ARCADIS Design & Consultancy for natural and built assets

David Neste
Wisconsin Department of Natural Resources
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ENVIRONMENT

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

Date:
August 28, 2020

Contact:
Ben Verburg, P.E.

Phone:
414 276 7742

Email:
Ben.Verburg@arcadis.com

Our ref:
30015294

Dear Mr. Neste:

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

A large amount of data is collected through the site investigation process. Tyco has included in work plans an estimated schedule for data transmittal to the Wisconsin Department of Natural Resources (WDNR). As requested by the WDNR, Tyco provided a project schedule with reports dates and other related project tasks/milestones for review and comment on March 12, 2020. Tyco proposed summary reports that would convey site investigation data to the WDNR (therefore providing data per s. NR 716.12(3)). This *Sample Results Notification* is being provided to satisfy NR716.12(2) for surface water samples that were collected from Ditches A and B.

Surface water samples were collected approximately 10 feet downstream of both the Ditch A and Ditch B treatment system effluent discharge locations on July 28. Figure 1 presents the sample locations. Each surface water sample was a grab sample collected by Arcadis staff from the bank of each ditch. The sample was collected for analysis of per- and polyfluoroalkyl substances (PFAS) using Method 537 (modified) and total suspended solids (TSS) using Method SM 2540D.

Table 1 below summarizes the TSS results and PFAS detections in the samples. Sample SW-39 was collected downstream of the Ditch B treatment system, and sample SW-40 was collected downstream of the Ditch A treatment system. Values for the duplicate sample collected for SW-39 (Ditch B) are presented in brackets in Table 1.

Table 1 Summary of Detections – PFAS

Chemical Name	Units	SW-39 (DitchB)	SW-40 (Ditch A)
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	ng/l	ND **[0.48 J]**	**6.4**
4:2 Fluorotelomer sulfonate	ng/l	**13 J [12 J]**	ND
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ng/l	**900 D [790 D]**	**11 J**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ng/l	**81 [79 DJ]**	**16**
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ng/l	**1.8 J [1.9 J]**	ND
Perfluorobutane sulfonic acid (PFBS)	ng/l	**3.0 [2.9]**	**0.22 J**
Perfluorobutanoic acid (PFBA)	ng/l	**51 [49]**	**4.9**
Perfluorodecanoic acid (PFDA)	ng/l	**2.6 [2.4]**	ND
Perfluoroheptane sulfonic acid (PFHpS)	ng/l	**2.2 [2.1]**	ND
Perfluoroheptanoic acid (PFHpA)	ng/l	**63 [57]**	**3.2**
Perfluorohexane sulfonic acid (PFHxS)	ng/l	**27 [24]**	ND
Perfluorohexanoic acid (PFHxA)	ng/l	**160 [150]**	**4.8**
Perfluorononanoic acid (PFNA)	ng/l	**51 [46]**	**1.9**
Perfluorooctane sulfonamide (FOSA)	ng/l	**12 [11]**	**0.98 J**
Perfluorooctane sulfonic acid (PFOS)	ng/l	**72 [69]**	**6.2**
Perfluorooctanoic acid (PFOA)	ng/l	**1000 D [950 D]**	**6.9**
Perfluoropentane sulfonic acid (PFPeS)	ng/l	**2.0 [2.1]**	ND
Perfluoropentanoic acid (PFPeA)	ng/l	**140 [130]**	**6.6**
Total Suspended Solids	mg/l	**52 J [27 J]**	**2.0 J**

Notes:

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

D Sample was diluted

ng/L nanograms per liter

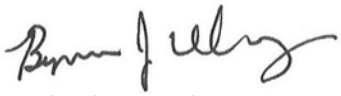
Bracketed results are duplicate sample analytical results.

The cause and significance of PFAS detections in Ditches A and B were presented in the May 2020 Interim Site Investigation Report and the Conceptual Site Model for the Site. Tyco will provide updates to the WDNR as data collection work continues. Additional sampling activities will be outlined in a forthcoming Monitoring Work Plan which will be submitted to WDNR.

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:
Jeff Danko
Rick Bethel
Scott Wahl

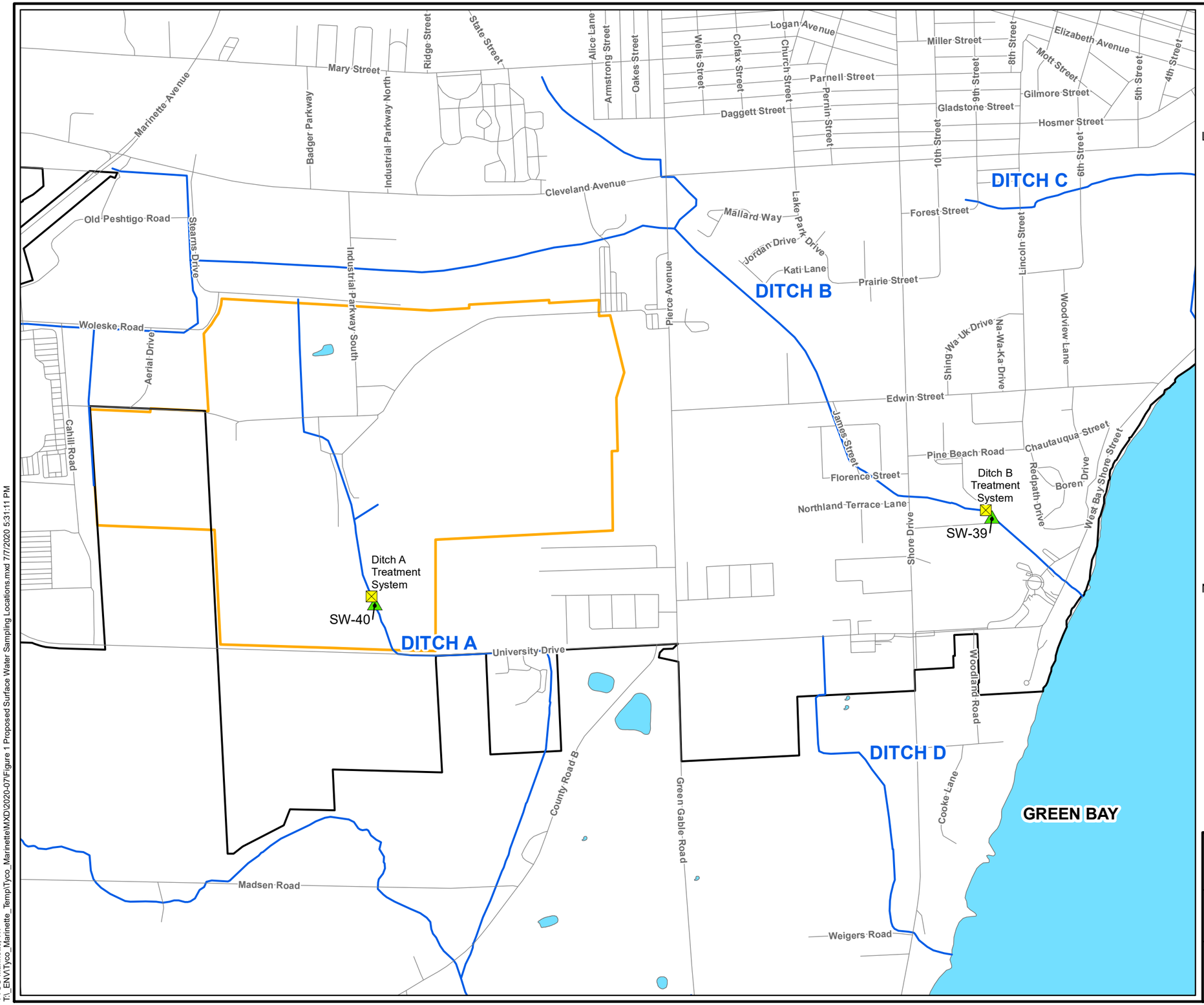
Enclosures:

Figures

1 Surface Water Sample Locations

Attachments

Eurofins Analytical Reports (2)



LEGEND:

- JULY 2020 SURFACE WATER SAMPLING LOCATION
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- ROAD
- DITCH/STREAM
- WATERBODY

NOTES:

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

0 1,000 2,000

GRAPHIC SCALE IN FEET

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

SURFACE WATER SAMPLING LOCATIONS

ARCADIS

FIGURE 1

City: Minneapolis/Citrix Div/Group: IMDVC Created By: Last Saved By: msmiller
TYCO Marinette, WI
T:_ENV\Tyco_Marinette_Temp\Tyco_Marinette\MXD\2020-07\Figure 1 Proposed Surface Water Sampling Locations.mxd 7/7/2020 5:31:11 PM

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ANALYTICAL REPORT

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

Laboratory Job ID: 320-63229-1
Client Project/Site: Marinette, WI 30015294.00002

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

Attn: Lisa Rutkowski

Sandie Fredrick

Authorized for release by:
8/6/2020 1:24:06 PM

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

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Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 320-63229-1
Project/Site: Marinette, WI 30015294.00002

Qualifiers

LCMS

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

Job ID: 320-63229-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-63229-1

Comments
No additional comments.

Receipt
The samples were received on 7/30/2020 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 0.8º C.

LCMS
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 sample: 320-63229-3. The sample was analyzed at a dilution and the IDAs were within method recommended limit. Both sets of data are reported. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Results for samples 320-63229-2 and 320-63229-3 were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method 537 (modified): Results for sample: 320-63229-3 were reported from the analysis of a diluted extract due to sample matrix affecting the quantitation of the Isotope Dilution Analytes (IDAs) and 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.

Methods 3535, 537 (modified): The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: 320-63229-2 and 320-63229-3. These analytes have been qualified; however, the peaks did not saturate the instrument detector. The samples were analyzed at a dilution and both sets of data are reported. 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.

