000	670	mg/Kg			10/19/20 19:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-141

Lab Sample ID: 320-65467-11

Date Collected: 10/07/20 12:25

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 92.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.22		0.20	0.029	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluoropentanoic acid (PFPeA)	0.66		0.20	0.079	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorohexanoic acid (PFHxA)	0.49		0.20	0.043	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluoroheptanoic acid (PFHpA)	0.42		0.20	0.030	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorooctanoic acid (PFOA)	0.94		0.20	0.088	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorononanoic acid (PFNA)	0.91		0.20	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorodecanoic acid (PFDA)	0.31		0.20	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluoroundecanoic acid (PFUnA)	0.34		0.20	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorododecanoic acid (PFDoA)	<0.20	F2	0.20	0.069	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.052	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.055	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.045	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.029	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.026	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorohexanesulfonic acid (PFHxS)	0.076	J	0.20	0.032	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.036	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorodecanesulfonic acid (PFDS)	<0.20	F1	0.20	0.040	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorooctanesulfonic acid (PFOS)	2.1		0.51	0.20	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.084	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.40	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.38	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
4:2 FTS	<2.0		2.0	0.38	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
8:2 FTS	<2.0		2.0	0.26	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
10:2 FTS	<0.20		0.20	0.051	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
NEtFOSA	<0.20		0.20	0.025	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
NMeFOSA	<0.20		0.20	0.042	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20	F1	0.20	0.061	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
NMeFOSE	<0.20		0.20	0.073	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
NEtFOSE	0.064	J	0.20	0.037	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
F-53B Major	<0.20		0.20	0.028	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
HFPO-DA (GenX)	<0.26		0.26	0.11	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
F-53B Minor	<0.20		0.20	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/13/20 07:39	10/16/20 00:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	77		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C4 PFBA	88		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C5 PFPeA	75		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C2 PFHxA	102		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C4 PFHpA	95		25 - 150	10/13/20 07:39	10/16/20 00:31	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-141

Lab Sample ID: 320-65467-11

Date Collected: 10/07/20 12:25

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 92.5

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	97		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C5 PFNA	101		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C2 PFDA	101		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C2 PFUnA	85		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C2 PFDoA	75		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C2 PFTeDA	49		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C3 PFBS	87		25 - 150	10/13/20 07:39	10/16/20 00:31	1
18O2 PFHxS	98		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C2 PFHxDA	42		25 - 150	10/13/20 07:39	10/16/20 00:31	1
13C4 PFOS	92		25 - 150	10/13/20 07:39	10/16/20 00:31	1
d3-NMeFOSAA	80		25 - 150	10/13/20 07:39	10/16/20 00:31	1
d5-NEtFOSAA	76		25 - 150	10/13/20 07:39	10/16/20 00:31	1
M2-4:2 FTS	245	*5	25 - 150	10/13/20 07:39	10/16/20 00:31	1
M2-6:2 FTS	209	*5	25 - 150	10/13/20 07:39	10/16/20 00:31	1
M2-8:2 FTS	212	*5	25 - 150	10/13/20 07:39	10/16/20 00:31	1
d-N-MeFOSA-M	52		25 - 150	10/13/20 07:39	10/16/20 00:31	1
d-N-EtFOSA-M	47		25 - 150	10/13/20 07:39	10/16/20 00:31	1
d7-N-MeFOSE-M	29		10 - 120	10/13/20 07:39	10/16/20 00:31	1
d9-N-EtFOSE-M	27		10 - 120	10/13/20 07:39	10/16/20 00:31	1
13C3 HFPO-DA	89		25 - 150	10/13/20 07:39	10/16/20 00:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.5		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	92.5		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	8900		1000	670	mg/Kg			10/19/20 19:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-140

Lab Sample ID: 320-65467-12

Date Collected: 10/07/20 12:45

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 84.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.27		0.23	0.032	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluoropentanoic acid (PFPeA)	1.0		0.23	0.087	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorohexanoic acid (PFHxA)	1.2		0.23	0.047	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluoroheptanoic acid (PFHpA)	1.4		0.23	0.033	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorooctanoic acid (PFOA)	4.9		0.23	0.097	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorononanoic acid (PFNA)	3.7		0.23	0.041	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorodecanoic acid (PFDA)	2.2		0.23	0.025	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluoroundecanoic acid (PFUnA)	1.9		0.23	0.041	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorododecanoic acid (PFDoA)	0.18	J	0.23	0.076	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorotridecanoic acid (PFTriA)	0.15	J	0.23	0.058	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorotetradecanoic acid (PFTeA)	0.071	J	0.23	0.061	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.23		0.23	0.050	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.23		0.23	0.032	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorobutanesulfonic acid (PFBS)	<0.23		0.23	0.028	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorohexanesulfonic acid (PFHxS)	1.1		0.23	0.035	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.072	J	0.23	0.040	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorodecanesulfonic acid (PFDS)	<0.23		0.23	0.044	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorooctanesulfonic acid (PFOS)	9.4		0.56	0.23	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorooctanesulfonamide (FOSA)	0.23		0.23	0.093	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluoropentanesulfonic acid (PFPeS)	<0.23		0.23	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorononanesulfonic acid (PFNS)	<0.23		0.23	0.023	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.3		2.3	0.44	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.3		2.3	0.42	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
4:2 FTS	<2.3		2.3	0.42	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
6:2 FTS	0.22	J	2.3	0.17	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
8:2 FTS	0.64	J	2.3	0.28	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
10:2 FTS	0.37		0.23	0.056	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
NEtFOSA	<0.23		0.23	0.027	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
NMeFOSA	<0.23		0.23	0.046	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
Perfluorododecanesulfonic acid (PFDoS)	<0.23		0.23	0.068	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
NMeFOSE	<0.23		0.23	0.080	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
NEtFOSE	0.18	J	0.23	0.041	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
F-53B Major	<0.23		0.23	0.030	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
HFPO-DA (GenX)	<0.28		0.28	0.12	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
F-53B Minor	<0.23		0.23	0.025	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1
DONA	<0.23		0.23	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 00:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	51		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C4 PFBA	90		25 - 150	10/13/20 07:39	10/16/20 00:59	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-140

Lab Sample ID: 320-65467-12

Date Collected: 10/07/20 12:45

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 84.0

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 PFPeA	81		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C2 PFHxA	98		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C4 PFHpA	95		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C4 PFOA	90		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C5 PFNA	77		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C2 PFDA	60		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C2 PFUnA	51		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C2 PFDoA	42		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C2 PFTeDA	41		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C3 PFBS	91		25 - 150	10/13/20 07:39	10/16/20 00:59	1
18O2 PFHxS	94		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C2 PFHxDA	33		25 - 150	10/13/20 07:39	10/16/20 00:59	1
13C4 PFOS	67		25 - 150	10/13/20 07:39	10/16/20 00:59	1
d3-NMeFOSAA	43		25 - 150	10/13/20 07:39	10/16/20 00:59	1
d5-NEtFOSAA	43		25 - 150	10/13/20 07:39	10/16/20 00:59	1
M2-4:2 FTS	246	*5	25 - 150	10/13/20 07:39	10/16/20 00:59	1
M2-6:2 FTS	192	*5	25 - 150	10/13/20 07:39	10/16/20 00:59	1
M2-8:2 FTS	118		25 - 150	10/13/20 07:39	10/16/20 00:59	1
d-N-MeFOSA-M	44		25 - 150	10/13/20 07:39	10/16/20 00:59	1
d-N-EtFOSA-M	40		25 - 150	10/13/20 07:39	10/16/20 00:59	1
d7-N-MeFOSE-M	29		10 - 120	10/13/20 07:39	10/16/20 00:59	1
d9-N-EtFOSE-M	25		10 - 120	10/13/20 07:39	10/16/20 00:59	1
13C3 HFPO-DA	90		25 - 150	10/13/20 07:39	10/16/20 00:59	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>
Percent Moisture	16.0		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	84.0		0.1	0.1	%			10/12/20 09:45	1
Total Organic Carbon	12000		1000	670	mg/Kg			10/19/20 19:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: DUP-04

Lab Sample ID: 320-65467-13

Date Collected: 10/07/20 00:00

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 94.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.35		0.20	0.028	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluoropentanoic acid (PFPeA)	0.70		0.20	0.077	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorohexanoic acid (PFHxA)	0.33		0.20	0.042	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluoroheptanoic acid (PFHpA)	0.24		0.20	0.029	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorooctanoic acid (PFOA)	0.58		0.20	0.086	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorononanoic acid (PFNA)	0.066	J	0.20	0.036	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorodecanoic acid (PFDA)	0.050	J	0.20	0.022	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.044	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorohexanesulfonic acid (PFHxS)	0.034	J	0.20	0.031	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorooctanesulfonic acid (PFOS)	0.34	J	0.50	0.20	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
NEtFOSE	0.050	J	0.20	0.036	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
F-53B Major	<0.20		0.20	0.027	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1
DONA	<0.20		0.20	0.018	ug/Kg	☼	10/13/20 07:39	10/16/20 01:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	64		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C4 PFBA	92		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C5 PFPeA	77		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C2 PFHxA	91		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C4 PFHpA	93		25 - 150	10/13/20 07:39	10/16/20 01:09	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: DUP-04

Lab Sample ID: 320-65467-13

Date Collected: 10/07/20 00:00

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 94.8

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>
13C4 PFOA	90		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C5 PFNA	79		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C2 PFDA	67		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C2 PFUnA	58		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C2 PFDoA	53		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C2 PFTeDA	46		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C3 PFBS	79		25 - 150	10/13/20 07:39	10/16/20 01:09	1
18O2 PFHxS	88		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C2 PFHxDA	41		25 - 150	10/13/20 07:39	10/16/20 01:09	1
13C4 PFOS	69		25 - 150	10/13/20 07:39	10/16/20 01:09	1
d3-NMeFOSAA	54		25 - 150	10/13/20 07:39	10/16/20 01:09	1
d5-NEtFOSAA	60		25 - 150	10/13/20 07:39	10/16/20 01:09	1
M2-4:2 FTS	235	*5	25 - 150	10/13/20 07:39	10/16/20 01:09	1
M2-6:2 FTS	200	*5	25 - 150	10/13/20 07:39	10/16/20 01:09	1
M2-8:2 FTS	151	*5	25 - 150	10/13/20 07:39	10/16/20 01:09	1
d-N-MeFOSA-M	48		25 - 150	10/13/20 07:39	10/16/20 01:09	1
d-N-EtFOSA-M	46		25 - 150	10/13/20 07:39	10/16/20 01:09	1
d7-N-MeFOSE-M	32		10 - 120	10/13/20 07:39	10/16/20 01:09	1
d9-N-EtFOSE-M	30		10 - 120	10/13/20 07:39	10/16/20 01:09	1
13C3 HFPO-DA	85		25 - 150	10/13/20 07:39	10/16/20 01:09	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>
Percent Moisture	5.2		0.1	0.1	%			10/12/20 09:45	1
Percent Solids	94.8		0.1	0.1	%			10/12/20 09:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: Field Blank-10-07-2020

Lab Sample ID: 320-65467-14

Date Collected: 10/07/20 13:00

Matrix: Water

Date Received: 10/09/20 09:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.5		4.5	2.2	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluoropentanoic acid (PFPeA)	<1.8		1.8	0.44	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorohexanoic acid (PFHxA)	<1.8		1.8	0.53	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluoroheptanoic acid (PFHpA)	<1.8		1.8	0.23	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorooctanoic acid (PFOA)	<1.8		1.8	0.77	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorononanoic acid (PFNA)	<1.8		1.8	0.24	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.28	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.50	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.66	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.81	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.85	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorobutanesulfonic acid (PFBS)	<1.8		1.8	0.18	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.27	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorohexanesulfonic acid (PFHxS)	<1.8		1.8	0.52	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	0.49	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.88	ng/L		10/17/20 04:23	10/21/20 16:48	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.89	ng/L		10/17/20 04:23	10/21/20 16:48	1
NEtFOSA	<1.8		1.8	0.79	ng/L		10/17/20 04:23	10/21/20 16:48	1
NMeFOSA	<1.8		1.8	0.39	ng/L		10/17/20 04:23	10/21/20 16:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.5		4.5	1.1	ng/L		10/17/20 04:23	10/21/20 16:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.5		4.5	1.2	ng/L		10/17/20 04:23	10/21/20 16:48	1
NMeFOSE	<3.6		3.6	1.3	ng/L		10/17/20 04:23	10/21/20 16:48	1
NEtFOSE	<1.8		1.8	0.77	ng/L		10/17/20 04:23	10/21/20 16:48	1
4:2 FTS	<1.8		1.8	0.22	ng/L		10/17/20 04:23	10/21/20 16:48	1
6:2 FTS	<4.5		4.5	2.3	ng/L		10/17/20 04:23	10/21/20 16:48	1
8:2 FTS	<1.8		1.8	0.42	ng/L		10/17/20 04:23	10/21/20 16:48	1
10:2 FTS	<1.8		1.8	0.61	ng/L		10/17/20 04:23	10/21/20 16:48	1
DONA	<1.8		1.8	0.36	ng/L		10/17/20 04:23	10/21/20 16:48	1
HFPO-DA (GenX)	<3.6		3.6	1.4	ng/L		10/17/20 04:23	10/21/20 16:48	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/17/20 04:23	10/21/20 16:48	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/17/20 04:23	10/21/20 16:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	79		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C5 PFPeA	84		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C2 PFHxA	87		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C4 PFHpA	96		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C4 PFOA	95		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C5 PFNA	98		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C2 PFDA	92		25 - 150	10/17/20 04:23	10/21/20 16:48	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: Field Blank-10-07-2020

Lab Sample ID: 320-65467-14

Date Collected: 10/07/20 13:00

Matrix: Water

Date Received: 10/09/20 09:30

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	101		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C2 PFDoA	86		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C2 PFTeDA	88		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C2 PFHxDA	84		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C3 PFBS	82		25 - 150	10/17/20 04:23	10/21/20 16:48	1
18O2 PFHxS	87		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C4 PFOS	90		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C8 FOSA	85		25 - 150	10/17/20 04:23	10/21/20 16:48	1
d3-NMeFOSAA	109		25 - 150	10/17/20 04:23	10/21/20 16:48	1
d5-NEtFOSAA	123		25 - 150	10/17/20 04:23	10/21/20 16:48	1
d-N-MeFOSA-M	69		20 - 150	10/17/20 04:23	10/21/20 16:48	1
d-N-EtFOSA-M	52		20 - 150	10/17/20 04:23	10/21/20 16:48	1
d7-N-MeFOSE-M	49		10 - 120	10/17/20 04:23	10/21/20 16:48	1
d9-N-EtFOSE-M	42		10 - 120	10/17/20 04:23	10/21/20 16:48	1
M2-4:2 FTS	132		25 - 150	10/17/20 04:23	10/21/20 16:48	1
M2-6:2 FTS	133		25 - 150	10/17/20 04:23	10/21/20 16:48	1
M2-8:2 FTS	147		25 - 150	10/17/20 04:23	10/21/20 16:48	1
13C3 HFPO-DA	86		25 - 150	10/17/20 04:23	10/21/20 16:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: EB-10-07-2020

