

Alyssa Sellwood  
Wisconsin Department of Natural Resources  
101 South Webster Street  
Madison, WI 53707

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

Date:  
December 29, 2020

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

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

Dear Ms. Sellwood:

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

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

Site Name:  
Tyco Fire Technology  
Center

This Sample Results Notification is being provided to satisfy NR716.14(2) for two surface water samples that were collected from Ditch B on November 20, 2020. We recorded the sample location, date, and other information and had the sample tested at an accredited, independent laboratory. That testing is now complete, and the results are summarized in the attached table with sample locations depicted in the attached figure.

BRRTS No.:  
02-38-580694

Water quality is being monitored in Ditch B immediately upstream and downstream of the existing treatment system on a bi-weekly basis until the ditch freezes. The results from water tested 10 feet downstream of the Ditch B treatment system showed PFOA at 830 nanograms per liter (ng/L) and PFOS at 53 ng/L. Flows in the ditch were above baseload levels and the treatment system capacity, so water was bypassing the treatment system during this sampling event.

The owner of the parcels accessed to collect the samples was notified of the results collected on their property. A copy of that letter is attached.

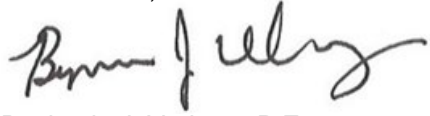
These results will be combined with other previously collected and future planned sampling results and evaluated comprehensively in a future submittal.

Alyssa Sellwood  
Wisconsin Department of Natural Resources  
December 29, 2020

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

Sincerely,

Arcadis U.S., Inc.

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

Benjamin J. Verburg, P.E.  
Principal Engineer

Copies:

David Neste  
Bridget Kelly  
Jeff Danko  
Scott Wahl

Attachment:

Summary Results Table  
Sample Locations Figure  
Laboratory Report  
Owner Notification Letter (sent separately)

**Table 1 - Surface Water Sample Results**

Location		SW-39	SW-39	SW-L06
Sample Date		11/20/2020	11/20/2020	11/20/2020
Sample Type		N	FD	N
Chemical Name	Units			
PFOA	ng/l	830 D	740 D	2100 D
PFOS	ng/l	51	53	160
PFBS	ng/l	2.1	1.9	5.0
PFHpA	ng/l	46	40	110
PFHxS	ng/l	22	19	54
PFNA	ng/l	25	23	71
PFDA	ng/l	1.6 J	2.2	5.4
PFDoA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
PFHxA	ng/l	120	100	260
PFTeA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
PFTriA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
PFUnA	ng/l	< 2.0 U	< 1.9 U	1.6 J
NEtFOSAA	ng/l	1.7 J	2.1 J	6.5
NMeFOSAA	ng/l	< 4.9 U	< 4.7 U	< 4.7 U
PFBA	ng/l	35	31	68
PFPeA	ng/l	90	81	200
PFHxDA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
PFODA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
PFPeS	ng/l	2.1	1.6 J	4.5
PFHpS	ng/l	1.3 J	1.2 J	3.4
PFNS	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
PFDS	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
PFDoS	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
FOSA	ng/l	7.8	8.3	28
NEtFOSA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
NMeFOSA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
NMeFOSE	ng/l	< 3.9 U	< 3.8 U	< 3.8 U
NEtFOSE	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
4:2 FTS	ng/l	10 DJ	8.4	22
6:2 FTS	ng/l	560 D	510 D	1400 D
8:2 FTS	ng/l	50 DJ	69 J	170 D
10:2 FTS	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
DONA	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
GenX	ng/l	< 3.9 U	< 3.8 U	< 3.8 U
F-53B Major	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
F-53B Minor	ng/l	< 2.0 U	< 1.9 U	< 1.9 U
Total Suspended Solids	mg/l	6.0	5.5	22

**Notes:**

ng/l = nanograms per liter

mg/l - milligrams per liter

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

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

D = Dilution required for sample analysis

PFOA = Perfluorooctanoic acid (C8)

PFOS = Perfluorooctanesulfonic acid (C8)

PFBS = Perfluorobutanesulfonic acid (C4)

PFHpA = Perfluoroheptanoic acid (C7)

PFHxS = Perfluorohexanesulfonic acid (C6)

PFNA = Perfluorononanoic acid (C9)

PFDA = Perfluorodecanoic acid (C10)

PFDoA = Perfluorododecanoic acid (C12)

PFHxA = Perfluorohexanoic acid (C6)

PFTeA = Perfluorotetradecanoic acid (C14)