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

Organic Prep
Method 3535: The following samples were yellow prior to extraction: 320-63229-1, 320-63229-1[MS], 320-63229-1[MSD], 320-63229-2 and 320-63229-3. 3535_PFC Aqueous 320-400044

Method 3535: The following samples contain floating particulates in the sample bottle prior to extraction: 320-63229-1, 320-63229-1[MS], 320-63229-1[MSD], 320-63229-2 and 320-63229-3. 3535_PFC Aqueous 320-400044

Method 3535: The following samples were yellow after extraction/final volume: 320-63229-2 and 320-63229-3. 3535_PFC Aqueous 320-400044

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-401176. 3535 PFC Water 320-401176

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

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: SW-40 (072820)
Date Collected: 07/28/20 13:50
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.9**	**B**	1.6	0.29	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluoropentanoic acid (PFPeA)	**6.6**		1.6	0.40	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorohexanoic acid (PFHxA)	**4.8**		1.6	0.47	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluoroheptanoic acid (PFHpA)	**3.2**		1.6	0.20	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorooctanoic acid (PFOA)	**6.9**		1.6	0.69	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorononanoic acid (PFNA)	**1.9**		1.6	0.22	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorodecanoic acid (PFDA)	<1.6		1.6	0.25	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluoroundecanoic acid (PFUnA)	<1.6		1.6	0.90	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorododecanoic acid (PFDoA)	<1.6		1.6	0.45	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorotridecanoic acid (PFTriA)	<1.6		1.6	1.1	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorotetradecanoic acid (PFTeA)	<1.6		1.6	0.24	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.6		1.6	0.72	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.6		1.6	0.37	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorobutanesulfonic acid (PFBS)	**0.22**	**J**	1.6	0.16	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluoropentanesulfonic acid (PFPeS)	<1.6		1.6	0.24	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorohexanesulfonic acid (PFHxS)	**0.77**	**J B**	1.6	0.14	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.6		1.6	0.15	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorooctanesulfonic acid (PFOS)	**6.2**		1.6	0.44	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorononanesulfonic acid (PFNS)	<1.6		1.6	0.13	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorodecanesulfonic acid (PFDS)	<1.6		1.6	0.26	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorododecanesulfonic acid (PFDoS)	<1.6		1.6	0.37	ng/L		07/31/20 11:23	08/01/20 12:06	1
Perfluorooctanesulfonamide (FOSA)	**0.98**	**J**	1.6	0.29	ng/L		07/31/20 11:23	08/01/20 12:06	1
NEtFOSA	<1.6		1.6	0.71	ng/L		07/31/20 11:23	08/01/20 12:06	1
NMeFOSA	<1.6		1.6	0.35	ng/L		07/31/20 11:23	08/01/20 12:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<16		16	2.5	ng/L		07/31/20 11:23	08/01/20 12:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<16		16	1.5	ng/L		07/31/20 11:23	08/01/20 12:06	1
NMeFOSE	<3.3		3.3	1.1	ng/L		07/31/20 11:23	08/01/20 12:06	1
NEtFOSE	<1.6		1.6	0.69	ng/L		07/31/20 11:23	08/01/20 12:06	1
4:2 FTS	<16		16	4.2	ng/L		07/31/20 11:23	08/01/20 12:06	1
6:2 FTS	**11**	**J**	16	1.6	ng/L		07/31/20 11:23	08/01/20 12:06	1
8:2 FTS	**16**		16	1.6	ng/L		07/31/20 11:23	08/01/20 12:06	1
10:2 FTS	**6.4**		1.6	0.15	ng/L		07/31/20 11:23	08/01/20 12:06	1
DONA	<1.6		1.6	0.15	ng/L		07/31/20 11:23	08/01/20 12:06	1
HFPO-DA (GenX)	<3.3		3.3	1.2	ng/L		07/31/20 11:23	08/01/20 12:06	1
F-53B Major	<1.6		1.6	0.20	ng/L		07/31/20 11:23	08/01/20 12:06	1
F-53B Minor	<1.6		1.6	0.26	ng/L		07/31/20 11:23	08/01/20 12:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*74*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:06*	*1*
13C5 PFPeA	*90*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:06*	*1*
13C2 PFHxA	*91*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:06*	*1*
13C4 PFHpA	*99*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:06*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: SW-40 (072820)
Date Collected: 07/28/20 13:50
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-1
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	89		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C5 PFNA	86		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C2 PFDA	95		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C2 PFUnA	96		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C2 PFDoA	72		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C2 PFTeDA	66		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C2 PFHxDA	41		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C3 PFBS	88		25 - 150	07/31/20 11:23	08/01/20 12:06	1
18O2 PFHxS	93		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C4 PFOS	89		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C8 FOSA	92		25 - 150	07/31/20 11:23	08/01/20 12:06	1
d3-NMeFOSAA	107		25 - 150	07/31/20 11:23	08/01/20 12:06	1
d5-NEtFOSAA	103		25 - 150	07/31/20 11:23	08/01/20 12:06	1
d-N-MeFOSA-M	35		20 - 150	07/31/20 11:23	08/01/20 12:06	1
d-N-EtFOSA-M	27		20 - 150	07/31/20 11:23	08/01/20 12:06	1
d7-N-MeFOSE-M	24		10 - 120	07/31/20 11:23	08/01/20 12:06	1
d9-N-EtFOSE-M	23		10 - 120	07/31/20 11:23	08/01/20 12:06	1
M2-4:2 FTS	103		25 - 150	07/31/20 11:23	08/01/20 12:06	1
M2-6:2 FTS	111		25 - 150	07/31/20 11:23	08/01/20 12:06	1
M2-8:2 FTS	113		25 - 150	07/31/20 11:23	08/01/20 12:06	1
13C3 HFPO-DA	86		25 - 150	07/31/20 11:23	08/01/20 12:06	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: SW-39 (072820)
Date Collected: 07/28/20 14:30
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**51**	**B**	1.7	0.29	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluoropentanoic acid (PFPeA)	**140**		1.7	0.41	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorohexanoic acid (PFHxA)	**160**		1.7	0.48	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluoroheptanoic acid (PFHpA)	**63**		1.7	0.21	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorooctanoic acid (PFOA)	**1000**	**E**	1.7	0.70	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorononanoic acid (PFNA)	**51**		1.7	0.22	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorodecanoic acid (PFDA)	**2.6**		1.7	0.26	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluoroundecanoic acid (PFUnA)	<1.7		1.7	0.91	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.46	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.24	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.74	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.38	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorobutanesulfonic acid (PFBS)	**3.0**		1.7	0.17	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluoropentanesulfonic acid (PFPeS)	**2.0**		1.7	0.25	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorohexanesulfonic acid (PFHxS)	**27**	**B**	1.7	0.14	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.2**		1.7	0.16	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorooctanesulfonic acid (PFOS)	**72**		1.7	0.45	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.13	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.26	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.37	ng/L		07/31/20 11:23	08/01/20 12:34	1
Perfluorooctanesulfonamide (FOSA)	**12**		1.7	0.29	ng/L		07/31/20 11:23	08/01/20 12:34	1
NEtFOSA	<1.7		1.7	0.72	ng/L		07/31/20 11:23	08/01/20 12:34	1
NMeFOSA	<1.7		1.7	0.36	ng/L		07/31/20 11:23	08/01/20 12:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<17		17	2.6	ng/L		07/31/20 11:23	08/01/20 12:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**1.8**	**J**	17	1.6	ng/L		07/31/20 11:23	08/01/20 12:34	1
NMeFOSE	<3.3		3.3	1.2	ng/L		07/31/20 11:23	08/01/20 12:34	1
NEtFOSE	<1.7		1.7	0.70	ng/L		07/31/20 11:23	08/01/20 12:34	1
4:2 FTS	**13**	**J**	17	4.3	ng/L		07/31/20 11:23	08/01/20 12:34	1
6:2 FTS	**850**	**E**	17	1.7	ng/L		07/31/20 11:23	08/01/20 12:34	1
8:2 FTS	**81**		17	1.7	ng/L		07/31/20 11:23	08/01/20 12:34	1
10:2 FTS	<1.7		1.7	0.16	ng/L		07/31/20 11:23	08/01/20 12:34	1
DONA	<1.7		1.7	0.15	ng/L		07/31/20 11:23	08/01/20 12:34	1
HFPO-DA (GenX)	<3.3		3.3	1.2	ng/L		07/31/20 11:23	08/01/20 12:34	1
F-53B Major	<1.7		1.7	0.20	ng/L		07/31/20 11:23	08/01/20 12:34	1
F-53B Minor	<1.7		1.7	0.26	ng/L		07/31/20 11:23	08/01/20 12:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*42*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:34*	*1*
13C5 PFPeA	*62*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:34*	*1*
13C2 PFHxA	*69*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:34*	*1*
13C4 PFHpA	*71*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:34*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: SW-39 (072820)

Date Collected: 07/28/20 14:30
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-2

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	67		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C5 PFNA	75		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C2 PFDA	76		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C2 PFUnA	82		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C2 PFDoA	67		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C2 PFTeDA	61		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C2 PFHxDA	41		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C3 PFBS	72		25 - 150	07/31/20 11:23	08/01/20 12:34	1
18O2 PFHxS	74		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C4 PFOS	76		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C8 FOSA	80		25 - 150	07/31/20 11:23	08/01/20 12:34	1
d3-NMeFOSAA	84		25 - 150	07/31/20 11:23	08/01/20 12:34	1
d5-NEtFOSAA	84		25 - 150	07/31/20 11:23	08/01/20 12:34	1
d-N-MeFOSA-M	42		20 - 150	07/31/20 11:23	08/01/20 12:34	1
d-N-EtFOSA-M	30		20 - 150	07/31/20 11:23	08/01/20 12:34	1
d7-N-MeFOSE-M	28		10 - 120	07/31/20 11:23	08/01/20 12:34	1
d9-N-EtFOSE-M	19		10 - 120	07/31/20 11:23	08/01/20 12:34	1
M2-4:2 FTS	105		25 - 150	07/31/20 11:23	08/01/20 12:34	1
M2-6:2 FTS	87		25 - 150	07/31/20 11:23	08/01/20 12:34	1
M2-8:2 FTS	109		25 - 150	07/31/20 11:23	08/01/20 12:34	1
13C3 HFPO-DA	65		25 - 150	07/31/20 11:23	08/01/20 12:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**53**	**B**	17	2.9	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluoropentanoic acid (PFPeA)	**140**		17	4.1	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorohexanoic acid (PFHxA)	**170**		17	4.8	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluoroheptanoic acid (PFHpA)	**65**		17	2.1	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorooctanoic acid (PFOA)	**1000**		17	7.0	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorononanoic acid (PFNA)	**47**		17	2.2	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorodecanoic acid (PFDA)	**2.6**	**J**	17	2.6	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluoroundecanoic acid (PFUnA)	<17		17	9.1	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorododecanoic acid (PFDoA)	<17		17	4.6	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorotridecanoic acid (PFTriA)	<17		17	11	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorotetradecanoic acid (PFTeA)	<17		17	2.4	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<17		17	7.4	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluoro-n-octadecanoic acid (PFODA)	<17		17	3.8	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorobutanesulfonic acid (PFBS)	**3.9**	**J**	17	1.7	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluoropentanesulfonic acid (PFPeS)	**2.7**	**J**	17	2.5	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorohexanesulfonic acid (PFHxS)	**28**	**B**	17	1.4	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluoroheptanesulfonic Acid (PFHpS)	**2.2**	**J**	17	1.6	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorooctanesulfonic acid (PFOS)	**73**		17	4.5	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorononanesulfonic acid (PFNS)	<17		17	1.3	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorodecanesulfonic acid (PFDS)	<17		17	2.6	ng/L		07/31/20 11:23	08/05/20 01:06	10

Client Sample ID: SW-39 (072820)