Lab Sample ID: 320-65467-15

Date Collected: 10/07/20 13:05

Matrix: Water

Date Received: 10/09/20 09:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.5		4.5	2.2	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluoropentanoic acid (PFPeA)	<1.8		1.8	0.45	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorohexanoic acid (PFHxA)	<1.8		1.8	0.53	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluoroheptanoic acid (PFHpA)	<1.8		1.8	0.23	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorooctanoic acid (PFOA)	<1.8		1.8	0.77	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorononanoic acid (PFNA)	<1.8		1.8	0.25	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.28	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.50	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.66	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.91	J B	1.8	0.81	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.85	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorobutanesulfonic acid (PFBS)	<1.8		1.8	0.18	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.27	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorohexanesulfonic acid (PFHxS)	<1.8		1.8	0.52	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	0.49	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.88	ng/L		10/17/20 04:23	10/21/20 16:57	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.89	ng/L		10/17/20 04:23	10/21/20 16:57	1
NEtFOSA	<1.8		1.8	0.79	ng/L		10/17/20 04:23	10/21/20 16:57	1
NMeFOSA	<1.8		1.8	0.39	ng/L		10/17/20 04:23	10/21/20 16:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.5		4.5	1.1	ng/L		10/17/20 04:23	10/21/20 16:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.5		4.5	1.2	ng/L		10/17/20 04:23	10/21/20 16:57	1
NMeFOSE	<3.6		3.6	1.3	ng/L		10/17/20 04:23	10/21/20 16:57	1
NEtFOSE	<1.8		1.8	0.77	ng/L		10/17/20 04:23	10/21/20 16:57	1
4:2 FTS	<1.8		1.8	0.22	ng/L		10/17/20 04:23	10/21/20 16:57	1
6:2 FTS	<4.5		4.5	2.3	ng/L		10/17/20 04:23	10/21/20 16:57	1
8:2 FTS	<1.8		1.8	0.42	ng/L		10/17/20 04:23	10/21/20 16:57	1
10:2 FTS	<1.8		1.8	0.61	ng/L		10/17/20 04:23	10/21/20 16:57	1
DONA	<1.8		1.8	0.36	ng/L		10/17/20 04:23	10/21/20 16:57	1
HFPO-DA (GenX)	<3.6		3.6	1.4	ng/L		10/17/20 04:23	10/21/20 16:57	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/17/20 04:23	10/21/20 16:57	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/17/20 04:23	10/21/20 16:57	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	77		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C5 PFPeA	85		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C2 PFHxA	83		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C4 PFHpA	95		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C4 PFOA	97		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C5 PFNA	106		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C2 PFDA	92		25 - 150	10/17/20 04:23	10/21/20 16:57	1

Eurofins TestAmerica, Sacramento

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: EB-10-07-2020

Lab Sample ID: 320-65467-15

Date Collected: 10/07/20 13:05

Matrix: Water

Date Received: 10/09/20 09:30

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	99		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C2 PFDoA	91		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C2 PFTeDA	71		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C2 PFHxDA	72		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C3 PFBS	81		25 - 150	10/17/20 04:23	10/21/20 16:57	1
18O2 PFHxS	88		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C4 PFOS	92		25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C8 FOSA	88		25 - 150	10/17/20 04:23	10/21/20 16:57	1
d3-NMeFOSAA	108		25 - 150	10/17/20 04:23	10/21/20 16:57	1
d5-NEtFOSAA	128		25 - 150	10/17/20 04:23	10/21/20 16:57	1
d-N-MeFOSA-M	69		20 - 150	10/17/20 04:23	10/21/20 16:57	1
d-N-EtFOSA-M	55		20 - 150	10/17/20 04:23	10/21/20 16:57	1
d7-N-MeFOSE-M	51		10 - 120	10/17/20 04:23	10/21/20 16:57	1
d9-N-EtFOSE-M	45		10 - 120	10/17/20 04:23	10/21/20 16:57	1
M2-4:2 FTS	137		25 - 150	10/17/20 04:23	10/21/20 16:57	1
M2-6:2 FTS	133		25 - 150	10/17/20 04:23	10/21/20 16:57	1
M2-8:2 FTS	154	*5	25 - 150	10/17/20 04:23	10/21/20 16:57	1
13C3 HFPO-DA	84		25 - 150	10/17/20 04:23	10/21/20 16:57	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFOSA (25-150)	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)
320-65467-1	SS-174	76	97	93	106	102	99	100	92
320-65467-2	SS-173	88	92	85	97	100	102	102	103
320-65467-3	SS-175	40	86	74	87	91	88	75	53
320-65467-4	SS-176	54	86	79	91	95	94	91	65
320-65467-5	SS-177	51	88	81	97	92	88	74	54
320-65467-6	SS-178	36	87	77	94	84	69	50	40
320-65467-7	SS-179	50	85	79	91	89	92	89	66
320-65467-8	SS-180	54	87	77	90	90	84	72	58
320-65467-9	SS-181	51	89	77	93	93	93	73	56
320-65467-10	SS-182	57	90	81	97	96	98	92	79
320-65467-11	SS-141	77	88	75	102	95	97	101	101
320-65467-11 MS	SS-141	44	90	77	95	94	84	71	54
320-65467-11 MSD	SS-141	61	88	77	97	96	89	94	77
320-65467-12	SS-140	51	90	81	98	95	90	77	60
320-65467-13	DUP-04	64	92	77	91	93	90	79	67
LCS 320-421181/2-A	Lab Control Sample	91	96	96	103	107	102	109	101
MB 320-421181/1-A	Method Blank	83	91	94	97	100	99	99	90

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFOA (25-150)	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFHxDA (25-150)	PFOS (25-150)	d3NMFOS (25-150)
320-65467-1	SS-174	73	45	31	95	100	21 *5	93	67
320-65467-2	SS-173	93	87	62	89	93	47	93	90
320-65467-3	SS-175	32	23 *5	16 *5	80	91	14 *5	67	25
320-65467-4	SS-176	57	40	39	82	89	32	77	46
320-65467-5	SS-177	54	45	43	88	91	37	65	45
320-65467-6	SS-178	32	32	28	87	80	23 *5	43	29
320-65467-7	SS-179	49	39	33	86	89	24 *5	78	40
320-65467-8	SS-180	56	46	44	84	86	40	65	51
320-65467-9	SS-181	50	42	39	81	88	35	68	37
320-65467-10	SS-182	63	60	52	87	96	47	83	55
320-65467-11	SS-141	85	75	49	87	98	42	92	80
320-65467-11 MS	SS-141	44	41	38	83	91	29	63	41
320-65467-11 MSD	SS-141	66	71	52	84	97	49	82	60
320-65467-12	SS-140	51	42	41	91	94	33	67	43
320-65467-13	DUP-04	58	53	46	79	88	41	69	54
LCS 320-421181/2-A	Lab Control Sample	101	96	101	99	105	98	101	104
MB 320-421181/1-A	Method Blank	94	98	94	94	96	77	98	100

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	dMeFOSA (25-150)	dEtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)
320-65467-1	SS-174	57	233 *5	177 *5	164 *5	39	34	20	19
320-65467-2	SS-173	92	225 *5	201 *5	201 *5	67	58	30	24
320-65467-3	SS-175	24 *5	214 *5	173 *5	111	27	22 *5	19	15
320-65467-4	SS-176	46	232 *5	189 *5	135	44	43	26	24
320-65467-5	SS-177	48	231 *5	192 *5	123	42	38	26	26
320-65467-6	SS-178	31	208 *5	147	84	24 *5	23 *5	19	18
320-65467-7	SS-179	36	223 *5	182 *5	126	40	36	27	24
320-65467-8	SS-180	51	214 *5	189 *5	131	44	43	26	26
320-65467-9	SS-181	39	218 *5	186 *5	114	45	42	27	30

Eurofins TestAmerica, Sacramento

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65467-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	dMeFOSA (25-150)	dEtFOSA (25-150)	NMFM (10-120)	NEFM (10-120)
320-65467-10	SS-182	57	234 *5	204 *5	164 *5	47	42	28	25
320-65467-11	SS-141	76	245 *5	209 *5	212 *5	52	47	29	27
320-65467-11 MS	SS-141	39	224 *5	174 *5	118	31	28	21	19
320-65467-11 MSD	SS-141	58	236 *5	213 *5	167 *5	52	51	31	31
320-65467-12	SS-140	43	246 *5	192 *5	118	44	40	29	25
320-65467-13	DUP-04	60	235 *5	200 *5	151 *5	48	46	32	30
LCS 320-421181/2-A	Lab Control Sample	107	130	144	132	60	59	14	14
MB 320-421181/1-A	Method Blank	102	131	147	138	70	61	18	16

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-65467-1	SS-174	96
320-65467-2	SS-173	90
320-65467-3	SS-175	81
320-65467-4	SS-176	83
320-65467-5	SS-177	86
320-65467-6	SS-178	83
320-65467-7	SS-179	84
320-65467-8	SS-180	81
320-65467-9	SS-181	85
320-65467-10	SS-182	86
320-65467-11	SS-141	89
320-65467-11 MS	SS-141	84
320-65467-11 MSD	SS-141	86
320-65467-12	SS-140	90
320-65467-13	DUP-04	85
LCS 320-421181/2-A	Lab Control Sample	100
MB 320-421181/1-A	Method Blank	94

Surrogate Legend

- PFOSA = 13C8 FOSA
- 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
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFHxDA = 13C2 PFHxDA
- PFOS = 13C4 PFOS
- d3NMFOA = d3-NMeFOA
- d5NEFOS = d5-NEtFOSAA
- M242FTS = M2-4:2 FTS
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

dMeFOSA = d-N-MeFOSA-M
 dEtFOSA = d-N-EtFOSA-M
 NMFM = d7-N-MeFOSE-M
 NEFM = d9-N-EtFOSE-M
 HFPODA = 13C3 HFPO-DA

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)
320-65467-14	Field Blank-10-07-2020	79	84	87	96	95	98	92	101
320-65467-15	EB-10-07-2020	77	85	83	95	97	106	92	99
LCS 320-422783/2-A	Lab Control Sample	71	73	73	84	93	88	80	89
LCSD 320-422783/3-A	Lab Control Sample Dup	85	90	92	104	100	111	99	110
MB 320-422783/1-A	Method Blank	75	81	81	92	96	100	93	101

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)
320-65467-14	Field Blank-10-07-2020	86	88	84	82	87	90	85	109
320-65467-15	EB-10-07-2020	91	71	72	81	88	92	88	108
LCS 320-422783/2-A	Lab Control Sample	87	76	71	70	77	77	70	91
LCSD 320-422783/3-A	Lab Control Sample Dup	110	92	83	85	91	95	88	111
MB 320-422783/1-A	Method Blank	96	91	78	76	84	86	81	102

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)
320-65467-14	Field Blank-10-07-2020	123	69	52	49	42	132	133	147
320-65467-15	EB-10-07-2020	128	69	55	51	45	137	133	154 *5
LCS 320-422783/2-A	Lab Control Sample	101	50	38	33	32	92	98	115
LCSD 320-422783/3-A	Lab Control Sample Dup	124	61	44	29	28	115	119	141
MB 320-422783/1-A	Method Blank	118	57	39	28	25	107	130	139

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-65467-14	Field Blank-10-07-2020	86
320-65467-15	EB-10-07-2020	84
LCS 320-422783/2-A	Lab Control Sample	77
LCSD 320-422783/3-A	Lab Control Sample Dup	93
MB 320-422783/1-A	Method Blank	78

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
 PFDaA = 13C2 PFDaA
 PFTDA = 13C2 PFTeDA
 PFHxDA = 13C2 PFHxDA
 C3PFBS = 13C3 PFBS
 PFHxS = 18O2 PFHxS

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 320-65467-1

Project/Site: Marinette Supp Site Inv - 30015294.00020

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

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-421181/1-A
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421181

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<0.20		0.20	0.028	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20	0.077	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorohexanoic acid (PFHxA)	<0.20		0.20	0.042	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20	0.029	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20	0.086	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorononanoic acid (PFNA)	<0.20		0.20	0.036	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorodecanoic acid (PFDA)	<0.20		0.20	0.022	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	0.036	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	0.067	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	0.051	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	0.054	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		0.20	0.044	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		0.20	0.028	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	0.025	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	0.031	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	0.035	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorooctanesulfonic acid (PFOS)	<0.50		0.50	0.20	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	0.039	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	0.082	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	0.020	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	0.020	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	0.39	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	0.37	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
4:2 FTS	<2.0		2.0	0.37	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
6:2 FTS	<2.0		2.0	0.15	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
8:2 FTS	<2.0		2.0	0.25	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
10:2 FTS	<0.20		0.20	0.050	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
NEtFOSA	<0.20		0.20	0.024	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
NMeFOSA	<0.20		0.20	0.041	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
Perfluorododecanesulfonic acid (PFDoS)	<0.20		0.20	0.060	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
NMeFOSE	<0.20		0.20	0.071	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
NEtFOSE	<0.20		0.20	0.036	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
F-53B Major	<0.20		0.20	0.027	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
HFPO-DA (GenX)	<0.25		0.25	0.11	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
F-53B Minor	<0.20		0.20	0.022	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
DONA	<0.20		0.20	0.018	ug/Kg		10/13/20 07:39	10/15/20 22:00	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	91		25 - 150				10/13/20 07:39	10/15/20 22:00	1
13C5 PFPeA	94		25 - 150				10/13/20 07:39	10/15/20 22:00	1
13C2 PFHxA	97		25 - 150				10/13/20 07:39	10/15/20 22:00	1
13C4 PFHpA	100		25 - 150				10/13/20 07:39	10/15/20 22:00	1
13C4 PFOA	99		25 - 150				10/13/20 07:39	10/15/20 22:00	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: MB 320-421181/1-A
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421181

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFNA	99		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C2 PFDA	90		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C2 PFUnA	94		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C2 PFDoA	98		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C2 PFTeDA	94		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C2 PFHxDA	77		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C3 PFBS	94		25 - 150	10/13/20 07:39	10/15/20 22:00	1
18O2 PFHxS	96		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C4 PFOS	98		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C8 FOSA	83		25 - 150	10/13/20 07:39	10/15/20 22:00	1
d3-NMeFOSAA	100		25 - 150	10/13/20 07:39	10/15/20 22:00	1
d5-NEtFOSAA	102		25 - 150	10/13/20 07:39	10/15/20 22:00	1
d-N-MeFOSA-M	70		25 - 150	10/13/20 07:39	10/15/20 22:00	1
d-N-EtFOSA-M	61		25 - 150	10/13/20 07:39	10/15/20 22:00	1
d7-N-MeFOSE-M	18		10 - 120	10/13/20 07:39	10/15/20 22:00	1
d9-N-EtFOSE-M	16		10 - 120	10/13/20 07:39	10/15/20 22:00	1
M2-4:2 FTS	131		25 - 150	10/13/20 07:39	10/15/20 22:00	1
M2-6:2 FTS	147		25 - 150	10/13/20 07:39	10/15/20 22:00	1
M2-8:2 FTS	138		25 - 150	10/13/20 07:39	10/15/20 22:00	1
13C3 HFPO-DA	94		25 - 150	10/13/20 07:39	10/15/20 22:00	1

Lab Sample ID: LCS 320-421181/2-A
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421181