PFTriA = Perfluorotridecanoic acid (C13)

PFUnA = Perfluoroundecanoic acid (C11)

NEtFOSAA = N-ethylperfluorooctanesulfonamidoacetic acid (C12)

NMeFOSAA = N-methylperfluorooctanesulfonamidoacetic acid (C11)

PFBA = Perfluorobutanoic acid (C4)

PFPeA = Perfluoropentanoic acid (C5)

PFHxDA = Perfluoro-n-hexadecanoic acid (C16)

PFODA = Perfluoro-n-octadecanoic acid (C18)

PFPeS = Perfluoropentanesulfonic acid (C5)

PFHpS = Perfluoroheptanesulfonic acid (C7)

PFNS = Perfluorononanesulfonic acid (C9)

PFDS = Perfluorodecanesulfonic acid (C10)

PFDoS = Perfluorododecanesulfonic acid (C12)

FOSA = Perfluorooctanesulfonamide (C8)

NEtFOSA = N-ethylperfluorooctanesulfonamide (C10)

NMeFOSA = N-methylperfluorooctanesulfonamide (C9)

NMeFOSE = N-methylperfluorooctanesulfonamidoethanol (C11)

NEtFOSE = N-ethylperfluorooctanesulfonamidoethanol (C12)

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

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

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

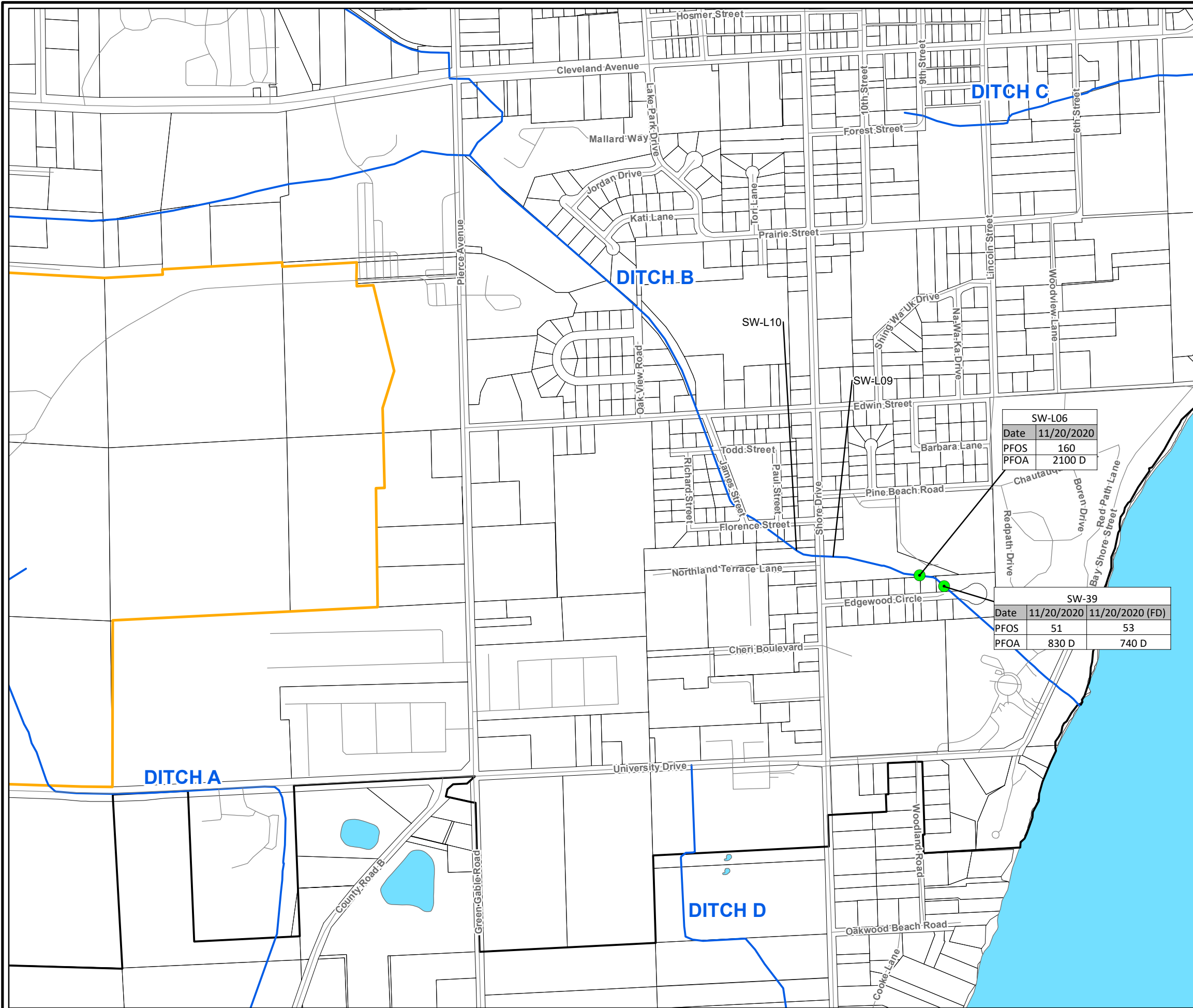
10:2 FTS = 10:2 fluorotelomer sulfonate (C12)