Date Collected: 07/28/20 14:30
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanesulfonic acid (PFDoS)	<17		17	3.7	ng/L		07/31/20 11:23	08/05/20 01:06	10
Perfluorooctanesulfonamide (FOSA)	**11**	**J**	17	2.9	ng/L		07/31/20 11:23	08/05/20 01:06	10
NEtFOSA	<17		17	7.2	ng/L		07/31/20 11:23	08/05/20 01:06	10
NMeFOSA	<17		17	3.6	ng/L		07/31/20 11:23	08/05/20 01:06	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<170		170	26	ng/L		07/31/20 11:23	08/05/20 01:06	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<170		170	16	ng/L		07/31/20 11:23	08/05/20 01:06	10
NMeFOSE	<33		33	12	ng/L		07/31/20 11:23	08/05/20 01:06	10
NEtFOSE	<17		17	7.0	ng/L		07/31/20 11:23	08/05/20 01:06	10
4:2 FTS	<170		170	43	ng/L		07/31/20 11:23	08/05/20 01:06	10
6:2 FTS	**900**		170	17	ng/L		07/31/20 11:23	08/05/20 01:06	10
8:2 FTS	**86**	**J**	170	17	ng/L		07/31/20 11:23	08/05/20 01:06	10
10:2 FTS	<17		17	1.6	ng/L		07/31/20 11:23	08/05/20 01:06	10
DONA	<17		17	1.5	ng/L		07/31/20 11:23	08/05/20 01:06	10
HFPO-DA (GenX)	<33		33	12	ng/L		07/31/20 11:23	08/05/20 01:06	10
F-53B Major	<17		17	2.0	ng/L		07/31/20 11:23	08/05/20 01:06	10
F-53B Minor	<17		17	2.6	ng/L		07/31/20 11:23	08/05/20 01:06	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*94*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C5 PFPeA	*108*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C2 PFHxA	*110*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C4 PFHpA	*116*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C4 PFOA	*110*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C5 PFNA	*121*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C2 PFDA	*112*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C2 PFUnA	*114*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C2 PFDoA	*112*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C2 PFTeDA	*95*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C2 PFHxDA	*74*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C3 PFBS	*94*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
18O2 PFHxS	*111*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C4 PFOS	*111*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C8 FOSA	*111*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
d3-NMeFOSAA	*135*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
d5-NEtFOSAA	*141*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
d-N-MeFOSA-M	*64*		*20 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
d-N-EtFOSA-M	*48*		*20 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
d7-N-MeFOSE-M	*39*		*10 - 120*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
d9-N-EtFOSE-M	*33*		*10 - 120*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
M2-4:2 FTS	*109*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
M2-6:2 FTS	*98*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
M2-8:2 FTS	*113*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*
13C3 HFPO-DA	*104*		*25 - 150*	*07/31/20 11:23*	*08/05/20 01:06*	*10*

Client Sample ID: DUP-01

Date Collected: 07/28/20 00:00
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**49**	**B**	1.7	0.30	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluoropentanoic acid (PFPeA)	**130**		1.7	0.41	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorohexanoic acid (PFHxA)	**150**		1.7	0.49	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluoroheptanoic acid (PFHpA)	**57**		1.7	0.21	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorooctanoic acid (PFOA)	**920**	**E**	1.7	0.72	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorononanoic acid (PFNA)	**46**		1.7	0.23	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorodecanoic acid (PFDA)	**2.4**		1.7	0.26	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluoroundecanoic acid (PFUnA)	<1.7		1.7	0.93	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.46	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.24	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.75	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.39	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorobutanesulfonic acid (PFBS)	**2.9**		1.7	0.17	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluoropentanesulfonic acid (PFPeS)	**2.1**		1.7	0.25	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorohexanesulfonic acid (PFHxS)	**24**	**B**	1.7	0.14	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.1**		1.7	0.16	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorooctanesulfonic acid (PFOS)	**69**		1.7	0.46	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.14	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.27	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.38	ng/L		07/31/20 11:23	08/01/20 12:43	1
Perfluorooctanesulfonamide (FOSA)	**11**		1.7	0.30	ng/L		07/31/20 11:23	08/01/20 12:43	1
NEtFOSA	<1.7		1.7	0.73	ng/L		07/31/20 11:23	08/01/20 12:43	1
NMeFOSA	<1.7		1.7	0.36	ng/L		07/31/20 11:23	08/01/20 12:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<17		17	2.6	ng/L		07/31/20 11:23	08/01/20 12:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**1.9**	**J**	17	1.6	ng/L		07/31/20 11:23	08/01/20 12:43	1
NMeFOSE	<3.4		3.4	1.2	ng/L		07/31/20 11:23	08/01/20 12:43	1
NEtFOSE	<1.7		1.7	0.72	ng/L		07/31/20 11:23	08/01/20 12:43	1
4:2 FTS	**12**	**J**	17	4.4	ng/L		07/31/20 11:23	08/01/20 12:43	1
6:2 FTS	**790**	**E**	17	1.7	ng/L		07/31/20 11:23	08/01/20 12:43	1
8:2 FTS	**77**		17	1.7	ng/L		07/31/20 11:23	08/01/20 12:43	1
10:2 FTS	**0.48**	**J**	1.7	0.16	ng/L		07/31/20 11:23	08/01/20 12:43	1
DONA	<1.7		1.7	0.15	ng/L		07/31/20 11:23	08/01/20 12:43	1
HFPO-DA (GenX)	<3.4		3.4	1.3	ng/L		07/31/20 11:23	08/01/20 12:43	1
F-53B Major	<1.7		1.7	0.20	ng/L		07/31/20 11:23	08/01/20 12:43	1
F-53B Minor	<1.7		1.7	0.27	ng/L		07/31/20 11:23	08/01/20 12:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*68*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:43*	*1*
13C5 PFPeA	*100*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:43*	*1*
13C2 PFHxA	*114*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:43*	*1*
13C4 PFHpA	*118*		*25 - 150*	*07/31/20 11:23*	*08/01/20 12:43*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: DUP-01
Date Collected: 07/28/20 00:00
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-3
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	109		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C5 PFNA	113		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C2 PFDA	115		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C2 PFUnA	131		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C2 PFDoA	100		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C2 PFTeDA	85		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C2 PFHxDA	62		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C3 PFBS	113		25 - 150	07/31/20 11:23	08/01/20 12:43	1
18O2 PFHxS	122		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C4 PFOS	119		25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C8 FOSA	127		25 - 150	07/31/20 11:23	08/01/20 12:43	1
d3-NMeFOSAA	132		25 - 150	07/31/20 11:23	08/01/20 12:43	1
d5-NEtFOSAA	129		25 - 150	07/31/20 11:23	08/01/20 12:43	1
d-N-MeFOSA-M	63		20 - 150	07/31/20 11:23	08/01/20 12:43	1
d-N-EtFOSA-M	46		20 - 150	07/31/20 11:23	08/01/20 12:43	1
d7-N-MeFOSE-M	43		10 - 120	07/31/20 11:23	08/01/20 12:43	1
d9-N-EtFOSE-M	36		10 - 120	07/31/20 11:23	08/01/20 12:43	1
M2-4:2 FTS	166	*5	25 - 150	07/31/20 11:23	08/01/20 12:43	1
M2-6:2 FTS	143		25 - 150	07/31/20 11:23	08/01/20 12:43	1
M2-8:2 FTS	173	*5	25 - 150	07/31/20 11:23	08/01/20 12:43	1
13C3 HFPO-DA	104		25 - 150	07/31/20 11:23	08/01/20 12:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**49**	**B**	17	3.0	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluoropentanoic acid (PFPeA)	**140**		17	4.1	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorohexanoic acid (PFHxA)	**160**		17	4.9	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluoroheptanoic acid (PFHpA)	**59**		17	2.1	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorooctanoic acid (PFOA)	**950**		17	7.2	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorononanoic acid (PFNA)	**45**		17	2.3	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorodecanoic acid (PFDA)	**2.6**	**J**	17	2.6	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluoroundecanoic acid (PFUnA)	<17		17	9.3	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorododecanoic acid (PFDoA)	<17		17	4.6	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorotridecanoic acid (PFTriA)	<17		17	11	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorotetradecanoic acid (PFTeA)	<17		17	2.4	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<17		17	7.5	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluoro-n-octadecanoic acid (PFODA)	<17		17	3.9	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorobutanesulfonic acid (PFBS)	**3.3**	**J**	17	1.7	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluoropentanesulfonic acid (PFPeS)	**2.6**	**J**	17	2.5	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorohexanesulfonic acid (PFHxS)	**28**	**B**	17	1.4	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluoroheptanesulfonic Acid (PFHpS)	**2.3**	**J**	17	1.6	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorooctanesulfonic acid (PFOS)	**67**		17	4.6	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorononanesulfonic acid (PFNS)	<17		17	1.4	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorodecanesulfonic acid (PFDS)	<17		17	2.7	ng/L		07/31/20 11:23	08/04/20 13:30	10

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: DUP-01
Date Collected: 07/28/20 00:00
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanesulfonic acid (PFDoS)	<17		17	3.8	ng/L		07/31/20 11:23	08/04/20 13:30	10
Perfluorooctanesulfonamide (FOSA)	**10**	**J**	17	3.0	ng/L		07/31/20 11:23	08/04/20 13:30	10
NEtFOSA	<17		17	7.3	ng/L		07/31/20 11:23	08/04/20 13:30	10
NMeFOSA	<17		17	3.6	ng/L		07/31/20 11:23	08/04/20 13:30	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<170		170	26	ng/L		07/31/20 11:23	08/04/20 13:30	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<170		170	16	ng/L		07/31/20 11:23	08/04/20 13:30	10
NMeFOSE	<34		34	12	ng/L		07/31/20 11:23	08/04/20 13:30	10
NEtFOSE	<17		17	7.2	ng/L		07/31/20 11:23	08/04/20 13:30	10
4:2 FTS	<170		170	44	ng/L		07/31/20 11:23	08/04/20 13:30	10
6:2 FTS	**790**		170	17	ng/L		07/31/20 11:23	08/04/20 13:30	10
8:2 FTS	**79**	**J**	170	17	ng/L		07/31/20 11:23	08/04/20 13:30	10
10:2 FTS	<17		17	1.6	ng/L		07/31/20 11:23	08/04/20 13:30	10
DONA	<17		17	1.5	ng/L		07/31/20 11:23	08/04/20 13:30	10
HFPO-DA (GenX)	<34		34	13	ng/L		07/31/20 11:23	08/04/20 13:30	10
F-53B Major	<17		17	2.0	ng/L		07/31/20 11:23	08/04/20 13:30	10
F-53B Minor	<17		17	2.7	ng/L		07/31/20 11:23	08/04/20 13:30	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C5 PFPeA	*94*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C4 PFHpA	*113*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C4 PFOA	*109*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C5 PFNA	*112*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C2 PFUnA	*110*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C2 PFTeDA	*84*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C2 PFHxDA	*77*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C3 PFBS	*97*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
18O2 PFHxS	*104*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C4 PFOS	*106*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C8 FOSA	*105*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
d3-NMeFOSAA	*125*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
d5-NEtFOSAA	*125*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
d-N-MeFOSA-M	*57*		*20 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
d-N-EtFOSA-M	*40*		*20 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
d7-N-MeFOSE-M	*34*		*10 - 120*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
d9-N-EtFOSE-M	*30*		*10 - 120*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
M2-4:2 FTS	*112*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
M2-6:2 FTS	*110*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
M2-8:2 FTS	*127*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*
13C3 HFPO-DA	*99*		*25 - 150*	*07/31/20 11:23*	*08/04/20 13:30*	*10*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: FIELD BLANK-07282020