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Perfluoropentanoic acid (PFPeA)	2.00	1.95		ug/Kg		97	69 - 129	
Perfluorohexanoic acid (PFHxA)	2.00	2.08		ug/Kg		104	71 - 131	
Perfluoroheptanoic acid (PFHpA)	2.00	2.01		ug/Kg		100	71 - 131	
Perfluorooctanoic acid (PFOA)	2.00	2.12		ug/Kg		106	72 - 132	
Perfluorononanoic acid (PFNA)	2.00	1.93		ug/Kg		97	73 - 133	
Perfluorodecanoic acid (PFDA)	2.00	2.15		ug/Kg		107	72 - 132	
Perfluoroundecanoic acid (PFUnA)	2.00	2.43		ug/Kg		122	66 - 126	
Perfluorododecanoic acid (PFDoA)	2.00	2.00		ug/Kg		100	71 - 131	
Perfluorotridecanoic acid (PFTriA)	2.00	1.97		ug/Kg		99	71 - 131	
Perfluorotetradecanoic acid (PFTeA)	2.00	2.05		ug/Kg		102	67 - 127	
Perfluoro-n-hexadecanoic acid (PFHxDA)	2.00	1.89		ug/Kg		95	75 - 135	
Perfluoro-n-octadecanoic acid (PFODA)	2.00	2.32		ug/Kg		116	53 - 130	
Perfluorobutanesulfonic acid (PFBS)	1.77	1.71		ug/Kg		97	69 - 129	
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.68		ug/Kg		92	62 - 122	
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.01		ug/Kg		106	76 - 136	

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: LCS 320-421181/2-A
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421181

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	1.86	1.87		ug/Kg		101	68 - 141
Perfluorodecanesulfonic acid (PFDS)	1.93	2.00		ug/Kg		104	71 - 131
Perfluorooctanesulfonamide (FOSA)	2.00	2.30		ug/Kg		115	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.12		ug/Kg		113	66 - 126
Perfluorononanesulfonic acid (PFNS)	1.92	1.95		ug/Kg		102	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.02		ug/Kg		101	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.03		ug/Kg		101	72 - 132
4:2 FTS	1.87	1.76	J	ug/Kg		94	68 - 143
6:2 FTS	1.90	1.70	J	ug/Kg		90	73 - 139
8:2 FTS	1.92	1.93	J	ug/Kg		101	75 - 135
10:2 FTS	1.93	2.14		ug/Kg		111	69 - 145
NEtFOSA	2.00	1.90		ug/Kg		95	47 - 161
NMeFOSA	2.00	1.93		ug/Kg		96	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	1.94	2.01		ug/Kg		104	70 - 130
NMeFOSE	2.00	1.83		ug/Kg		92	43 - 153
NEtFOSE	2.00	2.07		ug/Kg		103	44 - 155
F-53B Major	1.86	1.92		ug/Kg		103	74 - 134
HFPO-DA (GenX)	2.00	2.00		ug/Kg		100	53 - 158
F-53B Minor	1.88	1.98		ug/Kg		105	66 - 136
DONA	1.88	2.07		ug/Kg		110	79 - 139

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	96		25 - 150
13C5 PFPeA	96		25 - 150
13C2 PFHxA	103		25 - 150
13C4 PFHpA	107		25 - 150
13C4 PFOA	102		25 - 150
13C5 PFNA	109		25 - 150
13C2 PFDA	101		25 - 150
13C2 PFUnA	101		25 - 150
13C2 PFDoA	96		25 - 150
13C2 PFTeDA	101		25 - 150
13C2 PFHxDA	98		25 - 150
13C3 PFBS	99		25 - 150
18O2 PFHxS	105		25 - 150
13C4 PFOS	101		25 - 150
13C8 FOSA	91		25 - 150
d3-NMeFOSAA	104		25 - 150
d5-NEtFOSAA	107		25 - 150
d-N-MeFOSA-M	60		25 - 150
d-N-EtFOSA-M	59		25 - 150
d7-N-MeFOSE-M	14		10 - 120
d9-N-EtFOSE-M	14		10 - 120

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: LCS 320-421181/2-A
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421181

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
M2-4:2 FTS	130		25 - 150
M2-6:2 FTS	144		25 - 150
M2-8:2 FTS	132		25 - 150
13C3 HFPO-DA	100		25 - 150

Lab Sample ID: 320-65467-11 MS
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: SS-141
Prep Type: Total/NA
Prep Batch: 421181

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	0.22		2.01	2.14		ug/Kg	☼	96	76 - 136
Perfluoropentanoic acid (PFPeA)	0.66		2.01	2.54		ug/Kg	☼	94	69 - 129
Perfluorohexanoic acid (PFHxA)	0.49		2.01	2.56		ug/Kg	☼	103	71 - 131
Perfluoroheptanoic acid (PFHpA)	0.42		2.01	2.40		ug/Kg	☼	99	71 - 131
Perfluorooctanoic acid (PFOA)	0.94		2.01	3.00		ug/Kg	☼	102	72 - 132
Perfluorononanoic acid (PFNA)	0.91		2.01	3.12		ug/Kg	☼	110	73 - 133
Perfluorodecanoic acid (PFDA)	0.31		2.01	2.59		ug/Kg	☼	113	72 - 132
Perfluoroundecanoic acid (PFUnA)	0.34		2.01	2.86		ug/Kg	☼	126	66 - 126
Perfluorododecanoic acid (PFDoA)	<0.20	F2	2.01	2.45		ug/Kg	☼	122	71 - 131
Perfluorotridecanoic acid (PFTriA)	<0.20		2.01	2.18		ug/Kg	☼	109	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<0.20		2.01	1.69		ug/Kg	☼	84	67 - 127
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		2.01	1.77		ug/Kg	☼	88	75 - 135
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		2.01	1.86		ug/Kg	☼	93	53 - 130
Perfluorobutanesulfonic acid (PFBS)	<0.20		1.77	1.64		ug/Kg	☼	92	69 - 129
Perfluorohexanesulfonic acid (PFHxS)	0.076	J	1.83	1.72		ug/Kg	☼	90	62 - 122
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		1.91	2.32		ug/Kg	☼	121	76 - 136
Perfluorodecanesulfonic acid (PFDS)	<0.20	F1	1.93	1.22	F1	ug/Kg	☼	63	71 - 131
Perfluorooctanesulfonic acid (PFOS)	2.1		1.86	3.84		ug/Kg	☼	92	68 - 141
Perfluorooctanesulfonamide (FOSA)	<0.20		2.01	2.22		ug/Kg	☼	110	77 - 137
Perfluoropentanesulfonic acid (PFPeS)	<0.20		1.88	2.17		ug/Kg	☼	115	66 - 126
Perfluorononanesulfonic acid (PFNS)	<0.20		1.93	1.49		ug/Kg	☼	77	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.13		ug/Kg	☼	106	72 - 132
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.11		ug/Kg	☼	105	72 - 132
4:2 FTS	<2.0		1.87	1.82	J	ug/Kg	☼	97	68 - 143
6:2 FTS	<2.0		1.90	1.97	J	ug/Kg	☼	104	73 - 139
8:2 FTS	<2.0		1.92	1.97	J	ug/Kg	☼	102	75 - 135
10:2 FTS	<0.20		1.93	1.40		ug/Kg	☼	72	69 - 145

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: 320-65467-11 MS
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: SS-141
Prep Type: Total/NA
Prep Batch: 421181

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
NEtFOSA	<0.20		2.01	1.86		ug/Kg	⊛	93	47 - 161
NMeFOSA	<0.20		2.01	1.87		ug/Kg	⊛	93	63 - 148
Perfluorododecanesulfonic acid (PFDoS)	<0.20	F1	1.94	1.06	F1	ug/Kg	⊛	55	70 - 130
NMeFOSE	<0.20		2.01	2.21		ug/Kg	⊛	110	43 - 153
NEtFOSE	0.064	J	2.01	2.09		ug/Kg	⊛	101	44 - 155
F-53B Major	<0.20		1.87	1.87		ug/Kg	⊛	100	74 - 134
HFPO-DA (GenX)	<0.26		2.01	2.09		ug/Kg	⊛	104	53 - 158
F-53B Minor	<0.20		1.89	1.33		ug/Kg	⊛	70	66 - 136
DONA	<0.20		1.89	2.60		ug/Kg	⊛	137	79 - 139

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C8 FOSA	44		25 - 150
13C4 PFBA	90		25 - 150
13C5 PFPeA	77		25 - 150
13C2 PFHxA	95		25 - 150
13C4 PFHpA	94		25 - 150
13C4 PFOA	84		25 - 150
13C5 PFNA	71		25 - 150
13C2 PFDA	54		25 - 150
13C2 PFUnA	44		25 - 150
13C2 PFDoA	41		25 - 150
13C2 PFTeDA	38		25 - 150
13C3 PFBS	83		25 - 150
18O2 PFHxS	91		25 - 150
13C2 PFHxDA	29		25 - 150
13C4 PFOS	63		25 - 150
d3-NMeFOSAA	41		25 - 150
d5-NEtFOSAA	39		25 - 150
M2-4:2 FTS	224	*5	25 - 150
M2-6:2 FTS	174	*5	25 - 150
M2-8:2 FTS	118		25 - 150
d-N-MeFOSA-M	31		25 - 150
d-N-EtFOSA-M	28		25 - 150
d7-N-MeFOSE-M	21		10 - 120
d9-N-EtFOSE-M	19		10 - 120
13C3 HFPO-DA	84		25 - 150

Lab Sample ID: 320-65467-11 MSD
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: SS-141
Prep Type: Total/NA
Prep Batch: 421181

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)	0.22		2.03	2.07		ug/Kg	⊛	91	76 - 136	3	30
Perfluoropentanoic acid (PFPeA)	0.66		2.03	2.43		ug/Kg	⊛	88	69 - 129	4	30
Perfluorohexanoic acid (PFHxA)	0.49		2.03	2.58		ug/Kg	⊛	103	71 - 131	1	30
Perfluoroheptanoic acid (PFHpA)	0.42		2.03	2.65		ug/Kg	⊛	110	71 - 131	10	30
Perfluorooctanoic acid (PFOA)	0.94		2.03	3.18		ug/Kg	⊛	111	72 - 132	6	30
Perfluorononanoic acid (PFNA)	0.91		2.03	2.78		ug/Kg	⊛	92	73 - 133	11	30

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: 320-65467-11 MSD

Matrix: Solid

Analysis Batch: 422523

Client Sample ID: SS-141

Prep Type: Total/NA

Prep Batch: 421181

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanoic acid (PFDA)	0.31		2.03	2.64		ug/Kg	☼	115	72 - 132	2	30
Perfluoroundecanoic acid (PFUnA)	0.34		2.03	2.84		ug/Kg	☼	123	66 - 126	1	30
Perfluorododecanoic acid (PFDoA)	<0.20	F2	2.03	1.58	F2	ug/Kg	☼	78	71 - 131	43	30
Perfluorotridecanoic acid (PFTriA)	<0.20		2.03	1.67		ug/Kg	☼	82	71 - 131	27	30
Perfluorotetradecanoic acid (PFTeA)	<0.20		2.03	2.06		ug/Kg	☼	102	67 - 127	19	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	<0.20		2.03	1.95		ug/Kg	☼	96	75 - 135	10	30
Perfluoro-n-octadecanoic acid (PFODA)	<0.20		2.03	1.69		ug/Kg	☼	84	53 - 130	9	30
Perfluorobutanesulfonic acid (PFBS)	<0.20		1.79	1.72		ug/Kg	☼	96	69 - 129	5	30
Perfluorohexanesulfonic acid (PFHxS)	0.076	J	1.84	1.83		ug/Kg	☼	95	62 - 122	6	30
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		1.93	2.15		ug/Kg	☼	111	76 - 136	8	30
Perfluorodecanesulfonic acid (PFDS)	<0.20	F1	1.95	1.45		ug/Kg	☼	74	71 - 131	17	30
Perfluorooctanesulfonic acid (PFOS)	2.1		1.88	3.79		ug/Kg	☼	89	68 - 141	1	30
Perfluorooctanesulfonamide (FOSA)	<0.20		2.03	2.39		ug/Kg	☼	118	77 - 137	8	30
Perfluoropentanesulfonic acid (PFPeS)	<0.20		1.90	2.27		ug/Kg	☼	119	66 - 126	4	30
Perfluorononanesulfonic acid (PFNS)	<0.20		1.94	1.66		ug/Kg	☼	85	72 - 132	11	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.03	2.25		ug/Kg	☼	111	72 - 132	5	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.03	2.29		ug/Kg	☼	113	72 - 132	8	30
4:2 FTS	<2.0		1.89	2.06		ug/Kg	☼	109	68 - 143	12	30
6:2 FTS	<2.0		1.92	1.87	J	ug/Kg	☼	97	73 - 139	5	30
8:2 FTS	<2.0		1.94	1.98	J	ug/Kg	☼	102	75 - 135	1	30
10:2 FTS	<0.20		1.95	1.52		ug/Kg	☼	78	69 - 145	9	30
NEtFOSA	<0.20		2.03	1.87		ug/Kg	☼	92	47 - 161	0	30
NMeFOSA	<0.20		2.03	2.04		ug/Kg	☼	101	63 - 148	9	30
Perfluorododecanesulfonic acid (PFDoS)	<0.20	F1	1.96	1.34	F1	ug/Kg	☼	68	70 - 130	23	30
NMeFOSE	<0.20		2.03	2.20		ug/Kg	☼	108	43 - 153	1	30
NEtFOSE	0.064	J	2.03	2.05		ug/Kg	☼	98	44 - 155	2	30
F-53B Major	<0.20		1.89	2.20		ug/Kg	☼	116	74 - 134	16	30
HFPO-DA (GenX)	<0.26		2.03	2.16		ug/Kg	☼	107	53 - 158	3	30
F-53B Minor	<0.20		1.91	1.50		ug/Kg	☼	78	66 - 136	12	30
DONA	<0.20		1.91	2.15		ug/Kg	☼	113	79 - 139	19	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C8 FOSA	61		25 - 150
13C4 PFBA	88		25 - 150
13C5 PFPeA	77		25 - 150
13C2 PFHxA	97		25 - 150

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: 320-65467-11 MSD
Matrix: Solid
Analysis Batch: 422523

Client Sample ID: SS-141
Prep Type: Total/NA
Prep Batch: 421181

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C4 PFHpA	96		25 - 150
13C4 PFOA	89		25 - 150
13C5 PFNA	94		25 - 150
13C2 PFDA	77		25 - 150
13C2 PFUnA	66		25 - 150
13C2 PFDoA	71		25 - 150
13C2 PFTeDA	52		25 - 150
13C3 PFBS	84		25 - 150
18O2 PFHxS	97		25 - 150
13C2 PFHxDA	49		25 - 150
13C4 PFOS	82		25 - 150
d3-NMeFOSAA	60		25 - 150
d5-NEtFOSAA	58		25 - 150
M2-4:2 FTS	236	*5	25 - 150
M2-6:2 FTS	213	*5	25 - 150
M2-8:2 FTS	167	*5	25 - 150
d-N-MeFOSA-M	52		25 - 150
d-N-EtFOSA-M	51		25 - 150
d7-N-MeFOSE-M	31		10 - 120
d9-N-EtFOSE-M	31		10 - 120
13C3 HFPO-DA	86		25 - 150

Lab Sample ID: MB 320-422783/1-A
Matrix: Water
Analysis Batch: 423614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422783

<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>
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	0.968	J	2.0	0.89	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		10/17/20 04:23	10/20/20 22:19	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: MB 320-422783/1-A
Matrix: Water
Analysis Batch: 423614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422783

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		10/17/20 04:23	10/20/20 22:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		10/17/20 04:23	10/20/20 22:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		10/17/20 04:23	10/20/20 22:19	1
4:2 FTS	<2.0		2.0	0.24	ng/L		10/17/20 04:23	10/20/20 22:19	1
6:2 FTS	<5.0		5.0	2.5	ng/L		10/17/20 04:23	10/20/20 22:19	1
8:2 FTS	<2.0		2.0	0.46	ng/L		10/17/20 04:23	10/20/20 22:19	1
10:2 FTS	<2.0		2.0	0.67	ng/L		10/17/20 04:23	10/20/20 22:19	1
NEtFOSA	<2.0		2.0	0.87	ng/L		10/17/20 04:23	10/20/20 22:19	1
NMeFOSA	<2.0		2.0	0.43	ng/L		10/17/20 04:23	10/20/20 22:19	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		10/17/20 04:23	10/20/20 22:19	1
NMeFOSE	<4.0		4.0	1.4	ng/L		10/17/20 04:23	10/20/20 22:19	1
NEtFOSE	1.34	J	2.0	0.85	ng/L		10/17/20 04:23	10/20/20 22:19	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/17/20 04:23	10/20/20 22:19	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		10/17/20 04:23	10/20/20 22:19	1
F-53B Minor	<2.0		2.0	0.32	ng/L		10/17/20 04:23	10/20/20 22:19	1
DONA	<2.0		2.0	0.40	ng/L		10/17/20 04:23	10/20/20 22:19	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	75		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C5 PFPeA	81		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C2 PFHxA	81		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C4 PFHpA	92		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C4 PFOA	96		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C5 PFNA	100		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C2 PFDA	93		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C2 PFUnA	101		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C2 PFDoA	96		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C2 PFTeDA	91		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C2 PFHxDA	78		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C3 PFBS	76		25 - 150	10/17/20 04:23	10/20/20 22:19	1
18O2 PFHxS	84		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C4 PFOS	86		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C8 FOSA	81		25 - 150	10/17/20 04:23	10/20/20 22:19	1
d3-NMeFOSAA	102		25 - 150	10/17/20 04:23	10/20/20 22:19	1
d5-NEtFOSAA	118		25 - 150	10/17/20 04:23	10/20/20 22:19	1
d-N-MeFOSA-M	57		20 - 150	10/17/20 04:23	10/20/20 22:19	1
d-N-EtFOSA-M	39		20 - 150	10/17/20 04:23	10/20/20 22:19	1
d7-N-MeFOSE-M	28		10 - 120	10/17/20 04:23	10/20/20 22:19	1
d9-N-EtFOSE-M	25		10 - 120	10/17/20 04:23	10/20/20 22:19	1
M2-4:2 FTS	107		25 - 150	10/17/20 04:23	10/20/20 22:19	1
M2-6:2 FTS	130		25 - 150	10/17/20 04:23	10/20/20 22:19	1
M2-8:2 FTS	139		25 - 150	10/17/20 04:23	10/20/20 22:19	1
13C3 HFPO-DA	78		25 - 150	10/17/20 04:23	10/20/20 22:19	1

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: LCS 320-422783/2-A
Matrix: Water
Analysis Batch: 423614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422783
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	42.0		ng/L		105	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	39.4		ng/L		99	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	43.0		ng/L		107	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	42.9		ng/L		107	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	38.1		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	40.0	45.2		ng/L		113	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	41.3		ng/L		103	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	44.3		ng/L		111	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	35.0		ng/L		87	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	34.6		ng/L		86	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	42.9		ng/L		107	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	34.7		ng/L		87	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	47.2		ng/L		118	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	37.3		ng/L		106	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.0		ng/L		96	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.1		ng/L		103	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	38.4		ng/L		103	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	39.7		ng/L		103	71 - 131
Perfluorooctanesulfonamide (FOSA)	40.0	46.7		ng/L		117	73 - 133
Perfluoropentanesulfonic acid (PFPeS)	37.5	41.5		ng/L		111	66 - 126
Perfluoronanesulfonic acid (PFNS)	38.4	38.3		ng/L		100	75 - 135
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.3		ng/L		106	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	40.9		ng/L		102	76 - 136
4:2 FTS	37.4	40.0		ng/L		107	79 - 139
6:2 FTS	37.9	37.8		ng/L		100	59 - 175
8:2 FTS	38.3	41.4		ng/L		108	75 - 135
10:2 FTS	38.6	46.6		ng/L		121	64 - 142
NEtFOSA	40.0	39.0		ng/L		98	78 - 138
NMeFOSA	40.0	38.1		ng/L		95	67 - 154
Perfluorododecanesulfonic acid (PFDoS)	38.7	33.9		ng/L		87	67 - 127
NMeFOSE	40.0	40.1		ng/L		100	70 - 130
NEtFOSE	40.0	40.5		ng/L		101	71 - 131
F-53B Major	37.3	37.6		ng/L		101	75 - 135
HFPO-DA (GenX)	40.0	39.6		ng/L		99	51 - 173
F-53B Minor	37.7	34.3		ng/L		91	54 - 114
DONA	37.7	39.8		ng/L		106	79 - 139

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

<i>Isotope Dilution</i>	<i>LCS LCS</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C4 PFBA	71		25 - 150
13C5 PFPeA	73		25 - 150
13C2 PFHxA	73		25 - 150
13C4 PFHpA	84		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	88		25 - 150
13C2 PFDA	80		25 - 150
13C2 PFUnA	89		25 - 150
13C2 PFDoA	87		25 - 150
13C2 PFTeDA	76		25 - 150
13C2 PFHxDA	71		25 - 150
13C3 PFBS	70		25 - 150
18O2 PFHxS	77		25 - 150
13C4 PFOS	77		25 - 150
13C8 FOSA	70		25 - 150
d3-NMeFOSAA	91		25 - 150
d5-NEtFOSAA	101		25 - 150
d-N-MeFOSA-M	50		20 - 150
d-N-EtFOSA-M	38		20 - 150
d7-N-MeFOSE-M	33		10 - 120
d9-N-EtFOSE-M	32		10 - 120
M2-4:2 FTS	92		25 - 150
M2-6:2 FTS	98		25 - 150
M2-8:2 FTS	115		25 - 150
13C3 HFPO-DA	77		25 - 150

Lab Sample ID: LCSD 320-422783/3-A
Matrix: Water
Analysis Batch: 423614

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422783

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>	
Perfluorobutanoic acid (PFBA)	40.0	41.5		ng/L		104	76 - 136	1	30	
Perfluoropentanoic acid (PFPeA)	40.0	37.4		ng/L		93	71 - 131	5	30	
Perfluorohexanoic acid (PFHxA)	40.0	38.6		ng/L		97	73 - 133	11	30	
Perfluoroheptanoic acid (PFHpA)	40.0	40.0		ng/L		100	72 - 132	7	30	
Perfluorooctanoic acid (PFOA)	40.0	42.2		ng/L		106	70 - 130	10	30	
Perfluorononanoic acid (PFNA)	40.0	43.0		ng/L		108	75 - 135	5	30	
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	76 - 136	3	30	
Perfluoroundecanoic acid (PFUnA)	40.0	39.2		ng/L		98	68 - 128	12	30	
Perfluorododecanoic acid (PFDoA)	40.0	33.5		ng/L		84	71 - 131	4	30	
Perfluorotridecanoic acid (PFTriA)	40.0	29.3		ng/L		73	71 - 131	16	30	
Perfluorotetradecanoic acid (PFTeA)	40.0	40.6		ng/L		101	70 - 130	5	30	
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	37.6		ng/L		94	76 - 136	8	30	
Perfluoro-n-octadecanoic acid (PFODA)	40.0	46.4		ng/L		116	58 - 145	2	30	
Perfluorobutanesulfonic acid (PFBS)	35.4	35.3		ng/L		100	67 - 127	5	30	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.9		ng/L		93	59 - 119	3	30	

Eurofins TestAmerica, Sacramento

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: LCSD 320-422783/3-A
Matrix: Water
Analysis Batch: 423614

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422783

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	36.8		ng/L		97	76 - 136	6	30
Perfluorooctanesulfonic acid (PFOS)	37.1	35.6		ng/L		96	70 - 130	7	30
Perfluorodecanesulfonic acid (PFDS)	38.6	37.5		ng/L		97	71 - 131	6	30
Perfluorooctanesulfonamide (FOSA)	40.0	45.5		ng/L		114	73 - 133	3	30
Perfluoropentanesulfonic acid (PFPeS)	37.5	40.0		ng/L		107	66 - 126	4	30
Perfluorononanesulfonic acid (PFNS)	38.4	36.8		ng/L		96	75 - 135	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.7		ng/L		109	76 - 136	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.6		ng/L		99	76 - 136	3	30
4:2 FTS	37.4	37.6		ng/L		101	79 - 139	6	30
6:2 FTS	37.9	37.6		ng/L		99	59 - 175	0	30
8:2 FTS	38.3	38.9		ng/L		101	75 - 135	6	30
10:2 FTS	38.6	45.0		ng/L		117	64 - 142	4	30
NEtFOSA	40.0	39.9		ng/L		100	78 - 138	2	30
NMeFOSA	40.0	37.8		ng/L		95	67 - 154	1	30
Perfluorododecanesulfonic acid (PFDoS)	38.7	33.7		ng/L		87	67 - 127	1	30
NMeFOSE	40.0	40.3		ng/L		101	70 - 130	0	30
NEtFOSE	40.0	40.8		ng/L		102	71 - 131	1	30
F-53B Major	37.3	36.3		ng/L		97	75 - 135	3	30
HFPO-DA (GenX)	40.0	39.3		ng/L		98	51 - 173	1	30
F-53B Minor	37.7	34.7		ng/L		92	54 - 114	1	30
DONA	37.7	37.8		ng/L		100	79 - 139	5	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C4 PFBA	85		25 - 150
13C5 PFPeA	90		25 - 150
13C2 PFHxA	92		25 - 150
13C4 PFHpA	104		25 - 150
13C4 PFOA	100		25 - 150
13C5 PFNA	111		25 - 150
13C2 PFDA	99		25 - 150
13C2 PFUnA	110		25 - 150
13C2 PFDoA	110		25 - 150
13C2 PFTeDA	92		25 - 150
13C2 PFHxDA	83		25 - 150
13C3 PFBS	85		25 - 150
18O2 PFHxS	91		25 - 150
13C4 PFOS	95		25 - 150
13C8 FOSA	88		25 - 150
d3-NMeFOSAA	111		25 - 150
d5-NEtFOSAA	124		25 - 150
d-N-MeFOSA-M	61		20 - 150
d-N-EtFOSA-M	44		20 - 150

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Lab Sample ID: LCSD 320-422783/3-A
Matrix: Water
Analysis Batch: 423614

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422783

Isotope Dilution	LCSD LCSD		Limits
	%Recovery	Qualifier	
d7-N-MeFOSE-M	29		10 - 120
d9-N-EtFOSE-M	28		10 - 120
M2-4:2 FTS	115		25 - 150
M2-6:2 FTS	119		25 - 150
M2-8:2 FTS	141		25 - 150
13C3 HFPO-DA	93		25 - 150

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-65467-1 DU
Matrix: Solid
Analysis Batch: 420850

Client Sample ID: SS-174
Prep Type: Total/NA

Analyte	Sample Sample		DU DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Moisture	9.4		8.1		%		15	20
Percent Solids	90.6		91.9		%		1	20

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-160186/5
Matrix: Solid
Analysis Batch: 160186

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon	<1000		1000	670	mg/Kg			10/19/20 16:46	1

Lab Sample ID: LCS 200-160186/6
Matrix: Solid
Analysis Batch: 160186

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Organic Carbon	8300	8960		mg/Kg		108	75 - 125

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

LCMS

Prep Batch: 421181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65467-1	SS-174	Total/NA	Solid	SHAKE	
320-65467-2	SS-173	Total/NA	Solid	SHAKE	
320-65467-3	SS-175	Total/NA	Solid	SHAKE	
320-65467-4	SS-176	Total/NA	Solid	SHAKE	
320-65467-5	SS-177	Total/NA	Solid	SHAKE	
320-65467-6	SS-178	Total/NA	Solid	SHAKE	
320-65467-7	SS-179	Total/NA	Solid	SHAKE	
320-65467-8	SS-180	Total/NA	Solid	SHAKE	
320-65467-9	SS-181	Total/NA	Solid	SHAKE	
320-65467-10	SS-182	Total/NA	Solid	SHAKE	
320-65467-11	SS-141	Total/NA	Solid	SHAKE	
320-65467-12	SS-140	Total/NA	Solid	SHAKE	
320-65467-13	DUP-04	Total/NA	Solid	SHAKE	
MB 320-421181/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-421181/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-65467-11 MS	SS-141	Total/NA	Solid	SHAKE	
320-65467-11 MSD	SS-141	Total/NA	Solid	SHAKE	

Analysis Batch: 422523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65467-1	SS-174	Total/NA	Solid	537 (modified)	421181
320-65467-2	SS-173	Total/NA	Solid	537 (modified)	421181
320-65467-3	SS-175	Total/NA	Solid	537 (modified)	421181
320-65467-4	SS-176	Total/NA	Solid	537 (modified)	421181
320-65467-5	SS-177	Total/NA	Solid	537 (modified)	421181
320-65467-6	SS-178	Total/NA	Solid	537 (modified)	421181
320-65467-7	SS-179	Total/NA	Solid	537 (modified)	421181
320-65467-8	SS-180	Total/NA	Solid	537 (modified)	421181
320-65467-9	SS-181	Total/NA	Solid	537 (modified)	421181
320-65467-10	SS-182	Total/NA	Solid	537 (modified)	421181
320-65467-11	SS-141	Total/NA	Solid	537 (modified)	421181
320-65467-12	SS-140	Total/NA	Solid	537 (modified)	421181
320-65467-13	DUP-04	Total/NA	Solid	537 (modified)	421181
MB 320-421181/1-A	Method Blank	Total/NA	Solid	537 (modified)	421181
LCS 320-421181/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	421181
320-65467-11 MS	SS-141	Total/NA	Solid	537 (modified)	421181
320-65467-11 MSD	SS-141	Total/NA	Solid	537 (modified)	421181

Prep Batch: 422783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65467-14	Field Blank-10-07-2020	Total/NA	Water	3535	
320-65467-15	EB-10-07-2020	Total/NA	Water	3535	
MB 320-422783/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-422783/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-422783/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 423614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-422783/1-A	Method Blank	Total/NA	Water	537 (modified)	422783
LCS 320-422783/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	422783
LCSD 320-422783/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	422783

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QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

LCMS

Analysis Batch: 423926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65467-14	Field Blank-10-07-2020	Total/NA	Water	537 (modified)	422783
320-65467-15	EB-10-07-2020	Total/NA	Water	537 (modified)	422783