Date Collected: 07/28/20 13:15
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-4

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<1.8		1.8	0.31	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluoropentanoic acid (PFPeA)	<1.8		1.8	0.44	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorohexanoic acid (PFHxA)	<1.8		1.8	0.52	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluoroheptanoic acid (PFHpA)	<1.8		1.8	0.22	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorooctanoic acid (PFOA)	<1.8		1.8	0.76	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorononanoic acid (PFNA)	<1.8		1.8	0.24	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.28	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	0.99	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.49	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.26	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.80	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.41	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorobutanesulfonic acid (PFBS)	<1.8		1.8	0.18	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.27	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorohexanesulfonic acid (PFHxS)	<1.8		1.8	0.15	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	0.49	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.14	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.40	ng/L		08/04/20 18:26	08/05/20 10:56	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.31	ng/L		08/04/20 18:26	08/05/20 10:56	1
NEtFOSA	<1.8		1.8	0.78	ng/L		08/04/20 18:26	08/05/20 10:56	1
NMeFOSA	<1.8		1.8	0.39	ng/L		08/04/20 18:26	08/05/20 10:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<18		18	2.8	ng/L		08/04/20 18:26	08/05/20 10:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<18		18	1.7	ng/L		08/04/20 18:26	08/05/20 10:56	1
NMeFOSE	<3.6		3.6	1.3	ng/L		08/04/20 18:26	08/05/20 10:56	1
NEtFOSE	<1.8		1.8	0.76	ng/L		08/04/20 18:26	08/05/20 10:56	1
4:2 FTS	<18		18	4.7	ng/L		08/04/20 18:26	08/05/20 10:56	1
6:2 FTS	<18		18	1.8	ng/L		08/04/20 18:26	08/05/20 10:56	1
8:2 FTS	<18		18	1.8	ng/L		08/04/20 18:26	08/05/20 10:56	1
10:2 FTS	<1.8		1.8	0.17	ng/L		08/04/20 18:26	08/05/20 10:56	1
DONA	<1.8		1.8	0.16	ng/L		08/04/20 18:26	08/05/20 10:56	1
HFPO-DA (GenX)	<3.6		3.6	1.3	ng/L		08/04/20 18:26	08/05/20 10:56	1
F-53B Major	<1.8		1.8	0.22	ng/L		08/04/20 18:26	08/05/20 10:56	1
F-53B Minor	<1.8		1.8	0.29	ng/L		08/04/20 18:26	08/05/20 10:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*77*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:56*	*1*
13C5 PFPeA	*87*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:56*	*1*
13C2 PFHxA	*88*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:56*	*1*
13C4 PFHpA	*92*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:56*	*1*
13C4 PFOA	*107*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:56*	*1*
13C5 PFNA	*102*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:56*	*1*
13C2 PFDA	*119*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:56*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: FIELD BLANK-07282020
Date Collected: 07/28/20 13:15
Date Received: 07/30/20 09:30

Lab Sample ID: 320-63229-4
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFUnA	114		25 - 150	08/04/20 18:26	08/05/20 10:56	1
13C2 PFDoA	114		25 - 150	08/04/20 18:26	08/05/20 10:56	1
13C2 PFTeDA	106		25 - 150	08/04/20 18:26	08/05/20 10:56	1
13C2 PFHxDA	121		25 - 150	08/04/20 18:26	08/05/20 10:56	1
13C3 PFBS	76		25 - 150	08/04/20 18:26	08/05/20 10:56	1
18O2 PFHxS	79		25 - 150	08/04/20 18:26	08/05/20 10:56	1
13C4 PFOS	78		25 - 150	08/04/20 18:26	08/05/20 10:56	1
13C8 FOSA	83		25 - 150	08/04/20 18:26	08/05/20 10:56	1
d3-NMeFOSAA	101		25 - 150	08/04/20 18:26	08/05/20 10:56	1
d5-NEtFOSAA	95		25 - 150	08/04/20 18:26	08/05/20 10:56	1
d-N-MeFOSA-M	56		20 - 150	08/04/20 18:26	08/05/20 10:56	1
d-N-EtFOSA-M	40		20 - 150	08/04/20 18:26	08/05/20 10:56	1
d7-N-MeFOSE-M	32		10 - 120	08/04/20 18:26	08/05/20 10:56	1
d9-N-EtFOSE-M	24		10 - 120	08/04/20 18:26	08/05/20 10:56	1
M2-4:2 FTS	106		25 - 150	08/04/20 18:26	08/05/20 10:56	1
M2-6:2 FTS	109		25 - 150	08/04/20 18:26	08/05/20 10:56	1
M2-8:2 FTS	103		25 - 150	08/04/20 18:26	08/05/20 10:56	1
13C3 HFPO-DA	82		25 - 150	08/04/20 18:26	08/05/20 10:56	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-63229-1	SW-40 (072820)	74	90	91	99	89	86	95	96
320-63229-1 MS	SW-40 (072820)	72	83	84	85	87	80	80	99
320-63229-1 MSD	SW-40 (072820)	78	86	90	88	83	93	78	95
320-63229-2	SW-39 (072820)	42	62	69	71	67	75	76	82
320-63229-2 - DL	SW-39 (072820)	94	108	110	116	110	121	112	114
320-63229-3	DUP-01	68	100	114	118	109	113	115	131
320-63229-3 - DL	DUP-01	96	94		113	109	112		110
320-63229-4	FIELD BLANK-07282020	77	87	88	92	107	102	119	114
LCS 320-400044/2-A	Lab Control Sample	75	82	81	86	86	89	85	94
LCS 320-401176/2-A	Lab Control Sample	84	95	93	98	114	119	121	145
LCSD 320-401176/3-A	Lab Control Sample Dup	72	84	82	83	99	100	109	
LCSD 320-401176/3-A - RA	Lab Control Sample Dup								124
MB 320-400044/1-A	Method Blank	87	94	97	102	105	108	99	104
MB 320-401176/1-A	Method Blank	77	86	88	89	94	104	116	105

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
320-63229-1	SW-40 (072820)	72	66	41	88	93	89	92	107
320-63229-1 MS	SW-40 (072820)	75	58	39	81	84	81	87	92
320-63229-1 MSD	SW-40 (072820)	80	61	48	85	87	88	90	99
320-63229-2	SW-39 (072820)	67	61	41	72	74	76	80	84
320-63229-2 - DL	SW-39 (072820)	112	95	74	94	111	111	111	135
320-63229-3	DUP-01	100	85	62	113	122	119	127	132
320-63229-3 - DL	DUP-01		84	77	97	104	106	105	125
320-63229-4	FIELD BLANK-07282020	114	106	121	76	79	78	83	101
LCS 320-400044/2-A	Lab Control Sample	88	76	85	80	87	86	81	98
LCS 320-401176/2-A	Lab Control Sample	125	134	134	84	86	85	90	116
LCSD 320-401176/3-A	Lab Control Sample Dup	103	93	114	75	79	79	77	96
LCSD 320-401176/3-A - RA	Lab Control Sample Dup								
MB 320-400044/1-A	Method Blank	103	108	99	93	105	108	96	106
MB 320-401176/1-A	Method Blank	117	111	100	76	79	78	82	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)
320-63229-1	SW-40 (072820)	103	35	27	24	23	103	111	113
320-63229-1 MS	SW-40 (072820)	93	33	25	26	19	95	102	100
320-63229-1 MSD	SW-40 (072820)	100	34	26	23	23	88	102	103
320-63229-2	SW-39 (072820)	84	42	30	28	19	105	87	109
320-63229-2 - DL	SW-39 (072820)	141	64	48	39	33	109	98	113
320-63229-3	DUP-01	129	63	46	43	36	166 *5	143	173 *5
320-63229-3 - DL	DUP-01	125	57	40	34	30	112	110	127
320-63229-4	FIELD BLANK-07282020	95	56	40	32	24	106	109	103
LCS 320-400044/2-A	Lab Control Sample	100	59	41	20	15	84	84	96
LCS 320-401176/2-A	Lab Control Sample	106	58	35	22	21	105	119	116
LCSD 320-401176/3-A	Lab Control Sample Dup	87	51	30	19	15	95	100	96
LCSD 320-401176/3-A - RA	Lab Control Sample Dup								
MB 320-400044/1-A	Method Blank	110	72	49	23	16	83	96	101
MB 320-401176/1-A	Method Blank	96	57	33	22	18	104	106	102

Isotope Dilution Summary

Client: ARCADIS U.S., Inc. Job ID: 320-63229-1
Project/Site: Marinette, WI 30015294.00002

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HFPODA (25-150)						
320-63229-1	SW-40 (072820)	86						
320-63229-1 MS	SW-40 (072820)	81						
320-63229-1 MSD	SW-40 (072820)	84						
320-63229-2	SW-39 (072820)	65						
320-63229-2 - DL	SW-39 (072820)	104						
320-63229-3	DUP-01	104						
320-63229-3 - DL	DUP-01	99						
320-63229-4	FIELD BLANK-07282020	82						
LCS 320-400044/2-A	Lab Control Sample	82						
LCS 320-401176/2-A	Lab Control Sample	91						
LCSD 320-401176/3-A	Lab Control Sample Dup	79						
LCSD 320-401176/3-A - RA	Lab Control Sample Dup							
MB 320-400044/1-A	Method Blank	95						
MB 320-401176/1-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
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxDA = 13C2 PFHxDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-400044/1-A
Matrix: Water
Analysis Batch: 400416