General Chemistry

Analysis Batch: 160186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65467-1	SS-174	Total/NA	Solid	Lloyd Kahn	
320-65467-2	SS-173	Total/NA	Solid	Lloyd Kahn	
320-65467-3	SS-175	Total/NA	Solid	Lloyd Kahn	
320-65467-4	SS-176	Total/NA	Solid	Lloyd Kahn	
320-65467-5	SS-177	Total/NA	Solid	Lloyd Kahn	
320-65467-6	SS-178	Total/NA	Solid	Lloyd Kahn	
320-65467-7	SS-179	Total/NA	Solid	Lloyd Kahn	
320-65467-8	SS-180	Total/NA	Solid	Lloyd Kahn	
320-65467-9	SS-181	Total/NA	Solid	Lloyd Kahn	
320-65467-10	SS-182	Total/NA	Solid	Lloyd Kahn	
320-65467-11	SS-141	Total/NA	Solid	Lloyd Kahn	
320-65467-12	SS-140	Total/NA	Solid	Lloyd Kahn	
MB 200-160186/5	Method Blank	Total/NA	Solid	Lloyd Kahn	
LCS 200-160186/6	Lab Control Sample	Total/NA	Solid	Lloyd Kahn	

Analysis Batch: 420850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65467-1	SS-174	Total/NA	Solid	D 2216	
320-65467-2	SS-173	Total/NA	Solid	D 2216	
320-65467-3	SS-175	Total/NA	Solid	D 2216	
320-65467-4	SS-176	Total/NA	Solid	D 2216	
320-65467-5	SS-177	Total/NA	Solid	D 2216	
320-65467-6	SS-178	Total/NA	Solid	D 2216	
320-65467-7	SS-179	Total/NA	Solid	D 2216	
320-65467-8	SS-180	Total/NA	Solid	D 2216	
320-65467-9	SS-181	Total/NA	Solid	D 2216	
320-65467-10	SS-182	Total/NA	Solid	D 2216	
320-65467-11	SS-141	Total/NA	Solid	D 2216	
320-65467-12	SS-140	Total/NA	Solid	D 2216	
320-65467-13	DUP-04	Total/NA	Solid	D 2216	
320-65467-1 DU	SS-174	Total/NA	Solid	D 2216	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-174

Date Collected: 10/06/20 16:00

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 18:25	RWM	TAL BUR

Client Sample ID: SS-174

Date Collected: 10/06/20 16:00

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-1

Matrix: Solid

Percent Solids: 90.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/15/20 22:38	K1S	TAL SAC

Client Sample ID: SS-173

Date Collected: 10/07/20 08:40

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 18:29	RWM	TAL BUR

Client Sample ID: SS-173

Date Collected: 10/07/20 08:40

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-2

Matrix: Solid

Percent Solids: 88.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.21 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/15/20 22:47	K1S	TAL SAC

Client Sample ID: SS-175

Date Collected: 10/07/20 09:15

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 18:42	RWM	TAL BUR

Client Sample ID: SS-175

Date Collected: 10/07/20 09:15

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-3

Matrix: Solid

Percent Solids: 94.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.12 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/15/20 22:57	K1S	TAL SAC

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Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-176

Date Collected: 10/07/20 09:35

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 18:46	RWM	TAL BUR

Client Sample ID: SS-176

Date Collected: 10/07/20 09:35

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-4

Matrix: Solid

Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.10 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/15/20 23:06	K1S	TAL SAC

Client Sample ID: SS-177

Date Collected: 10/07/20 10:30

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 18:50	RWM	TAL BUR

Client Sample ID: SS-177

Date Collected: 10/07/20 10:30

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-5

Matrix: Solid

Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.05 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/15/20 23:16	K1S	TAL SAC

Client Sample ID: SS-178

Date Collected: 10/07/20 10:50

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 18:54	RWM	TAL BUR

Client Sample ID: SS-178

Date Collected: 10/07/20 10:50

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-6

Matrix: Solid

Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.18 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/15/20 23:25	K1S	TAL SAC

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Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-179

Date Collected: 10/07/20 11:10

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 18:58	RWM	TAL BUR

Client Sample ID: SS-179

Date Collected: 10/07/20 11:10

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-7

Matrix: Solid

Percent Solids: 96.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.46 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/15/20 23:53	K1S	TAL SAC

Client Sample ID: SS-180

Date Collected: 10/07/20 11:30

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 19:03	RWM	TAL BUR

Client Sample ID: SS-180

Date Collected: 10/07/20 11:30

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-8

Matrix: Solid

Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.50 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/16/20 00:03	K1S	TAL SAC

Client Sample ID: SS-181

Date Collected: 10/07/20 11:50

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 19:07	RWM	TAL BUR

Client Sample ID: SS-181

Date Collected: 10/07/20 11:50

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-9

Matrix: Solid

Percent Solids: 90.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.35 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/16/20 00:12	K1S	TAL SAC

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Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: SS-182

Date Collected: 10/07/20 12:05

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 19:11	RWM	TAL BUR

Client Sample ID: SS-182

Date Collected: 10/07/20 12:05

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-10

Matrix: Solid

Percent Solids: 91.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.37 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/16/20 00:21	K1S	TAL SAC

Client Sample ID: SS-141

Date Collected: 10/07/20 12:25

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 19:15	RWM	TAL BUR

Client Sample ID: SS-141

Date Collected: 10/07/20 12:25

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-11

Matrix: Solid

Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.28 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/16/20 00:31	K1S	TAL SAC

Client Sample ID: SS-140

Date Collected: 10/07/20 12:45

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC
Total/NA	Analysis	Lloyd Kahn		1			160186	10/19/20 19:20	RWM	TAL BUR

Client Sample ID: SS-140

Date Collected: 10/07/20 12:45

Date Received: 10/09/20 09:30

Lab Sample ID: 320-65467-12

Matrix: Solid

Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.27 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/16/20 00:59	K1S	TAL SAC

Eurofins TestAmerica, Sacramento

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Client Sample ID: DUP-04

Lab Sample ID: 320-65467-13

Date Collected: 10/07/20 00:00

Matrix: Solid

Date Received: 10/09/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			420850	10/12/20 09:45	TCS	TAL SAC

Client Sample ID: DUP-04

Lab Sample ID: 320-65467-13

Date Collected: 10/07/20 00:00

Matrix: Solid

Date Received: 10/09/20 09:30

Percent Solids: 94.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.25 g	10.0 mL	421181	10/13/20 07:39	NSS	TAL SAC
Total/NA	Analysis	537 (modified)		1			422523	10/16/20 01:09	K1S	TAL SAC

Client Sample ID: Field Blank-10-07-2020

Lab Sample ID: 320-65467-14

Date Collected: 10/07/20 13:00

Matrix: Water

Date Received: 10/09/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			275.9 mL	10.0 mL	422783	10/17/20 04:23	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1			423926	10/21/20 16:48	S1M	TAL SAC

Client Sample ID: EB-10-07-2020

Lab Sample ID: 320-65467-15

Date Collected: 10/07/20 13:05

Matrix: Water

Date Received: 10/09/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			275 mL	10.0 mL	422783	10/17/20 04:23	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1			423926	10/21/20 16:57	S1M	TAL SAC

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

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 Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

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

Laboratory: Eurofins TestAmerica, Burlington

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-23
Connecticut	State	PH-0751	09-30-21
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-16-21
Florida	NELAP	E87467	06-30-21
Minnesota	NELAP	050-999-436	12-31-20
New Hampshire	NELAP	2006	12-18-20
New Jersey	NELAP	VT972	06-30-21
New York	NELAP	10391	04-01-21
Pennsylvania	NELAP	68-00489	04-30-21
Rhode Island	State	LAO00298	12-30-20
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00272	08-09-20 *
Vermont	State	VT4000	12-31-20
Virginia	NELAP	460209	12-14-20
Wisconsin	State	399133350	08-31-21

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



Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

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 Supp Site Inv - 30015294.00020

Job ID: 320-65467-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65467-1	SS-174	Solid	10/06/20 16:00	10/09/20 09:30	
320-65467-2	SS-173	Solid	10/07/20 08:40	10/09/20 09:30	
320-65467-3	SS-175	Solid	10/07/20 09:15	10/09/20 09:30	
320-65467-4	SS-176	Solid	10/07/20 09:35	10/09/20 09:30	
320-65467-5	SS-177	Solid	10/07/20 10:30	10/09/20 09:30	
320-65467-6	SS-178	Solid	10/07/20 10:50	10/09/20 09:30	
320-65467-7	SS-179	Solid	10/07/20 11:10	10/09/20 09:30	
320-65467-8	SS-180	Solid	10/07/20 11:30	10/09/20 09:30	
320-65467-9	SS-181	Solid	10/07/20 11:50	10/09/20 09:30	
320-65467-10	SS-182	Solid	10/07/20 12:05	10/09/20 09:30	
320-65467-11	SS-141	Solid	10/07/20 12:25	10/09/20 09:30	
320-65467-12	SS-140	Solid	10/07/20 12:45	10/09/20 09:30	
320-65467-13	DUP-04	Solid	10/07/20 00:00	10/09/20 09:30	
320-65467-14	Field Blank-10-07-2020	Water	10/07/20 13:00	10/09/20 09:30	
320-65467-15	EB-10-07-2020	Water	10/07/20 13:05	10/09/20 09:30	

Chain of Custody Record

Client Information		Sampler: <u>L. Reuteran</u>		Lab PM Fredrick, Sandie		Carrier Tracking No(s)		COC No: 500-85977-38845.1	
Client Contact: Genevieve Vander Velden		Phone: 200		E-Mail: sandra.fredrick@eurofinset.com				Page: Page 1 of 2	
Company: ARCADIS U.S., Inc.				Analysis Requested				Job #	
Address: 126 North Jefferson Street Suite 400		Due Date Requested:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Lloyd_Kahn - TOC PFC_IDA - PFAS, Wisconsin List (38 Analytes)				Total Number of containers	
City: Milwaukee		TAT Requested (days): <u>Standard</u>							
State, Zip: WI, 53202		PO #: 30015294.00020							
Phone:		WO #:							
Email: Genevieve.VanderVelden@arcadis.com		Project #: 50018123							
Project Name: Marinette Supp Site Inv - 30015294.00020		SSOW#:							
Site:								Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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)	
Other:									
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:	
<u>SS-174</u>		<u>10/6/20</u>		<u>1600</u>		<u>C</u>		<u>Solid</u>	
<u>SS-173</u>		<u>10/7/20</u>		<u>840</u>				<u>Solid</u>	
<u>SS-175</u>				<u>915</u>				<u>Solid</u>	
<u>SS-176</u>				<u>935</u>				<u>Solid</u>	
<u>SS-177</u>				<u>1030</u>				<u>Solid</u>	
<u>SS-178</u>				<u>1050</u>				<u>Solid</u>	
<u>SS-179</u>				<u>1110</u>				<u>Solid</u>	
<u>SS-180</u>				<u>1130</u>				<u>Solid</u>	
<u>SS-181</u>				<u>1150</u>				<u>Solid</u>	
<u>SS-182</u>				<u>1205</u>				<u>Solid</u>	
<u>SS-141</u>				<u>1225</u>				<u>Solid</u>	
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: <u>[Signature]</u>		Date/Time: <u>10/8/20 1030</u>		Company: <u>Arcadis</u>		Received by: <u>[Signature]</u>		Date/Time: <u>10-8-20 1030</u>	
Relinquished by: <u>[Signature]</u>		Date/Time: <u>10-8-20 1700</u>		Company: <u>TA</u>		Received by: <u>[Signature]</u>		Date/Time: <u>10/09/20 930</u>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>991439</u>		Cooler Temperature(s) °C and Other Remarks: <u>4.6</u>					



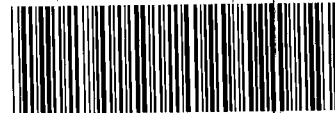
MS/MSD PFAS only



Eurofins TestAmerica, Sacramento

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

Chain of Custody Record



320-65467 Chain of Custody



Environment Testing
America

Client Information (Sub Contract Lab)		Sampler:		Lab PM:		COC No:	
Client Contact: Shipping/Receiving		Phone:		Fredrick, Sandie		320-197125.1	
Company: TestAmerica Laboratories, Inc.		E-Mail: sandra.fredrick@eurofinset.com		State of Origin: Wisconsin		Page: Page 1 of 2	
Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403 Phone: 802-660-1990(Tel) 802-660-1919(Fax) Email:		Due Date Requested: 10/21/2020 TAT Requested (days):		Accreditations Required (See note): State - Wisconsin		Job #: 320-65467-1	
Project Name: Marinette Supp Site Inv - 30015294.00020 Site:		Project #: 50018123 SSOW#:		Analysis Requested		Preservation Codes:	
Sample Identification - Client ID (Lab ID)		Sample Date				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)	
		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	
		Sample Date		Sample Time		Matrix	
SS-174 (320-65467-1)		10/6/20		16:00 Central		Solid	
SS-173 (320-65467-2)		10/7/20		08:40 Central		Solid	
SS-175 (320-65467-3)		10/7/20		09:15 Central		Solid	
SS-176 (320-65467-4)		10/7/20		09:35 Central		Solid	
SS-177 (320-65467-5)		10/7/20		10:30 Central		Solid	
SS-178 (320-65467-6)		10/7/20		10:50 Central		Solid	
SS-179 (320-65467-7)		10/7/20		11:10 Central		Solid	
SS-180 (320-65467-8)		10/7/20		11:30 Central		Solid	
SS-181 (320-65467-9)		10/7/20		11:50 Central		Solid	
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.							
Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Unconfirmed				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:			
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <i>[Signature]</i>		Date/Time: 10/12/20 1630		Company: ETASAC		Received by: Taylor Whitehouse	
Relinquished by:		Date/Time:		Company:		Received by:	
Relinquished by:		Date/Time:		Company:		Received by:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 1095177		Cooler Temperature(s) °C and Other Remarks: 1.9			

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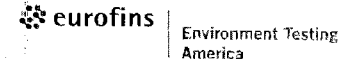
10/22/2020



Eurofins TestAmerica, Sacramento

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

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:		Lab PM: Fredrick, Sandie		Carrier Tracking No(s):		COC No: 320-197125.2			
Client Contact: Shipping/Receiving		Phone:		E-Mail: sandra.fredrick@eurofinset.com		State of Origin: Wisconsin		Page: Page 2 of 2			
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State - Wisconsin				Job #: 320-65467-1			
Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403		Due Date Requested: 10/21/2020		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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)	
Phone: 802-660-1990(Tel) 802-660-1919(Fax)		TAT Requested (days):									
Email:		PO #:									
Project Name: Marinette Supp Site Inv - 30015294.00020		Project #: 50018123									
Site:		SSOW#:		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Lloyd_Kahn/TOC		Other:			
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Special Instructions/Note:			
SS-182 (320-65467-10)		10/7/20		12:05 Central		Solid		X			
SS-141 (320-65467-11)		10/7/20		12:25 Central		Solid		X			
SS-140 (320-65467-12)		10/7/20		12:45 Central		Solid		X			
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.											
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:						
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:				
Relinquished by: <i>[Signature]</i>		Date/Time: 10/12/20-1630		Company: ETA SA		Received by: <i>[Signature]</i>		Date/Time: 10/13/2020 1030			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Custody Seals Intact: △ Yes △ No		Custody Seal No.: 1095177			Cooler Temperature(s) °C and Other Remarks: 1.9						

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10/22/2020



ORIGIN ID: BLUA
TEST AMERICA
EUROFINS TESTAMERICA W SACRAMENTO
880 RIVERSIDE PARKWAY
WEST SACRAMENTO, CA 95605
UNITED STATES US

SHIP DATE: 12OCT20
ACTWGT: 22.55 LB
CAD: 852262/CAFE3406

BILL SENDER

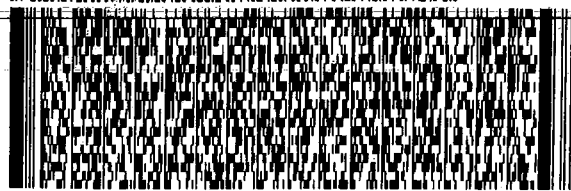
TO: **TIMOTHY BOURDEAU**
TAL BURLINGTON
30 COMMUNITY DRIVE
SUITE 11

SOUTH BURLINGTON VT 05403

(802) 660-1990
DEPT: SUB WORK

REF: SEND OUTS

ESMCP/APPF/USAP



FedEx
Express



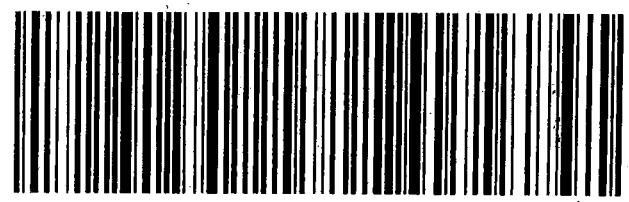
J201019110601UY

TRK# 4895 5414 6910
0201

TUE - 13 OCT 10:30A
PRIORITY OVERNIGHT

XH BTVA

05403
VT-US **BTV**



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- 14

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-65467-1

Login Number: 65467

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Oropeza, Salvador

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	991439
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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
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: 320-65467-1

Login Number: 65467

List Number: 2

Creator: Jaffe, Nat S

List Source: Eurofins TestAmerica, Burlington

List Creation: 10/14/20 10:57 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	1095177
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	1.9°C
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?	N/A	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.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

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

Laboratory Job ID: 500-188631-1

Client Project/Site: Marinette Supp Site Inv - 30015294.00020

For:

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

Attn: Lisa Rutkowski



*Authorized for release by:
10/23/2020 11:58:47 AM*

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

LINKS

Review your project
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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 Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Job ID: 500-188631-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

**Job Narrative
500-188631-1**

Comments

No additional comments.

Receipt

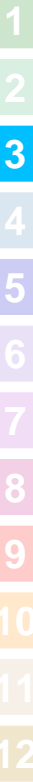
The samples were received on 10/1/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6° C and 2.1° C.

General Chemistry

Method Lloyd Kahn: The instrument paused analysis at 19:08 10/22/2020. Analysis was resumed at 08:32 10/23/2020 500-188631-4, 500-188631-5, CCB 200-160346/18 and CCV 200-160346/17

Method Lloyd Kahn: Reanalysis of the following samples was performed outside of the analytical holding time due to initial QC failure. 500-188631-1, 500-188631-2, 500-188631-3, 500-188631-4 and 500-188631-5.

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 Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Method	Method Description	Protocol	Laboratory
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

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Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-188631-1	SS-159	Solid	09/28/20 14:05	10/01/20 10:00	
500-188631-2	SS-158	Solid	09/28/20 14:30	10/01/20 10:00	
500-188631-3	SS-157	Solid	09/28/20 14:40	10/01/20 10:00	
500-188631-4	SS-160	Solid	09/28/20 14:50	10/01/20 10:00	
500-188631-5	SS-161	Solid	09/28/20 15:20	10/01/20 10:00	
500-188631-6	SS-162	Solid	09/29/20 10:35	10/01/20 10:00	
500-188631-7	SS-163	Solid	09/29/20 10:40	10/01/20 10:00	
500-188631-8	SS-164	Solid	09/29/20 10:50	10/01/20 10:00	
500-188631-9	SS-166	Solid	09/29/20 10:55	10/01/20 10:00	
500-188631-10	SS-165	Solid	09/29/20 11:05	10/01/20 10:00	
500-188631-11	SS-167	Solid	09/29/20 11:15	10/01/20 10:00	
500-188631-12	SS-168	Solid	09/29/20 11:25	10/01/20 10:00	
500-188631-13	SS-169	Solid	09/29/20 11:30	10/01/20 10:00	
500-188631-14	SS-170	Solid	09/29/20 11:35	10/01/20 10:00	
500-188631-15	SS-171	Solid	09/29/20 11:40	10/01/20 10:00	
500-188631-16	SS-172	Solid	09/29/20 11:50	10/01/20 10:00	
500-188631-17	SS-156	Solid	09/29/20 13:30	10/01/20 10:00	
500-188631-18	SS-155	Solid	09/29/20 13:45	10/01/20 10:00	
500-188631-19	SS-154	Solid	09/29/20 13:50	10/01/20 10:00	
500-188631-20	SS-153	Solid	09/29/20 14:15	10/01/20 10:00	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-159
Date Collected: 09/28/20 14:05
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-1
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2900	H	1000	670	mg/Kg			10/22/20 18:59	1

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-158
Date Collected: 09/28/20 14:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-2
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3400	H	1000	670	mg/Kg			10/22/20 19:04	1

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-157
Date Collected: 09/28/20 14:40
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-3
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	17000	H	1000	670	mg/Kg			10/22/20 19:08	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-160
Date Collected: 09/28/20 14:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-4
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4900	H	1000	670	mg/Kg			10/23/20 08:32	1

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-161
Date Collected: 09/28/20 15:20
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-5
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2200	H	1000	670	mg/Kg			10/23/20 08:36	1

1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-162
Date Collected: 09/29/20 10:35
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-6
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1800		1000	670	mg/Kg			10/13/20 14:30	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-163
Date Collected: 09/29/20 10:40
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-7
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2500		1000	670	mg/Kg			10/13/20 14:34	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-164
Date Collected: 09/29/20 10:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-8
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	11000		1000	670	mg/Kg			10/13/20 14:38	1

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-166
Date Collected: 09/29/20 10:55
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-9
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4300		1000	670	mg/Kg			10/13/20 14:43	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-165
Date Collected: 09/29/20 11:05
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-10
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3600		1000	670	mg/Kg			10/13/20 14:47	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-167
Date Collected: 09/29/20 11:15
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-11
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6800		1000	670	mg/Kg			10/13/20 14:51	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-168
Date Collected: 09/29/20 11:25
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-12
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	13000		1000	670	mg/Kg			10/13/20 14:55	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-169
Date Collected: 09/29/20 11:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-13
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2800		1000	670	mg/Kg			10/13/20 12:54	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-170
Date Collected: 09/29/20 11:35
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-14
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	19000		1000	670	mg/Kg			10/13/20 12:58	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-171
Date Collected: 09/29/20 11:40
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-15
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7300		1000	670	mg/Kg			10/13/20 13:03	1

- 1
- 2
- 3
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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-172
Date Collected: 09/29/20 11:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-16
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		1000	670	mg/Kg			10/13/20 13:08	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-156
Date Collected: 09/29/20 13:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-17
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4300		1000	670	mg/Kg			10/13/20 13:13	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-155
Date Collected: 09/29/20 13:45
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-18
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1600		1000	670	mg/Kg			10/13/20 13:17	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-154
Date Collected: 09/29/20 13:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-19
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9400		1000	670	mg/Kg			10/13/20 13:22	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-153
Date Collected: 09/29/20 14:15
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-20
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	5600		1000	670	mg/Kg			10/13/20 13:27	1

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

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 Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-159923/5
Matrix: Solid
Analysis Batch: 159923

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	<1000		1000	670	mg/Kg			10/13/20 13:05	1

Lab Sample ID: LCS 200-159923/6
Matrix: Solid
Analysis Batch: 159923

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	8300	10300		mg/Kg		124	75 - 125

Lab Sample ID: MB 200-159924/5
Matrix: Solid
Analysis Batch: 159924

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	<1000		1000	670	mg/Kg			10/13/20 12:30	1

Lab Sample ID: LCS 200-159924/6
Matrix: Solid
Analysis Batch: 159924

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	8300	7900		mg/Kg		95	75 - 125

Lab Sample ID: MB 200-160346/5
Matrix: Solid
Analysis Batch: 160346

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	<1000		1000	670	mg/Kg			10/22/20 18:12	1

Lab Sample ID: LCS 200-160346/6
Matrix: Solid
Analysis Batch: 160346

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	8300	8720		mg/Kg		105	75 - 125

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-159

Date Collected: 09/28/20 14:05

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	160346	10/22/20 18:59	RWM	TAL BUR

Client Sample ID: SS-158

Date Collected: 09/28/20 14:30

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	160346	10/22/20 19:04	RWM	TAL BUR

Client Sample ID: SS-157

Date Collected: 09/28/20 14:40

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	160346	10/22/20 19:08	RWM	TAL BUR

Client Sample ID: SS-160

Date Collected: 09/28/20 14:50

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	160346	10/23/20 08:32	RWM	TAL BUR

Client Sample ID: SS-161

Date Collected: 09/28/20 15:20

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	160346	10/23/20 08:36	RWM	TAL BUR

Client Sample ID: SS-162

Date Collected: 09/29/20 10:35

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159923	10/13/20 14:30	KFW	TAL BUR

Client Sample ID: SS-163

Date Collected: 09/29/20 10:40

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159923	10/13/20 14:34	KFW	TAL BUR

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-164

Date Collected: 09/29/20 10:50

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159923	10/13/20 14:38	KFW	TAL BUR

Client Sample ID: SS-166

Date Collected: 09/29/20 10:55

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159923	10/13/20 14:43	KFW	TAL BUR

Client Sample ID: SS-165

Date Collected: 09/29/20 11:05

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159923	10/13/20 14:47	KFW	TAL BUR

Client Sample ID: SS-167

Date Collected: 09/29/20 11:15

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159923	10/13/20 14:51	KFW	TAL BUR

Client Sample ID: SS-168

Date Collected: 09/29/20 11:25

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159923	10/13/20 14:55	KFW	TAL BUR

Client Sample ID: SS-169

Date Collected: 09/29/20 11:30

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-13

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 12:54	KFW	TAL BUR

Client Sample ID: SS-170

Date Collected: 09/29/20 11:35

Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 12:58	KFW	TAL BUR

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Client Sample ID: SS-171
Date Collected: 09/29/20 11:40
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:03	KFW	TAL BUR

Client Sample ID: SS-172
Date Collected: 09/29/20 11:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:08	KFW	TAL BUR

Client Sample ID: SS-156
Date Collected: 09/29/20 13:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:13	KFW	TAL BUR

Client Sample ID: SS-155
Date Collected: 09/29/20 13:45
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:17	KFW	TAL BUR

Client Sample ID: SS-154
Date Collected: 09/29/20 13:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-19
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:22	KFW	TAL BUR

Client Sample ID: SS-153
Date Collected: 09/29/20 14:15
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188631-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:27	KFW	TAL BUR

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188631-1

Laboratory: Eurofins TestAmerica, Burlington

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399133350	08-31-21

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Chain of Custody Record

Client Information		Sampler: Amy Siefker		Lab PM:		Carrier Tracking No(s)		COC No 500-85641-38770 2		
Client Contact: Genevieve Vander Velden		Phone:		E-Mail:				Page Page 2 of 2		
Company: ARCADIS U.S., Inc.				Analysis Requested						Job # 500-188631
Address: 126 North Jefferson Street Suite 400		Due Date Requested:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 9060A - TOC						Total Number of Containers 2
City: Milwaukee		TAT Requested (days): Standard								
State, Zip: WI, 53202		PO #:								
Phone:		WO #:								
Email: Genevieve.VanderVelden@arcadis.com		Project #: 30005294.00020								
Project Name: Marinette Supplemental Site Investigat		SSOW#:								Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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) Other:
Site: Marinette, WI										Special Instructions/Note:
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:	
12 SS-168		9/29/20	1125	G	Solid	N	N	1		
13 SS-169		↓	1130	↓	Solid	↓	↓	1		
14 SS-170		↓	1135	↓	Solid	↓	↓	1		
15 SS-171		↓	1140	↓	Solid	↓	↓	1		
16 SS-172		↓	1150	↓	Solid	↓	↓	1		
17 SS-156		↓	1330	↓	Solid	↓	↓	1		
18 SS-155		↓	1345	↓	Solid	↓	↓	1		
19 SS-154		↓	1350	↓	Solid	↓	↓	1		
20 SS-153		↓	1415	↓	Solid	↓	↓	1		
					Solid					
					Solid					
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 Siefker		Date/Time: 9/30/20 / 1630		Company:		Received by: Shirley Scott		Date/Time: 10/1/20 1000		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks						

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

MARINETTE, WI 54143
UNITED STATES US

5 A
10:30 2021
10:01
20
MAN
3211

TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484


(708) 634 - 6200

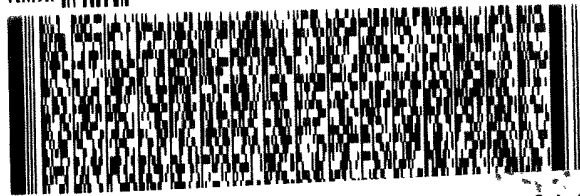
REF:

500-188631 Wayt

INU:

DEPT:

RMA: 



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PRIORITY OVERNIGHT

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TRK# 7125 4942 2070
0221

NA JOTA

60484
IL-US ORD



48qt.

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

SHIP DATE: 06FEB20
ACTWT: 25.00 LB MAN
CAD: 525155/CAFE3211

MARINETTE, WI 54143
UNITED STATES US

TO

TESTAMERICA CHICAGO
2417 BOND STREET


UNIVERSITY PARK IL 60484 - 3101

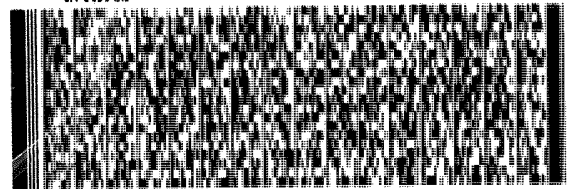
(708) 634 - 6200

REF:

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DEPT:

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J16111806660-16

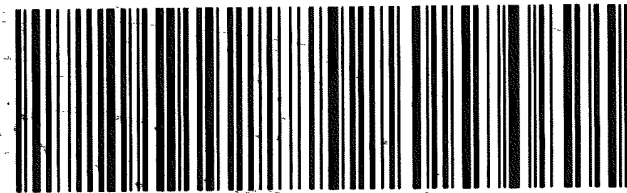
FedEx

TRK# 7125 4941 9669
0221

NA JOTA

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PRIORITY OVERNIGHT

60484
IL-US ORD



48qt.