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 400044

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.460	J	2.0	0.35	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.29	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.46	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorohexanesulfonic acid (PFHxS)	0.306	J	2.0	0.17	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.16	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.45	ng/L		07/31/20 11:23	08/02/20 12:16	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.35	ng/L		07/31/20 11:23	08/02/20 12:16	1
NEtFOSA	<2.0		2.0	0.87	ng/L		07/31/20 11:23	08/02/20 12:16	1
NMeFOSA	<2.0		2.0	0.43	ng/L		07/31/20 11:23	08/02/20 12:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<20		20	3.1	ng/L		07/31/20 11:23	08/02/20 12:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<20		20	1.9	ng/L		07/31/20 11:23	08/02/20 12:16	1
NMeFOSE	<4.0		4.0	1.4	ng/L		07/31/20 11:23	08/02/20 12:16	1
NEtFOSE	<2.0		2.0	0.85	ng/L		07/31/20 11:23	08/02/20 12:16	1
4:2 FTS	<20		20	5.2	ng/L		07/31/20 11:23	08/02/20 12:16	1
6:2 FTS	<20		20	2.0	ng/L		07/31/20 11:23	08/02/20 12:16	1
8:2 FTS	<20		20	2.0	ng/L		07/31/20 11:23	08/02/20 12:16	1
10:2 FTS	<2.0		2.0	0.19	ng/L		07/31/20 11:23	08/02/20 12:16	1
DONA	<2.0		2.0	0.18	ng/L		07/31/20 11:23	08/02/20 12:16	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		07/31/20 11:23	08/02/20 12:16	1
F-53B Major	<2.0		2.0	0.24	ng/L		07/31/20 11:23	08/02/20 12:16	1
F-53B Minor	<2.0		2.0	0.32	ng/L		07/31/20 11:23	08/02/20 12:16	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*87*		*25 - 150*	*07/31/20 11:23*	*08/02/20 12:16*	*1*
13C5 PFPeA	*94*		*25 - 150*	*07/31/20 11:23*	*08/02/20 12:16*	*1*
13C2 PFHxA	*97*		*25 - 150*	*07/31/20 11:23*	*08/02/20 12:16*	*1*
13C4 PFHpA	*102*		*25 - 150*	*07/31/20 11:23*	*08/02/20 12:16*	*1*
13C4 PFOA	*105*		*25 - 150*	*07/31/20 11:23*	*08/02/20 12:16*	*1*

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

Lab Sample ID: MB 320-400044/1-A
Matrix: Water
Analysis Batch: 400416

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 400044

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	108		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C2 PFDA	99		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C2 PFUnA	104		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C2 PFDoA	103		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C2 PFTeDA	108		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C2 PFHxDA	99		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C3 PFBS	93		25 - 150	07/31/20 11:23	08/02/20 12:16	1
18O2 PFHxS	105		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C4 PFOS	108		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C8 FOSA	96		25 - 150	07/31/20 11:23	08/02/20 12:16	1
d3-NMeFOSAA	106		25 - 150	07/31/20 11:23	08/02/20 12:16	1
d5-NEtFOSAA	110		25 - 150	07/31/20 11:23	08/02/20 12:16	1
d-N-MeFOSA-M	72		20 - 150	07/31/20 11:23	08/02/20 12:16	1
d-N-EtFOSA-M	49		20 - 150	07/31/20 11:23	08/02/20 12:16	1
d7-N-MeFOSE-M	23		10 - 120	07/31/20 11:23	08/02/20 12:16	1
d9-N-EtFOSE-M	16		10 - 120	07/31/20 11:23	08/02/20 12:16	1
M2-4:2 FTS	83		25 - 150	07/31/20 11:23	08/02/20 12:16	1
M2-6:2 FTS	96		25 - 150	07/31/20 11:23	08/02/20 12:16	1
M2-8:2 FTS	101		25 - 150	07/31/20 11:23	08/02/20 12:16	1
13C3 HFPO-DA	95		25 - 150	07/31/20 11:23	08/02/20 12:16	1

Lab Sample ID: LCS 320-400044/2-A
Matrix: Water
Analysis Batch: 400609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 400044

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	43.6		ng/L		109	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	39.9		ng/L		100	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	43.5		ng/L		109	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	40.3		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	40.1	41.2		ng/L		103	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	42.3		ng/L		106	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	36.2		ng/L		90	68 - 128
Perfluorododecanoic acid (PFDoA)	40.2	42.2		ng/L		105	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	42.6		ng/L		107	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	46.4		ng/L		116	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.7		ng/L		102	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	46.3		ng/L		116	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	39.9		ng/L		113	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	44.3		ng/L		118	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.0		ng/L		93	59 - 119

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

Lab Sample ID: LCS 320-400044/2-A
Matrix: Water
Analysis Batch: 400609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 400044

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.6		ng/L		107	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L		104	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	39.4		ng/L		103	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	37.3		ng/L		97	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	38.8		ng/L		100	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	41.5		ng/L		104	73 - 133
NMeFOSA	40.0	42.4		ng/L		106	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.0		ng/L		98	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.3		ng/L		98	76 - 136
NMeFOSE	40.0	42.8		ng/L		107	70 - 130
NEtFOSE	40.0	44.5		ng/L		111	71 - 131
4:2 FTS	37.4	39.3		ng/L		105	79 - 139
6:2 FTS	37.9	41.0		ng/L		108	59 - 175
8:2 FTS	38.3	42.2		ng/L		110	75 - 135
10:2 FTS	38.6	46.5		ng/L		121	64 - 142
DONA	37.7	41.8		ng/L		111	79 - 139
HFPO-DA (GenX)	40.0	41.3		ng/L		103	51 - 173
F-53B Major	37.3	38.8		ng/L		104	75 - 135
F-53B Minor	37.7	40.7		ng/L		108	54 - 114

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*75*		*25 - 150*
13C5 PFPeA	*82*		*25 - 150*
13C2 PFHxA	*81*		*25 - 150*
13C4 PFHpA	*86*		*25 - 150*
13C4 PFOA	*86*		*25 - 150*
13C5 PFNA	*89*		*25 - 150*
13C2 PFDA	*85*		*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
13C2 PFDoA	*88*		*25 - 150*
13C2 PFTeDA	*76*		*25 - 150*
13C2 PFHxDA	*85*		*25 - 150*
13C3 PFBS	*80*		*25 - 150*
18O2 PFHxS	*87*		*25 - 150*
13C4 PFOS	*86*		*25 - 150*
13C8 FOSA	*81*		*25 - 150*
d3-NMeFOSAA	*98*		*25 - 150*
d5-NEtFOSAA	*100*		*25 - 150*
d-N-MeFOSA-M	*59*		*20 - 150*
d-N-EtFOSA-M	*41*		*20 - 150*
d7-N-MeFOSE-M	*20*		*10 - 120*
d9-N-EtFOSE-M	*15*		*10 - 120*
M2-4:2 FTS	*84*		*25 - 150*

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

Lab Sample ID: LCS 320-400044/2-A
Matrix: Water
Analysis Batch: 400609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 400044

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	84		25 - 150
M2-8:2 FTS	96		25 - 150
13C3 HFPO-DA	82		25 - 150

Lab Sample ID: 320-63229-1 MS
Matrix: Water
Analysis Batch: 400304

Client Sample ID: SW-40 (072820)
Prep Type: Total/NA
Prep Batch: 400044

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	4.9	B	33.5	39.2		ng/L		103	76 - 136
Perfluoropentanoic acid (PFPeA)	6.6		33.5	35.8		ng/L		87	71 - 131
Perfluorohexanoic acid (PFHxA)	4.8		33.5	37.0		ng/L		96	73 - 133
Perfluoroheptanoic acid (PFHpA)	3.2		33.5	35.6		ng/L		97	72 - 132
Perfluorooctanoic acid (PFOA)	6.9		33.5	37.1		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	1.9		33.5	36.2		ng/L		102	75 - 135
Perfluorodecanoic acid (PFDA)	<1.6		33.5	35.9		ng/L		107	76 - 136
Perfluoroundecanoic acid (PFUnA)	<1.6		33.5	23.7		ng/L		71	68 - 128
Perfluorododecanoic acid (PFDoA)	<1.6		33.7	30.8		ng/L		92	71 - 131
Perfluorotridecanoic acid (PFTriA)	<1.6		33.5	36.5		ng/L		109	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<1.6		33.5	38.6		ng/L		115	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.6		33.5	35.6		ng/L		106	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	<1.6		33.5	32.1		ng/L		96	58 - 145
Perfluorobutanesulfonic acid (PFBS)	0.22	J	29.6	31.5		ng/L		106	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	<1.6		31.4	32.4		ng/L		103	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	0.77	J B	30.5	29.5		ng/L		94	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	<1.6		31.9	35.3		ng/L		111	76 - 136
Perfluorooctanesulfonic acid (PFOS)	6.2		31.1	36.1		ng/L		96	70 - 130
Perfluorononanesulfonic acid (PFNS)	<1.6		32.1	32.6		ng/L		101	75 - 135
Perfluorodecanesulfonic acid (PFDS)	<1.6		32.3	31.0		ng/L		96	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	<1.6		32.4	22.1		ng/L		68	67 - 127
Perfluorooctanesulfonamide (FOSA)	0.98	J	33.5	34.4		ng/L		100	73 - 133
NMeFOSA	<1.6		33.5	35.1		ng/L		105	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<16		33.5	32.2		ng/L		96	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<16		33.5	33.3		ng/L		99	76 - 136
NMeFOSE	<3.3		33.5	31.4		ng/L		94	70 - 130
NEtFOSE	<1.6		33.5	32.6		ng/L		97	71 - 131

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

Lab Sample ID: 320-63229-1 MS
Matrix: Water
Analysis Batch: 400304

Client Sample ID: SW-40 (072820)
Prep Type: Total/NA
Prep Batch: 400044

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	<16		31.3	33.0		ng/L		105	79 - 139
6:2 FTS	11	J	31.7	39.5		ng/L		90	59 - 175
8:2 FTS	16		32.1	44.6		ng/L		90	75 - 135
10:2 FTS	6.4		32.3	36.7		ng/L		94	64 - 142
DONA	<1.6		31.5	34.8		ng/L		110	79 - 139
HFPO-DA (GenX)	<3.3		33.5	34.1		ng/L		102	51 - 173
F-53B Major	<1.6		31.2	30.6		ng/L		98	75 - 135
F-53B Minor	<1.6		31.5	30.5		ng/L		97	54 - 114

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*72*		*25 - 150*
13C5 PFPeA	*83*		*25 - 150*
13C2 PFHxA	*84*		*25 - 150*
13C4 PFHpA	*85*		*25 - 150*
13C4 PFOA	*87*		*25 - 150*
13C5 PFNA	*80*		*25 - 150*
13C2 PFDA	*80*		*25 - 150*
13C2 PFUnA	*99*		*25 - 150*
13C2 PFDoA	*75*		*25 - 150*
13C2 PFTeDA	*58*		*25 - 150*
13C2 PFHxDA	*39*		*25 - 150*
13C3 PFBS	*81*		*25 - 150*
18O2 PFHxS	*84*		*25 - 150*
13C4 PFOS	*81*		*25 - 150*
13C8 FOSA	*87*		*25 - 150*
d3-NMeFOSAA	*92*		*25 - 150*
d5-NEtFOSAA	*93*		*25 - 150*
d-N-MeFOSA-M	*33*		*20 - 150*
d-N-EtFOSA-M	*25*		*20 - 150*
d7-N-MeFOSE-M	*26*		*10 - 120*
d9-N-EtFOSE-M	*19*		*10 - 120*
M2-4:2 FTS	*95*		*25 - 150*
M2-6:2 FTS	*102*		*25 - 150*
M2-8:2 FTS	*100*		*25 - 150*
13C3 HFPO-DA	*81*		*25 - 150*