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Eurofins TestAmerica, Chicago

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

Chain of Custody Record



ifins | Environment Testing
 America

500-188631 Chain of Custody

Client Information (Sub Contract Lab)		Sampler:		Lab PM:		Fredrick, Sandie		403.1	
Client Contact: Shipping/Receiving		Phone:		E-Mail:		sandra.fredrick@eurofinset.com		Wisconsin	
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Wisconsin		Job #:		500-188631-1		Page 1 of 3	
Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403 Phone: 802-660-1990(Tel) 802-660-1919(Fax) Email:		Due Date Requested: 10/13/2020 TAT Requested (days):		PO #:		WO #:		Project Name: Marinette Supp Site Inv - 30015294.00020 Project #: 50018123 Site: SSOW#:	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	
								Lloyd_Kahn/TOC	
SS-159 (500-188631-1)		9/28/20		14:05 Central		Solid		X	
SS-158 (500-188631-2)		9/28/20		14:30 Central		Solid		X	
SS-157 (500-188631-3)		9/28/20		14:40 Central		Solid		X	
SS-160 (500-188631-4)		9/28/20		14:50 Central		Solid		X	
SS-161 (500-188631-5)		9/28/20		15:20 Central		Solid		X	
SS-162 (500-188631-6)		9/29/20		10:35 Central		Solid		X	
SS-163 (500-188631-7)		9/29/20		10:40 Central		Solid		X	
SS-164 (500-188631-8)		9/29/20		10:50 Central		Solid		X	
SS-166 (500-188631-9)		9/29/20		10:55 Central		Solid		X	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.</p>									
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 10/1/20 16:30		Company: TA		Received by: <i>[Signature]</i>		Date/Time: 10/2/20 10:30	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:				



Eurofins TestAmerica, Chicago

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

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-140403.2				
Client Contact: Shipping/Receiving		Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin: Wisconsin	Page: Page 2 of 3				
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Wisconsin			Job #: 500-188631-1				
Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403 Phone: 802-660-1990(Tel) 802-660-1919(Fax) Email:		Due Date Requested: 10/13/2020	Analysis Requested		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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) Other:				
Project Name: Marinette Supp Site Inv - 30015294.00020		TAT Requested (days):							
Site:		PO #:							
SSOW#:		WO #:							
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Lloyd_Kahn/ TOC	Special Instructions/Note:		
SS-165 (500-188631-10)		9/29/20	11:05 Central	Solid		X			
SS-167 (500-188631-11)		9/29/20	11:15 Central	Solid		X			
SS-168 (500-188631-12)		9/29/20	11:25 Central	Solid		X			
SS-169 (500-188631-13)		9/29/20	11:30 Central	Solid		X			
SS-170 (500-188631-14)		9/29/20	11:35 Central	Solid		X			
SS-171 (500-188631-15)		9/29/20	11:40 Central	Solid		X			
SS-172 (500-188631-16)		9/29/20	11:50 Central	Solid		X			
SS-156 (500-188631-17)		9/29/20	13:30 Central	Solid		X			
SS-155 (500-188631-18)		9/29/20	13:45 Central	Solid		X			
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.									
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:					
Relinquished by: <i>[Signature]</i>		Date/Time: 10/12/20 16:30	Company: TA	Received by: <i>[Signature]</i>		Date/Time: 10/12/2020 10:30	Company: TA-Burlington		
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:				

Page 36 of 41

10/23/2020



Eurofins TestAmerica, Chicago

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

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-140403.3			
Client Contact: Shipping/Receiving		Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin: Wisconsin	Page: Page 3 of 3			
Company: TestAmerica Laboratories, Inc.			Accreditations Required (See note): State - Wisconsin		Job #: 500-188631-1			
Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403 Phone: 802-660-1990(Tel) 802-660-1919(Fax) Email:		Due Date Requested: 10/13/2020	Analysis Requested			Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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) Other:		
Project Name: Marinette Supp Site Inv - 30015294.00020		TAT Requested (days):						
Site:		PO #:						
Project #: 50018123		WO #:						
SSOW#:		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Lloyd_Kahn/ TOC			Special Instructions/Note:		
Sample Identification - Client ID (Lab ID)		Sample Date					Sample Time	Sample Type (C=comp, G=grab)
SS-154 (500-188631-19)		9/29/20					13:50 Central	Solid
SS-153 (500-188631-20)		9/29/20					14:15 Central	Solid

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

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:		Date:	Time:
Relinquished by: <i>[Signature]</i>		Date/Time: 10/1/20 1630	Company: TA
Relinquished by:		Date/Time:	Company:
Relinquished by:		Date/Time:	Company:
Relinquished by:		Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:	
Cooler Temperature(s) °C and Other Remarks:			

Page 37 of 41

10/23/2020



ORIGIN ID: JOTA (708) 534-5200
SAMPLE LOGIN
TESTAMERICA LABS
2417 BOND ST

SHIP DATE: 01OCT20
ACTWT: 25.00 LB MAN
CAD: 033284/CAFE3406

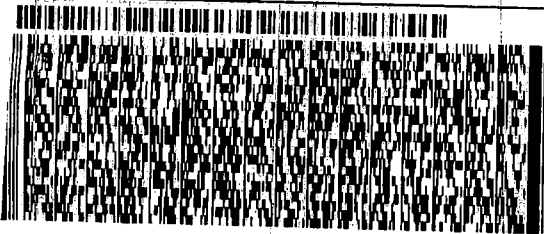
UNIVERSITY PARK, IL 60484
UNITED STATES US

BILL RECIPIENT

TO **SAMPLE RECEIPT**
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 860-1990

REF: 188685 \$\$



FedEx
Express

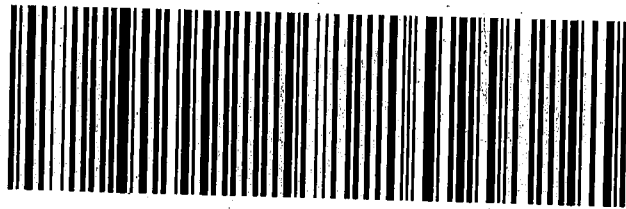


1 of 5
TRK# 1893 4449 6300
0201
MASTER

FRI - 02 OCT 10:30A
PRIORITY OVERNIGHT

NL BTVA

05403
VT-US BTV



ORIGIN ID: JOTA (708) 534-5200
SAMPLE LOGIN
TESTAMERICA LABS
2417 BOND ST

SHIP DATE: 01OCT20
ACTWT: 25.00 LB MAN
CAD: 033284/CAFE3406

UNIVERSITY PARK, IL 60484
UNITED STATES US

BILL RECIPIENT

TO **SAMPLE RECEIPT**
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 860-1990

REF: 188682 625 631 636 637 \$\$



FedEx
Express

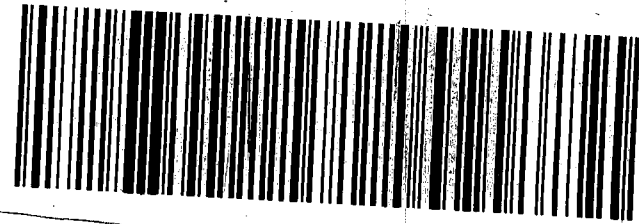


4 of 5
MPS# 1893 4449 6333
0263
Mstr# 1893 4449 6300

FRI - 02 OCT 10:30A
PRIORITY OVERNIGHT

NL BTVA

05403
VT-US BTV



Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-188631-1

Login Number: 188631

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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	2.1,1.6
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 <math><6\text{mm}</math> (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: 500-188631-1

Login Number: 188631

List Number: 2

Creator: Nye, Elizabeth A

List Source: Eurofins TestAmerica, Burlington

List Creation: 10/02/20 12:25 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	Lab does not accept radioactive samples.
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	2.2, 0.3° C
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.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
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: 500-188631-1

Login Number: 188631

List Number: 3

Creator: Nye, Elizabeth A

List Source: Eurofins TestAmerica, Burlington

List Creation: 10/02/20 01:46 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	Lab does not accept radioactive samples.
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	0.3, 2.2° C
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.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

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

Laboratory Job ID: 500-188636-1

Client Project/Site: Marinette Supp Site Inv - 30015294.00020

For:

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

Attn: Lisa Rutkowski



*Authorized for release by:
10/23/2020 12:06:49 PM*

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 Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Job ID: 500-188636-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

**Job Narrative
500-188636-1**

Comments

No additional comments.

Receipt

The samples were received on 10/1/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6° C and 2.1° C.

General Chemistry

Method Lloyd Kahn: The instrument paused analysis at 19:08 10/22/2020. Analysis was resumed at 08:32 10/23/2020 500-188636-19, CCB 200-160346/18, CCB 200-160346/27, CCV 200-160346/17 and CCV 200-160346/26

Method Lloyd Kahn: Reanalysis of the following samples was performed outside of the analytical holding time due to initial QC failure and samples responding above calibration range. 500-188636-19.

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 Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Method	Method Description	Protocol	Laboratory
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

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Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-188636-1	SS-152	Solid	09/29/20 14:25	10/01/20 10:00	
500-188636-2	SS-151	Solid	09/29/20 14:35	10/01/20 10:00	
500-188636-3	SS-150	Solid	09/29/20 14:50	10/01/20 10:00	
500-188636-4	SS-149	Solid	09/29/20 15:00	10/01/20 10:00	
500-188636-5	SS-148	Solid	09/29/20 15:20	10/01/20 10:00	
500-188636-6	SS-147	Solid	09/29/20 15:30	10/01/20 10:00	
500-188636-7	SS-146	Solid	09/29/20 15:40	10/01/20 10:00	
500-188636-8	SS-145	Solid	09/29/20 16:00	10/01/20 10:00	
500-188636-9	SS-144	Solid	09/29/20 16:15	10/01/20 10:00	
500-188636-10	SS-143	Solid	09/29/20 16:25	10/01/20 10:00	
500-188636-11	SS-142	Solid	09/29/20 16:35	10/01/20 10:00	
500-188636-13	SS-173	Solid	09/30/20 12:30	10/01/20 10:00	
500-188636-19	SS-179	Solid	09/30/20 12:55	10/01/20 10:00	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-152
Date Collected: 09/29/20 14:25
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-1
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1700		1000	670	mg/Kg			10/13/20 13:31	1

- 1
- 2
- 3
- 4
- 5
- 6
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- 11
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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-151
Date Collected: 09/29/20 14:35
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-2
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2600		1000	670	mg/Kg			10/13/20 13:36	1

- 1
- 2
- 3
- 4
- 5
- 6
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- 8
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- 11
- 12

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-150
Date Collected: 09/29/20 14:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-3
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7300		1000	670	mg/Kg			10/13/20 13:50	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-149
Date Collected: 09/29/20 15:00
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-4
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6900		1000	670	mg/Kg			10/13/20 13:55	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-148
Date Collected: 09/29/20 15:20
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-5
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4800		1000	670	mg/Kg			10/13/20 13:59	1

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-147
Date Collected: 09/29/20 15:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-6
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2900		1000	670	mg/Kg			10/13/20 14:04	1

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

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-146
Date Collected: 09/29/20 15:40
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-7
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4000		1000	670	mg/Kg			10/13/20 14:09	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-145
Date Collected: 09/29/20 16:00
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-8
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	76000		1000	670	mg/Kg			10/13/20 14:14	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-144
Date Collected: 09/29/20 16:15
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-9
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1600		1000	670	mg/Kg			10/13/20 14:18	1

- 1
- 2
- 3
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- 5
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- 9
- 10
- 11
- 12

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-143
Date Collected: 09/29/20 16:25
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-10
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4600		1000	670	mg/Kg			10/13/20 14:23	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-142
Date Collected: 09/29/20 16:35
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-11
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2300		1000	670	mg/Kg			10/13/20 14:28	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-173
Date Collected: 09/30/20 12:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-13
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000		1000	670	mg/Kg			10/14/20 14:40	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-179
Date Collected: 09/30/20 12:55
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-19
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	8100	H	1000	670	mg/Kg			10/23/20 08:50	1

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

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 Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-159924/5
Matrix: Solid
Analysis Batch: 159924

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	<1000		1000	670	mg/Kg			10/13/20 12:30	1

Lab Sample ID: LCS 200-159924/6
Matrix: Solid
Analysis Batch: 159924

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	8300	7900		mg/Kg		95	75 - 125

Lab Sample ID: MB 200-160024/5
Matrix: Solid
Analysis Batch: 160024

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	<1000		1000	670	mg/Kg			10/14/20 13:25	1

Lab Sample ID: LCS 200-160024/6
Matrix: Solid
Analysis Batch: 160024

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	8300	7020		mg/Kg		85	75 - 125

Lab Sample ID: MB 200-160346/5
Matrix: Solid
Analysis Batch: 160346

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	<1000		1000	670	mg/Kg			10/22/20 18:12	1

Lab Sample ID: LCS 200-160346/6
Matrix: Solid
Analysis Batch: 160346

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	8300	8720		mg/Kg		105	75 - 125

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-152
Date Collected: 09/29/20 14:25
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:31	KFW	TAL BUR

Client Sample ID: SS-151
Date Collected: 09/29/20 14:35
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:36	KFW	TAL BUR

Client Sample ID: SS-150
Date Collected: 09/29/20 14:50
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:50	KFW	TAL BUR

Client Sample ID: SS-149
Date Collected: 09/29/20 15:00
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:55	KFW	TAL BUR

Client Sample ID: SS-148
Date Collected: 09/29/20 15:20
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 13:59	KFW	TAL BUR

Client Sample ID: SS-147
Date Collected: 09/29/20 15:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 14:04	KFW	TAL BUR

Client Sample ID: SS-146
Date Collected: 09/29/20 15:40
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 14:09	KFW	TAL BUR

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Client Sample ID: SS-145
Date Collected: 09/29/20 16:00
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 14:14	KFW	TAL BUR

Client Sample ID: SS-144
Date Collected: 09/29/20 16:15
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 14:18	KFW	TAL BUR

Client Sample ID: SS-143
Date Collected: 09/29/20 16:25
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 14:23	KFW	TAL BUR

Client Sample ID: SS-142
Date Collected: 09/29/20 16:35
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	159924	10/13/20 14:28	KFW	TAL BUR

Client Sample ID: SS-173
Date Collected: 09/30/20 12:30
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	160024	10/14/20 14:40	RWM	TAL BUR

Client Sample ID: SS-179
Date Collected: 09/30/20 12:55
Date Received: 10/01/20 10:00

Lab Sample ID: 500-188636-19
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	160346	10/23/20 08:50	RWM	TAL BUR

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990



Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette Supp Site Inv - 30015294.00020

Job ID: 500-188636-1

Laboratory: Eurofins TestAmerica, Burlington

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

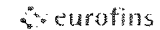
Authority	Program	Identification Number	Expiration Date
Wisconsin	State	399133350	08-31-21

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Eurofins TestAmerica, Chicago

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

Chain of Custody Record



TestAmerica, Chicago
10000 W. 100th Street
Chicago, IL 60644

Client Information		Sampler Amy Siefker		Lab PM		Carrier Tracking No(s)		COC No 500-85641-38770 3	
Client Contact Genevieve Vander Velden		Phone		E-Mail				Page Page 2 of 7	
Company ARCADIS U.S., Inc.		Due Date Requested:		Field Filtered Sample (Yes or No) Performs MS/MSD (Yes or No) Z 9060A - TOC		Total Number of Containers		Analysis Requested Job # 500-188636 Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - USP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
Address: 126 North Jefferson Street Suite 400		TAT Requested (days): Standard							
City Milwaukee		PO #:							
State, Zip WI, 53202		WO #:							
Phone 500-188636 COC		Project # 30005294.00020		SSOW#					
Email Genevieve.VanderVelden@arcadis.com		Project Name Marinette Supplemental Site Investigatio		Site Marinette, WI					
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air)	Preservation Code:		Special Instructions/Note:	
1	SS-152	9/29/20	1425	G	Solid	N	Z		
2	SS-151		1435		Solid				
3	SS-150		1450		Solid				
4	SS-149		1500		Solid				
5	SS-148		1520		Solid				
6	SS-147		1530		Solid				
7	SS-146		1540		Solid				
8	SS-145		1600		Solid				
9	SS-144		1615		Solid				
10	SS-143		1630		Solid				
11	SS-142		1635		Solid				
Possible Hazard Identification <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						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <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 Amy Siefker		Date/Time 9/30/20 / 1630		Company		Received by Shirley Scott		Date/Time 10/1/20 1000	
Relinquished by		Date/Time		Company		Received by		Date/Time	
Relinquished by		Date/Time		Company		Received by		Date/Time	
Custody Seals Intact Δ Yes Δ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks 1/1 → 2/1, 0.6 → 1.6					

Fredrick, Sandie

From: Vander Velden, Genevieve <Genevieve.VanderVelden@arcadis.com>
Sent: Monday, October 05, 2020 2:49 PM
To: Fredrick, Sandie; Wheeler, Allison; Rutkowski, Lisa
Subject: RE: Eurofins TestAmerica Sample Login Confirmation files from 500-188636 Marinette Supp Site Inv - 30015294.00020

Importance: High

EXTERNAL EMAIL*

Hi Sandie,

For this login, we need to cancel TOC for:

SS-140
SS-174
SS-175
SS-176
SS-177
SS-178
SS-180

Thanks,
Genevieve

From: Sandie Fredrick <sandra.fredrick@eurofinset.com>
Sent: Thursday, October 1, 2020 5:30 PM
To: Wheeler, Allison <Allison.Wheeler@arcadis.com>; Vander Velden, Genevieve <Genevieve.VanderVelden@arcadis.com>; Hamlin, Jeremy <Jeremiah.Hamlin@arcadis.com>; Rutkowski, Lisa <Lisa.Rutkowski@arcadis.com>
Subject: Eurofins TestAmerica Sample Login Confirmation files from 500-188636 Marinette Supp Site Inv - 30015294.00020

Hello Everyone,

Attached, please find the Sample Confirmation files for job 500-188636; Marinette Supp Site Inv - 30015294.00020

Please feel free to contact me if you have any questions.

Thank you.

Sandie Fredrick
Project Manager

Eurofins TestAmerica, Chicago
Phone: 920-261-1660

E-mail: sandra.fredrick@eurofinset.com
www.eurofinsus.com/env



Reference: [500-558327]
Attachments: 3

Please let us know if we met your expectations by rating the service you received from Eurofins TestAmerica on this project by visiting our website at: [Project Feedback](#)

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* WARNING - EXTERNAL: This email originated from outside of Eurofins TestAmerica. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!



ORIGIN ID:RRLA (262) 202-5955
GUEST: JEREMY HAMLIN
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD
MARINETTE, WI 54143
UNITED STATES US

5 A
10:30
20/1
10:01
519
16

20
MAN
3211

REFR/DAC



TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484

(708) 634-6200

REF:

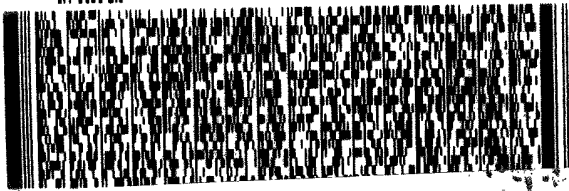
500-188636 Wayt

INU:

PO:

DEPT:

RMA: ||| ||| |||



FedEx
Express



41109090811131

FedEx

TRK#
0221

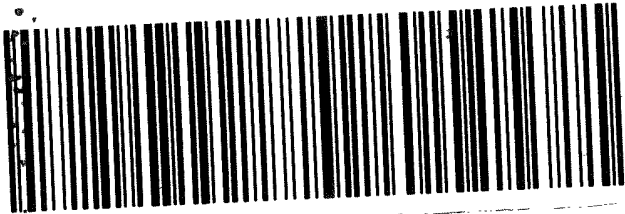
7125 4942 2070

THU - 01 OCT 10:30A
PRIORITY OVERNIGHT

NA JOTA

60484
IL-US ORD

6697-435 BPDMS EXP 09/21



48qt.

ORIGIN ID:RRLA (262) 202-5955
GUEST: JEREMY HAMLIN
COUNTRY INN & SUITES
2020 OLD PESHTIGO RD
MARINETTE, WI 54143
UNITED STATES US

SHIP DATE: 06FEB20
ACTWGT: 25.00 LB MAN
CAD: 525155/CAFE3211

TO

TESTAMERICA CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484-3101

(708) 634-6200

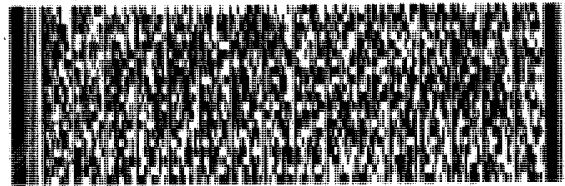
REF:

INU:

PO:

DEPT:

RMA: ||| ||| |||



FedEx
Express



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FedEx

TRK#
0221

7125 4941 9669

THU - 01 OCT 10:30A
PRIORITY OVERNIGHT

NA JOTA

60484
IL-US ORD

6697-435 BPDMS EXP 09/21



48qt.

- 1
- 2
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- 4
- 5
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- 10
- 11
- 12

Eurofins TestAmerica, Chicago

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

Chain of Custody Record



eurofins Environment Testing
 America

500-188636 Chain of Custody

Client Information (Sub Contract Lab)		Sampler:		Lab PM: Fredrick, Sandie		Job No: J-140405.1																																																																																																																																																																																																									
Client Contact: Shipping/Receiving		Phone:		E-Mail: sandra.fredrick@eurofinset.com		Page: 1 of 3																																																																																																																																																																																																									
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Wisconsin		State or origin: Wisconsin		Job #: 500-188636-1																																																																																																																																																																																																									
Address: 30 Community Drive, Suite 11,		Due Date Requested: 10/13/2020		Analysis Requested				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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)																																																																																																																																																																																																							
City: South Burlington		TAT Requested (days):																																																																																																																																																																																																													
State, Zip: VT, 05403		PO #:		Lloyd Kahn/TOC				Special Instructions/Note:																																																																																																																																																																																																							
Phone: 802-660-1990(Tel) 802-660-1919(Fax)		WO #:																																																																																																																																																																																																													
Email:		Project #: 50018123		<table border="1"> <thead> <tr> <th>Sample Identification - Client ID (Lab ID)</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>SS-152 (500-188636-1)</td> <td>9/29/20</td> <td>14:25 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-151 (500-188636-2)</td> <td>9/29/20</td> <td>14:35 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-150 (500-188636-3)</td> <td>9/29/20</td> <td>14:50 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-149 (500-188636-4)</td> <td>9/29/20</td> <td>15:00 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-148 (500-188636-5)</td> <td>9/29/20</td> <td>15:20 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-147 (500-188636-6)</td> <td>9/29/20</td> <td>15:30 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-146 (500-188636-7)</td> <td>9/29/20</td> <td>15:40 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-145 (500-188636-8)</td> <td>9/29/20</td> <td>16:00 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SS-144 (500-188636-9)</td> <td>9/29/20</td> <td>16:15 Central</td> <td></td> <td>Solid</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)																SS-152 (500-188636-1)	9/29/20	14:25 Central		Solid		X														SS-151 (500-188636-2)	9/29/20	14:35 Central		Solid		X														SS-150 (500-188636-3)	9/29/20	14:50 Central		Solid		X														SS-149 (500-188636-4)	9/29/20	15:00 Central		Solid		X														SS-148 (500-188636-5)	9/29/20	15:20 Central		Solid		X														SS-147 (500-188636-6)	9/29/20	15:30 Central		Solid		X														SS-146 (500-188636-7)	9/29/20	15:40 Central		Solid		X														SS-145 (500-188636-8)	9/29/20	16:00 Central		Solid		X														SS-144 (500-188636-9)	9/29/20	16:15 Central		Solid		X													
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)					Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)																																																																																																																																																																																																							
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SS-149 (500-188636-4)	9/29/20	15:00 Central		Solid		X																																																																																																																																																																																																									
SS-148 (500-188636-5)	9/29/20	15:20 Central		Solid		X																																																																																																																																																																																																									
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SS-144 (500-188636-9)	9/29/20	16:15 Central		Solid		X																																																																																																																																																																																																									
Project Name: Marinette Supp Site Inv - 30015294.00020		SSOW#:		Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.																																																																																																																																																																																																											
Site:		SSOW#:		Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																																																																																																																																																																																																							
				Unconfirmed				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																																																																																																																																																							
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:																																																																																																																																																																																																											
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:																																																																																																																																																																																																									
Relinquished by: <i>[Signature]</i>		Date/Time: 10/1/20 1630		Company: TA		Received by: <i>[Signature]</i>		Date/Time: 10/2/20 10:30		Company: TAB USA																																																																																																																																																																																																					
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:																																																																																																																																																																																																											

Page 29 of 34

10/23/2020



Eurofins TestAmerica, Chicago

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

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:		Lab PM: Fredrick, Sandie		Carrier Tracking No(s):		COC No: 500-140405.2					
Client Contact: Shipping/Receiving		Phone:		E-Mail: sandra.fredrick@eurofinset.com		State of Origin: Wisconsin		Page: Page 2 of 3					
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State - Wisconsin				Job #: 500-188636-1					
Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403		Due Date Requested: 10/13/2020		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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) Other:			
Project Name: Marinette Supp Site Inv - 30015294.00020		TAT Requested (days):											
Site:		PO #:											
Project #: 50018123		WO #:											
SSOW#:		Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)		Special Instructions/Note:	
SS-143 (500-188636-10)		9/29/20		16:25 Central		Solid		X		Lloyd_Kahn/TOC			
SS-142 (500-188636-11)		9/29/20		16:35 Central		Solid		X					
SS-140 (500-188636-12)		9/29/20		17:25 Central		Solid		X					
SS-173 (500-188636-13)		9/30/20		12:30 Central		Solid		X					
SS-174 (500-188636-14)		9/30/20		11:45 Central		Solid		X					
SS-175 (500-188636-15)		9/30/20		11:55 Central		Solid		X					
SS-176 (500-188636-16)		9/30/20		12:10 Central		Solid		X					
SS-177 (500-188636-17)		9/30/20		13:40 Central		Solid		X					
SS-178 (500-188636-18)		9/30/20		13:25 Central		Solid		X					
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.													
Possible Hazard Identification Unconfirmed						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:							
Relinquished by: <i>[Signature]</i>		Date/Time: <i>10/12/20 1630</i>		Company: <i>TA</i>		Received by: <i>[Signature]</i>		Date/Time: <i>10/12/20 10:36</i>		Company: <i>TAB/AR</i>			
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:							

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10/23/2020



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)		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact: Shipping/Receiving		Phone:		Fredrick, Sandie		E-Mail:		500-140405.3	
Company: TestAmerica Laboratories, Inc.		Address: 30 Community Drive, Suite 11, City: South Burlington State, Zip: VT, 05403		Due Date Requested: 10/13/2020		Accreditations Required (See note): State - Wisconsin		Page: Page 3 of 3	
Phone: 802-660-1990(Tel) 802-660-1919(Fax)		PO #:		TAT Requested (days):		Job #: 500-188636-1		Preservation Codes:	
Email:		WO #:		Project Name: Marinette Supp Site Inv - 30015294.00020		Project #: 50018123		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 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)	
Project Name: Marinette Supp Site Inv - 30015294.00020		Project #: 50018123		Site:		SSOW#:		Other:	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	
SS-179 (500-188636-19)		9/30/20		12:55 Central		Solid		Lloyd_Kahn/TOC	
SS-180 (500-188636-20)		9/30/20		14:05 Central		Solid		Special Instructions/Note:	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.</p>									
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:				
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:		
Relinquished by: <i>[Signature]</i>			Date/Time: 10/1/20 1630		Company: <i>[Signature]</i>		Received by: <i>[Signature]</i>		
Relinquished by:			Date/Time:		Company:		Received by: <i>[Signature]</i>		
Relinquished by:			Date/Time:		Company:		Received by: <i>[Signature]</i>		
Custody Seals Intact: Δ Yes Δ No			Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:				

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10/23/2020



ORIGIN ID: JOTA (708) 534-5200
SAMPLE LOGIN
TESTAMERICA LABS
2417 BOND ST

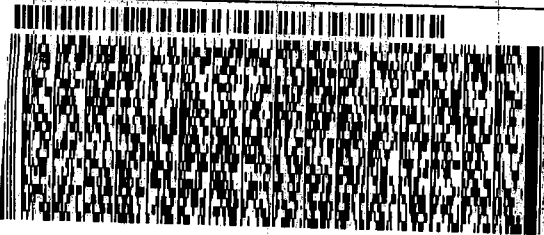
SHIP DATE: 01OCT20
ACTWGT: 25.00 LB MAN
CAD: 039284/CAFE3406

UNIVERSITY PARK, IL 60484
UNITED STATES US

BILL RECIPIENT

TO **SAMPLE RECEIPT**
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 660-1890
REF: 188685 SS

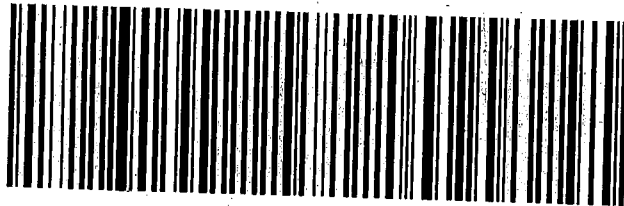


1 of 5
TRK# 1893 4449 6300
0201
MASTER

FRI - 02 OCT 10:30A
PRIORITY OVERNIGHT

NL BTVA

05403
VT-US BTV



ORIGIN ID: JOTA (708) 534-5200
SAMPLE LOGIN
TESTAMERICA LABS
2417 BOND ST

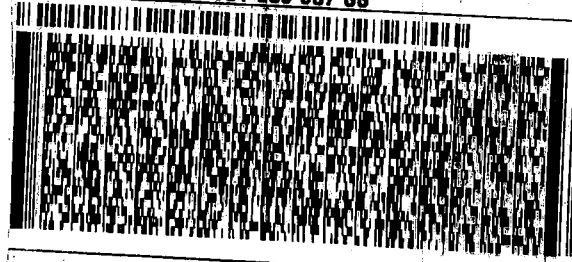
SHIP DATE: 01OCT20
ACTWGT: 52.00 LB MAN
CAD: 039284/CAFE3406

UNIVERSITY PARK, IL 60484
UNITED STATES US

BILL RECIPIENT

TO **SAMPLE RECEIPT**
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 660-1890
REF: 188682 625 631 636 637 SS

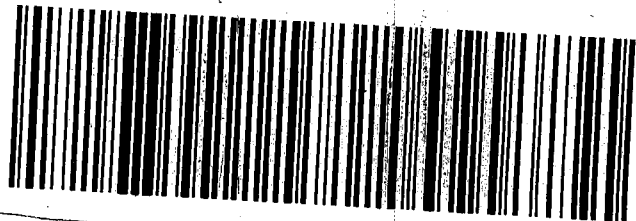


4 of 5
MPS# 1893 4449 6333
0263
Mstr# 1893 4449 6300

FRI - 02 OCT 10:30A
PRIORITY OVERNIGHT

NL BTVA

05403
VT-US BTV



Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-188636-1

Login Number: 188636

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	2.1,1.6
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: 500-188636-1

Login Number: 188636

List Number: 2

Creator: Nye, Elizabeth A

List Source: Eurofins TestAmerica, Burlington

List Creation: 10/02/20 12:25 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	Lab does not accept radioactive samples.
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	2.2, 0.3° C
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.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	