Lab Sample ID: 320-63229-1 MSD
Matrix: Water
Analysis Batch: 400304

Client Sample ID: SW-40 (072820)
Prep Type: Total/NA
Prep Batch: 400044

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	4.9	B	33.3	38.5		ng/L		101	76 - 136	2	30
Perfluoropentanoic acid (PFPeA)	6.6		33.3	34.8		ng/L		85	71 - 131	3	30
Perfluorohexanoic acid (PFHxA)	4.8		33.3	34.7		ng/L		90	73 - 133	6	30
Perfluoroheptanoic acid (PFHpA)	3.2		33.3	33.0		ng/L		89	72 - 132	8	30
Perfluorooctanoic acid (PFOA)	6.9		33.3	38.9		ng/L		96	70 - 130	5	30
Perfluorononanoic acid (PFNA)	1.9		33.3	37.2		ng/L		106	75 - 135	3	30
Perfluorodecanoic acid (PFDA)	<1.6		33.3	38.8		ng/L		116	76 - 136	8	30

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

Lab Sample ID: 320-63229-1 MSD
Matrix: Water
Analysis Batch: 400304

Client Sample ID: SW-40 (072820)
Prep Type: Total/NA
Prep Batch: 400044

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	<1.6		33.3	31.9		ng/L		96	68 - 128	29	30
Perfluorododecanoic acid (PFDoA)	<1.6		33.5	31.5		ng/L		94	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)	<1.6		33.3	38.5		ng/L		116	71 - 131	5	30
Perfluorotetradecanoic acid (PFTeA)	<1.6		33.3	31.2		ng/L		94	70 - 130	21	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.6		33.3	35.1		ng/L		106	76 - 136	1	30
Perfluoro-n-octadecanoic acid (PFODA)	<1.6		33.3	26.2		ng/L		79	58 - 145	20	30
Perfluorobutanesulfonic acid (PFBS)	0.22	J	29.4	31.2		ng/L		105	67 - 127	1	30
Perfluoropentanesulfonic acid (PFPeS)	<1.6		31.2	31.8		ng/L		102	66 - 126	2	30
Perfluorohexanesulfonic acid (PFHxS)	0.77	J B	30.3	29.6		ng/L		95	59 - 119	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	<1.6		31.7	33.8		ng/L		107	76 - 136	5	30
Perfluorooctanesulfonic acid (PFOS)	6.2		30.9	35.2		ng/L		94	70 - 130	2	30
Perfluorononanesulfonic acid (PFNS)	<1.6		31.9	30.8		ng/L		96	75 - 135	6	30
Perfluorodecanesulfonic acid (PFDS)	<1.6		32.1	29.7		ng/L		93	71 - 131	4	30
Perfluorododecanesulfonic acid (PFDoS)	<1.6		32.2	23.8		ng/L		74	67 - 127	7	30
Perfluorooctanesulfonamide (FOSA)	0.98	J	33.3	33.9		ng/L		99	73 - 133	1	30
NMeFOSA	<1.6		33.3	33.1		ng/L		100	67 - 154	6	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<16		33.3	30.8		ng/L		93	76 - 136	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<16		33.3	31.2		ng/L		94	76 - 136	6	30
NMeFOSE	<3.3		33.3	34.6		ng/L		104	70 - 130	10	30
NEtFOSE	<1.6		33.3	32.6		ng/L		98	71 - 131	0	30
4:2 FTS	<16		31.1	35.4		ng/L		114	79 - 139	7	30
6:2 FTS	11	J	31.5	38.7		ng/L		88	59 - 175	2	30
8:2 FTS	16		31.9	41.1		ng/L		79	75 - 135	8	30
10:2 FTS	6.4		32.1	41.4		ng/L		109	64 - 142	12	30
DONA	<1.6		31.3	32.2		ng/L		103	79 - 139	8	30
HFPO-DA (GenX)	<3.3		33.3	34.6		ng/L		104	51 - 173	1	30
F-53B Major	<1.6		31.0	30.3		ng/L		98	75 - 135	1	30
F-53B Minor	<1.6		31.3	30.3		ng/L		97	54 - 114	0	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*78*		*25 - 150*
13C5 PFPeA	*86*		*25 - 150*
13C2 PFHxA	*90*		*25 - 150*
13C4 PFHpA	*88*		*25 - 150*
13C4 PFOA	*83*		*25 - 150*
13C5 PFNA	*93*		*25 - 150*

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

Lab Sample ID: 320-63229-1 MSD
Matrix: Water
Analysis Batch: 400304

Client Sample ID: SW-40 (072820)
Prep Type: Total/NA
Prep Batch: 400044

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C2 PFDA	*78*		*25 - 150*
13C2 PFUnA	*95*		*25 - 150*
13C2 PFDoA	*80*		*25 - 150*
13C2 PFTeDA	*61*		*25 - 150*
13C2 PFHxDA	*48*		*25 - 150*
13C3 PFBS	*85*		*25 - 150*
18O2 PFHxS	*87*		*25 - 150*
13C4 PFOS	*88*		*25 - 150*
13C8 FOSA	*90*		*25 - 150*
d3-NMeFOSAA	*99*		*25 - 150*
d5-NEtFOSAA	*100*		*25 - 150*
d-N-MeFOSA-M	*34*		*20 - 150*
d-N-EtFOSA-M	*26*		*20 - 150*
d7-N-MeFOSE-M	*23*		*10 - 120*
d9-N-EtFOSE-M	*23*		*10 - 120*
M2-4:2 FTS	*88*		*25 - 150*
M2-6:2 FTS	*102*		*25 - 150*
M2-8:2 FTS	*103*		*25 - 150*
13C3 HFPO-DA	*84*		*25 - 150*

Lab Sample ID: MB 320-401176/1-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 401176

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.0		2.0	0.35	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.29	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.46	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.344	J	2.0	0.17	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.16	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		08/04/20 18:26	08/05/20 10:28	1

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

Lab Sample ID: MB 320-401176/1-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 401176

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.45	ng/L		08/04/20 18:26	08/05/20 10:28	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.35	ng/L		08/04/20 18:26	08/05/20 10:28	1
NEtFOSA	<2.0		2.0	0.87	ng/L		08/04/20 18:26	08/05/20 10:28	1
NMeFOSA	<2.0		2.0	0.43	ng/L		08/04/20 18:26	08/05/20 10:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<20		20	3.1	ng/L		08/04/20 18:26	08/05/20 10:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<20		20	1.9	ng/L		08/04/20 18:26	08/05/20 10:28	1
NMeFOSE	<4.0		4.0	1.4	ng/L		08/04/20 18:26	08/05/20 10:28	1
NEtFOSE	<2.0		2.0	0.85	ng/L		08/04/20 18:26	08/05/20 10:28	1
4:2 FTS	<20		20	5.2	ng/L		08/04/20 18:26	08/05/20 10:28	1
6:2 FTS	<20		20	2.0	ng/L		08/04/20 18:26	08/05/20 10:28	1
8:2 FTS	<20		20	2.0	ng/L		08/04/20 18:26	08/05/20 10:28	1
10:2 FTS	<2.0		2.0	0.19	ng/L		08/04/20 18:26	08/05/20 10:28	1
DONA	<2.0		2.0	0.18	ng/L		08/04/20 18:26	08/05/20 10:28	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		08/04/20 18:26	08/05/20 10:28	1
F-53B Major	<2.0		2.0	0.24	ng/L		08/04/20 18:26	08/05/20 10:28	1
F-53B Minor	<2.0		2.0	0.32	ng/L		08/04/20 18:26	08/05/20 10:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*77*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C5 PFPeA	*86*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C2 PFHxA	*88*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C4 PFHpA	*89*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C4 PFOA	*94*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C5 PFNA	*104*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C2 PFDA	*116*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C2 PFUnA	*105*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C2 PFDoA	*117*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C2 PFTeDA	*111*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C2 PFHxDA	*100*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C3 PFBS	*76*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
18O2 PFHxS	*79*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C4 PFOS	*78*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C8 FOSA	*82*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
d3-NMeFOSAA	*102*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
d5-NEtFOSAA	*96*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
d-N-MeFOSA-M	*57*		*20 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
d-N-EtFOSA-M	*33*		*20 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
d7-N-MeFOSE-M	*22*		*10 - 120*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
d9-N-EtFOSE-M	*18*		*10 - 120*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
M2-4:2 FTS	*104*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
M2-6:2 FTS	*106*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
M2-8:2 FTS	*102*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*
13C3 HFPO-DA	*83*		*25 - 150*	*08/04/20 18:26*	*08/05/20 10:28*	*1*

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

Lab Sample ID: LCS 320-401176/2-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 401176

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.2		ng/L		106	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	35.0		ng/L		88	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	41.1		ng/L		103	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	38.9		ng/L		97	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	36.1		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	40.1	40.8		ng/L		102	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	36.7		ng/L		92	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	33.2		ng/L		83	68 - 128
Perfluorododecanoic acid (PFDoA)	40.2	42.5		ng/L		106	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	43.7		ng/L		109	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	36.0		ng/L		90	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.8		ng/L		102	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	45.8		ng/L		115	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	35.2		ng/L		99	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	36.6		ng/L		97	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.0		ng/L		93	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.2		ng/L		103	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	37.4		ng/L		101	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	37.8		ng/L		98	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	37.1		ng/L		96	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	37.0		ng/L		96	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	40.8		ng/L		102	73 - 133
NMeFOSA	40.0	46.4		ng/L		116	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	32.7		ng/L		82	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.3		ng/L		93	76 - 136
NMeFOSE	40.0	44.7		ng/L		112	70 - 130
NEtFOSE	40.0	41.2		ng/L		103	71 - 131
4:2 FTS	37.4	36.6		ng/L		98	79 - 139
6:2 FTS	37.9	36.7		ng/L		97	59 - 175
8:2 FTS	38.3	38.0		ng/L		99	75 - 135
10:2 FTS	38.6	47.8		ng/L		124	64 - 142
DONA	37.7	41.7		ng/L		111	79 - 139
HFPO-DA (GenX)	40.0	41.3		ng/L		103	51 - 173
F-53B Major	37.3	36.8		ng/L		99	75 - 135
F-53B Minor	37.7	37.1		ng/L		98	54 - 114

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

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	84		25 - 150
13C5 PFPeA	95		25 - 150
13C2 PFHxA	93		25 - 150
13C4 PFHpA	98		25 - 150
13C4 PFOA	114		25 - 150
13C5 PFNA	119		25 - 150
13C2 PFDA	121		25 - 150
13C2 PFUnA	145		25 - 150
13C2 PFDoA	125		25 - 150
13C2 PFTeDA	134		25 - 150
13C2 PFHxDA	134		25 - 150
13C3 PFBS	84		25 - 150
18O2 PFHxS	86		25 - 150
13C4 PFOS	85		25 - 150
13C8 FOSA	90		25 - 150
d3-NMeFOSAA	116		25 - 150
d5-NEtFOSAA	106		25 - 150
d-N-MeFOSA-M	58		20 - 150
d-N-EtFOSA-M	35		20 - 150
d7-N-MeFOSE-M	22		10 - 120
d9-N-EtFOSE-M	21		10 - 120
M2-4:2 FTS	105		25 - 150
M2-6:2 FTS	119		25 - 150
M2-8:2 FTS	116		25 - 150
13C3 HFPO-DA	91		25 - 150

Lab Sample ID: LCSD 320-401176/3-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 401176

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	42.5		ng/L		106	76 - 136	1	30
Perfluoropentanoic acid (PFPeA)			40.0	34.9		ng/L		87	71 - 131	0	30
Perfluorohexanoic acid (PFHxA)			40.0	40.4		ng/L		101	73 - 133	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.1		ng/L		100	72 - 132	3	30
Perfluorooctanoic acid (PFOA)			40.0	37.4		ng/L		93	70 - 130	4	30
Perfluorononanoic acid (PFNA)			40.1	44.1		ng/L		110	75 - 135	8	30
Perfluorodecanoic acid (PFDA)			40.0	38.8		ng/L		97	76 - 136	5	30
Perfluorododecanoic acid (PFDoA)			40.2	39.5		ng/L		98	71 - 131	7	30
Perfluorotridecanoic acid (PFTriA)			40.0	34.4		ng/L		86	71 - 131	24	30
Perfluorotetradecanoic acid (PFTeA)			40.0	42.1		ng/L		105	70 - 130	16	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	41.9		ng/L		105	76 - 136	3	30
Perfluoro-n-octadecanoic acid (PFODA)			40.0	44.9		ng/L		112	58 - 145	2	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	67 - 127	7	30
Perfluoropentanesulfonic acid (PFPeS)			37.5	39.6		ng/L		106	66 - 126	8	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	34.9		ng/L		96	59 - 119	3	30

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

Lab Sample ID: LCSD 320-401176/3-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 401176

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.5		ng/L		106	76 - 136	3	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.4		ng/L		101	70 - 130	0	30
Perfluorononanesulfonic acid (PFNS)			38.4	36.6		ng/L		95	75 - 135	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.8		ng/L		93	71 - 131	3	30
Perfluorododecanesulfonic acid (PFDoS)			38.7	36.7		ng/L		95	67 - 127	1	30
Perfluorooctanesulfonamide (FOSA)			40.0	39.9		ng/L		100	73 - 133	2	30
NMeFOSA			40.0	47.3		ng/L		118	67 - 154	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	33.8		ng/L		84	76 - 136	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	37.9		ng/L		95	76 - 136	2	30
NMeFOSE			40.0	39.9		ng/L		100	70 - 130	11	30
NEtFOSE			40.0	40.4		ng/L		101	71 - 131	2	30
4:2 FTS			37.4	39.3		ng/L		105	79 - 139	7	30
6:2 FTS			37.9	39.0		ng/L		103	59 - 175	6	30
8:2 FTS			38.3	39.3		ng/L		102	75 - 135	3	30
10:2 FTS			38.6	48.0		ng/L		125	64 - 142	0	30
DONA			37.7	41.1		ng/L		109	79 - 139	1	30
HFPO-DA (GenX)			40.0	42.7		ng/L		107	51 - 173	3	30
F-53B Major			37.3	37.1		ng/L		99	75 - 135	1	30
F-53B Minor			37.7	37.8		ng/L		100	54 - 114	2	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*72*		*25 - 150*
13C5 PFPeA	*84*		*25 - 150*
13C2 PFHxA	*82*		*25 - 150*
13C4 PFHpA	*83*		*25 - 150*
13C4 PFOA	*99*		*25 - 150*
13C5 PFNA	*100*		*25 - 150*
13C2 PFDA	*109*		*25 - 150*
13C2 PFDoA	*103*		*25 - 150*
13C2 PFTeDA	*93*		*25 - 150*
13C2 PFHxDA	*114*		*25 - 150*
13C3 PFBS	*75*		*25 - 150*
18O2 PFHxS	*79*		*25 - 150*
13C4 PFOS	*79*		*25 - 150*
13C8 FOSA	*77*		*25 - 150*
d3-NMeFOSAA	*96*		*25 - 150*
d5-NEtFOSAA	*87*		*25 - 150*
d-N-MeFOSA-M	*51*		*20 - 150*
d-N-EtFOSA-M	*30*		*20 - 150*
d7-N-MeFOSE-M	*19*		*10 - 120*
d9-N-EtFOSE-M	*15*		*10 - 120*
M2-4:2 FTS	*95*		*25 - 150*
M2-6:2 FTS	*100*		*25 - 150*

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

Lab Sample ID: LCSD 320-401176/3-A
Matrix: Water
Analysis Batch: 401232

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 401176

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-8:2 FTS	*96*		*25 - 150*
13C3 HFPO-DA	*79*		*25 - 150*

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

Lab Sample ID: LCSD 320-401176/3-A
Matrix: Water
Analysis Batch: 401322

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 401176

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA) - RA			40.0	35.1		ng/L		88	68 - 128	5	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C2 PFUnA - RA	*124*		*25 - 150*

LCMS

Prep Batch: 400044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63229-1	SW-40 (072820)	Total/NA	Water	3535	
320-63229-2 - DL	SW-39 (072820)	Total/NA	Water	3535	
320-63229-2	SW-39 (072820)	Total/NA	Water	3535	
320-63229-3 - DL	DUP-01	Total/NA	Water	3535	
320-63229-3	DUP-01	Total/NA	Water	3535	
MB 320-400044/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-400044/2-A	Lab Control Sample	Total/NA	Water	3535	
320-63229-1 MS	SW-40 (072820)	Total/NA	Water	3535	
320-63229-1 MSD	SW-40 (072820)	Total/NA	Water	3535	

Analysis Batch: 400304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63229-1	SW-40 (072820)	Total/NA	Water	537 (modified)	400044
320-63229-2	SW-39 (072820)	Total/NA	Water	537 (modified)	400044
320-63229-3	DUP-01	Total/NA	Water	537 (modified)	400044
320-63229-1 MS	SW-40 (072820)	Total/NA	Water	537 (modified)	400044
320-63229-1 MSD	SW-40 (072820)	Total/NA	Water	537 (modified)	400044

Analysis Batch: 400416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-400044/1-A	Method Blank	Total/NA	Water	537 (modified)	400044

Analysis Batch: 400609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-400044/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	400044

Analysis Batch: 400961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63229-3 - DL	DUP-01	Total/NA	Water	537 (modified)	400044

Analysis Batch: 401119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63229-2 - DL	SW-39 (072820)	Total/NA	Water	537 (modified)	400044

Prep Batch: 401176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63229-4	FIELD BLANK-07282020	Total/NA	Water	3535	
MB 320-401176/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-401176/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-401176/3-A	Lab Control Sample Dup	Total/NA	Water	3535	
LCSD 320-401176/3-A - RA	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 401232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63229-4	FIELD BLANK-07282020	Total/NA	Water	537 (modified)	401176
MB 320-401176/1-A	Method Blank	Total/NA	Water	537 (modified)	401176
LCS 320-401176/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	401176
LCSD 320-401176/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	401176

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

LCMS

Analysis Batch: 401322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 320-401176/3-A - RA	Lab Control Sample Dup	Total/NA	Water	537 (modified)	401176

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Client Sample ID: SW-40 (072820)

Lab Sample ID: 320-63229-1

Date Collected: 07/28/20 13:50

Matrix: Water

Date Received: 07/30/20 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			307 mL	10.0 mL	400044	07/31/20 11:23	LN	TAL SAC
Total/NA	Analysis	537 (modified)		1			400304	08/01/20 12:06	D1R	TAL SAC

Client Sample ID: SW-39 (072820)

Lab Sample ID: 320-63229-2

Date Collected: 07/28/20 14:30

Matrix: Water

Date Received: 07/30/20 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	DL		302 mL	10.0 mL	400044	07/31/20 11:23	LN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			401119	08/05/20 01:06	D1R	TAL SAC
Total/NA	Prep	3535			302 mL	10.0 mL	400044	07/31/20 11:23	LN	TAL SAC
Total/NA	Analysis	537 (modified)		1			400304	08/01/20 12:34	D1R	TAL SAC

Client Sample ID: DUP-01

Lab Sample ID: 320-63229-3

Date Collected: 07/28/20 00:00

Matrix: Water

Date Received: 07/30/20 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	DL		296.1 mL	10.0 mL	400044	07/31/20 11:23	LN	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			400961	08/04/20 13:30	KJP	TAL SAC
Total/NA	Prep	3535			296.1 mL	10.0 mL	400044	07/31/20 11:23	LN	TAL SAC
Total/NA	Analysis	537 (modified)		1			400304	08/01/20 12:43	D1R	TAL SAC

Client Sample ID: FIELD BLANK-07282020

Lab Sample ID: 320-63229-4

Date Collected: 07/28/20 13:15

Matrix: Water

Date Received: 07/30/20 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			278.3 mL	10.00 mL	401176	08/04/20 18:26	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			401232	08/05/20 10:56	MM	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.
Job ID: 320-63229-1
Project/Site: Marinette, WI 30015294.00002

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	07-01-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-21
Maine	State	2018009	04-14-22
Michigan	State	9947	01-31-22
Nevada	State	CA000442020-1	08-31-20
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-20
Wyoming	State Program	8TMS-L	01-28-19 *

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 320-63229-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-63229-1	SW-40 (072820)	Water	07/28/20 13:50	07/30/20 09:30	
320-63229-2	SW-39 (072820)	Water	07/28/20 14:30	07/30/20 09:30	
320-63229-3	DUP-01	Water	07/28/20 00:00	07/30/20 09:30	
320-63229-4	FIELD BLANK-07282020	Water	07/28/20 13:15	07/30/20 09:30	

Chain of Custody Record 433078

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Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: Lisa Rutkowski	Site Contact:	Date: 7-28-20	COC No:
Company Name: Arcadis	Tel/Email:	Lab Contact:	Carrier:	1 of 1 COCs
Address: 126 N. JEFFERSON AVE #400	**Analysis Turnaround Time**			Sampler:
City/State/Zip: MILWAUKEE, WI 53202	☒ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
Phone:	TAT if different from Below _____			Walk-in Client:
Fax:	☒ 2 weeks			Lab Sampling:
Project Name: MARINETTE, WI	☐ 1 week			
Site: MARINETTE, WI	☐ 2 days			Job / SDG No.:
PO# 30015294.0002	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	PFAS (537, 36 compounds) 1.20.20 FSS	Sample Specific Notes:
SW-40 (072820)	7-28-20	1350	G	W	6	N	Y	X	MS/MSD
SW-39 (072820)	7-28-20	1430	G	W	2	N	N	X	
DUP-01	7-28-20	—	G	W	2	N	N	X	DUPLICATE
FIELD BLANK-072820 20	7-28-20	1315	G	W	2	N	N	X	FIELD BLANK

320-63229 Chain of Custody

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.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

CONTACT L.HOVER OR L.RUTKOWSKI W/ QUESTIONS

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 0.3 Corr'd: 0.8 | Therm ID No.: AK6

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Arcadis	7-29-20 1100	[signature]	TA	7-29-20 11:00
Relinquished by: [signature]	Company: TA	Date/Time: 7-29-20 16:00	Received by: [signature]	Company: [signature]	Date/Time: 7/30/20 930
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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Sacramento Sample Receiving Notes

320-63229 Field Sheet

Job: _____

Tracking # : 7125 4943 0045

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

GSO / OnTrac / Goldstreak / USPS / Other _____

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

Therm. ID: AH6 Corr. Factor: (+ / -) 0.5 °C

Ice X Wet X Gel _____ Other _____

Cooler Custody Seal: 991065

Cooler ID: —

Temp Observed: 0.3 °C Corrected: 0.6 °C

From: Temp Blank ☒ Sample ☐

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

Initials: DH Date: 7/30/20

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

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

Initials: _____ Date: 7/30/20

Notes: _____

Trizma Lot #(s): _____

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

Initials: _____ Date: 7/30/20


TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Part # 159469-434 RIT2 EXP 09/20
ORIGIN ID:RRLA (262) 202-5955
SHIPPING
TESTAMERICA
4125 N 124TH ST
BROOKFIELD, WI 53005
UNITED STATES US
SHIP DATE: 29JUL20
ACTWGT: 22.10 LB
CAD: 525155/CAFE3211
BILL RECIPIENT
TO SAMPLE RECIEPT
TESTAMERICA LAB
880 RIVERSIDE PKWY
WEST SACRAMENTO CA 956051500
(262) 202-5955
REF:
DEPT:
FedEx
Express
THU - 30 JUL 10:30A
PRIORITY OVERNIGHT
TRK# 0201 7125 4943 0045
XH BLUA
CA-US
eurofins | Environment Testing TestAmerica
991065
Custody
DATE
SIGNATURE

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Part # 159469-434 RIT2 EXP 09/20

ORIGIN ID:RRLA (262) 202-5955
SHIPPING
TESTAMERICA
4125 N 124TH ST

BROOKFIELD, WI 53005
UNITED STATES US

SHIP DATE: 29JUL20
ACTWGT: 22.10 LB
CAD: 525155/CAFE3211

BILL RECIPIENT

TO SAMPLE RECIEPT
TESTAMERICA LAB
880 RIVERSIDE PKWY

WEST SACRAMENTO CA 956051500

(262) 202-5955 REF:
INV:
PO: DEPT:

FedEx Express

TRK# 0201 7125 4943 0045

THU - 30 JUL 10:30A
PRIORITY OVERNIGHT

XH BLUA

9560
CA-US SM

1 10:30 0045 07.30 F

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991065

Custody S

DATE

SIGNATURE

RT

TAL-0090

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-63229-1

Login Number: 63229
List Number: 1
Creator: Nuval, Mark-Anthony M

List Source: Eurofins TestAmerica, Sacramento

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	991065
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?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

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

Laboratory Job ID: 500-185673-1
Client Project/Site: Marinette, WI 30015294.00002

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

Attn: Lisa Rutkowski

Authorized for release by:
8/5/2020 9:56:57 AM

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

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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 500-185673-1

Job ID: 500-185673-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative
500-185673-1

Comments
No additional comments.

Receipt
The samples were received on 7/30/2020 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 0.9º C.

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

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 500-185673-1
Project/Site: Marinette, WI 30015294.00002

Method	Method Description	Protocol	Laboratory
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 500-185673-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-185673-1	SW-40 (072820)	Water	07/28/20 13:50	07/30/20 09:30	
500-185673-2	SW-39 (072820)	Water	07/28/20 14:30	07/30/20 09:30	
500-185673-3	DUP-01	Water	07/28/20 00:00	07/30/20 09:30	

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 500-185673-1
Project/Site: Marinette, WI 30015294.00002

Client Sample ID: SW-40 (072820)
Lab Sample ID: 500-185673-1
Date Collected: 07/28/20 13:50
Matrix: Water
Date Received: 07/30/20 09:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	2.0	J	5.0	1.9	mg/L			08/03/20 11:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 500-185673-1
Project/Site: Marinette, WI 30015294.00002

Client Sample ID: SW-39 (072820)
Lab Sample ID: 500-185673-2
Date Collected: 07/28/20 14:30
Matrix: Water
Date Received: 07/30/20 09:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	52		5.0	1.9	mg/L			08/03/20 11:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 500-185673-1

Client Sample ID: DUP-01
Date Collected: 07/28/20 00:00
Date Received: 07/30/20 09:30

Lab Sample ID: 500-185673-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	27		5.0	1.9	mg/L			08/03/20 11:15	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Job ID: 500-185673-1
Project/Site: Marinette, WI 30015294.00002

Qualifiers

General Chemistry

Qualifier	Qualifier Description
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.
¤	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 Association Summary

Client: ARCADIS U.S., Inc.
Job ID: 500-185673-1
Project/Site: Marinette, WI 30015294.00002

General Chemistry

Analysis Batch: 554977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-185673-1	SW-40 (072820)	Total/NA	Water	SM 2540D	
500-185673-2	SW-39 (072820)	Total/NA	Water	SM 2540D	
500-185673-3	DUP-01	Total/NA	Water	SM 2540D	
MB 500-554977/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-554977/2	Lab Control Sample	Total/NA	Water	SM 2540D	
500-185673-1 MS	SW-40 (072820)	Total/NA	Water	SM 2540D	
500-185673-1 MSD	SW-40 (072820)	Total/NA	Water	SM 2540D	

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30015294.00002

Job ID: 500-185673-1

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

Lab Sample ID: MB 500-554977/1
Matrix: Water
Analysis Batch: 554977

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			08/03/20 10:45	1

Lab Sample ID: LCS 500-554977/2
Matrix: Water
Analysis Batch: 554977

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			200	178		mg/L		89	80 - 120		

Lab Sample ID: 500-185673-1 MS
Matrix: Water
Analysis Batch: 554977

Client Sample ID: SW-40 (072820)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids	2.0	J	100	99.0		mg/L		97	75 - 125		

Lab Sample ID: 500-185673-1 MSD
Matrix: Water
Analysis Batch: 554977

Client Sample ID: SW-40 (072820)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids	2.0	J	100	102		mg/L		100	75 - 125	3	20

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 500-185673-1
Project/Site: Marinette, WI 30015294.00002

Client Sample ID: SW-40 (072820)
Lab Sample ID: 500-185673-1
Date Collected: 07/28/20 13:50
Matrix: Water
Date Received: 07/30/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	554977		SMO	TAL CHI
						(Start) 08/03/20 11:10		
						(End) 08/03/20 11:11		

Client Sample ID: SW-39 (072820)
Lab Sample ID: 500-185673-2
Date Collected: 07/28/20 14:30
Matrix: Water
Date Received: 07/30/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	554977		SMO	TAL CHI
						(Start) 08/03/20 11:14		
						(End) 08/03/20 11:15		

Client Sample ID: DUP-01
Lab Sample ID: 500-185673-3
Date Collected: 07/28/20 00:00
Matrix: Water
Date Received: 07/30/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	554977		SMO	TAL CHI
						(Start) 08/03/20 11:15		
						(End) 08/03/20 11:17		

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 500-185673-1
Project/Site: Marinette, WI 30015294.00002

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-20

Chain of Custody Record

433079

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8

Client Contact	Project Manager: L. RUTKOWSKI	Site Contact:	Date: 7-28-20	COC No:
Company Name: ARCADIS	Tel/Email:	Lab Contact:	Carrier:	1 of 1 COCs
Address: 126 N. JEFFERSON AVE #400	Analysis Turnaround Time			Sampler:
City/State/Zip: MILWAUKEE, WI 53202	☒ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone:	TAT if different from Below _____			Walk-in Client:
Fax:	☒ 2 weeks			Lab Sampling:
Project Name: MARINETTE, WI	☐ 1 week			Job / SDG No.: 500-185623
Site: MARINETTE, WI	☐ 2 days			
P O # 30015294.00002	☐ 1 day			

500-185673 COC

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	TSS	Sample Specific Notes:
1	SW-46(072820)	7-28-20	1350	G	W	1	N	Y	X	MS/MSD
2	SW-39(072820)	7-28-20	1430	G	W	1	N	N	X	
3	DUP-01	7-28-20	—	G	W	1	N	N	X	DUPLICATE

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.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
CONTACT E. HOVER OR L. RUTKOWSKI W/QUESTIONS

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 0.1 Corr'd: 0.9 | Therm ID No.: _____

	Company	Date/Time		Company	Date/Time
Relinquished by: Danny Kehoe	Arcadis	7-29-20 1100	Received by:	TA	7-29-20 11:00
Relinquished by:	TA	7-29-20 16:00	Received by:		
Relinquished by:			Received in Laboratory by: Ellen Scott	TA-CHI	7/30/20 093

500-185673 Wayb

ORIGIN ID:RRLA (262) 202-5955
SHIPPING
TESTAMERICA
4125 N 124TH ST

BROOKFIELD, WI 53005
UNITED STATES US

SHIP DATE: 29JUL20
ACTWGT: 21.15 LB MAN
CAD: 525155/CAFE3211

BILL RECIPIENT

TO **SAMPLE RECEIPT**
TESTAMERICA LABS
2417 BOND STREET

UNIVERSITY PARK IL 60484
(708) 534-6200 REF:
INV:
PO: DEPT:

FedEx
Express

TRK# 0201 **7125 4943 0056**

THU - 30 JUL 10:30A
PRIORITY OVERNIGHT

79 JOTA

60484
IL-US **ORD**

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-185673-1

Login Number: 185673
List Number: 1
Creator: Scott, Sherri L

List Source: Eurofins TestAmerica, Chicago

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	0.9
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	