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

GenX = Hexafluoropropylene oxide dimer acid (C6)

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

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



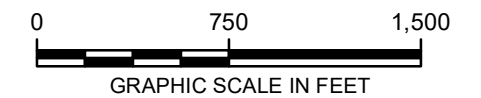
LEGEND:

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

UNITS ARE IN NANOGRAMS PER LITER  
 PFOS = PERFLUOROOCETANESULFONIC ACID  
 PFOA = PERFLUOROOCETANOIC ACID

NOTES:

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



TYCO FIRE TECHNOLOGY CENTER  
 MARINETTE, WISCONSIN

**SURFACE WATER SAMPLE  
 LOCATIONS AND RESULTS  
 L06 AND SW-39**

**ARCADIS** | **FIGURE 1**

## ANALYTICAL REPORT

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

Laboratory Job ID: 320-67100-1  
Client Project/Site: Marinette 30062361.00001  
Revision: 1

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

Attn: Lisa Rutkowski



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Authorized for release by:  
12/21/2020 2:55:12 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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

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

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



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# Definitions/Glossary

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

Job ID: 320-67100-1

## Qualifiers

### LCMS

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

### General Chemistry

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.

## 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



# Case Narrative

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

Job ID: 320-67100-1

## Job ID: 320-67100-1

### Laboratory: Eurofins TestAmerica, Sacramento

#### Narrative

#### Job Narrative 320-67100-1

#### Comments

No additional comments.

#### Revision

The report being provided is a revision of the original report sent on 12/8/2020. The report (revision 1) is being revised due to: Report to include full secondary dilutions per client..

#### Receipt

The samples were received on 11/21/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1° C.

#### Receipt Exceptions

The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): 320-67100-1, 320-67100-2 and 320-67100-3.

Sample 1 - PFAS container time listed 10:45, COC and TSS container listed 10:40

Sample 2 and 3 - PFAS container time listed 10:55, COC and TSS container listed 10:50

#### LCMS

Method 537 (modified): Due to the high concentration of Perfluorooctanoic acid (PFOA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-436978 and analytical batch 320-437176 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 537 (modified): Results for samples 320-67100-1, 320-67100-2 and 320-67100-3 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): The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: 320-67100-1, 320-67100-2 and 320-67100-3. These analytes have been qualified; however, the peaks did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range. The samples were diluted to within calibration range, and both sets of data are reported.

Method 537 (modified): M2-8:2 FTS Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: 320-67100-2. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): M2-4:2 FTS and M2-8:2 FTS Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for the following sample: 320-67100-1. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

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

#### General Chemistry

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

#### Organic Prep

Method 3535: The following samples were beige prior to extraction: 320-67100-1, 320-67100-2 and 320-67100-3 3535 PFC Water 320-436978

Method 3535: During the solid phase extraction process, the following samples contained non-settable particulates which clogged the solid phase extraction column: 320-67100-2. 3535 PFC Water 320-436978

# Case Narrative

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

Job ID: 320-67100-1

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## Job ID: 320-67100-1 (Continued)

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### Laboratory: Eurofins TestAmerica, Sacramento (Continued)

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

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# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: SW-39**

**Lab Sample ID: 320-67100-1**

Date Collected: 11/20/20 10:40

Matrix: Water

Date Received: 11/21/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	35		4.9	2.4	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluoropentanoic acid (PFPeA)	90		2.0	0.48	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorohexanoic acid (PFHxA)	120		2.0	0.57	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluoroheptanoic acid (PFHpA)	46		2.0	0.25	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorooctanoic acid (PFOA)	820	E	2.0	0.83	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorononanoic acid (PFNA)	25		2.0	0.26	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorodecanoic acid (PFDA)	1.6	J	2.0	0.30	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.54	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.72	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.87	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.92	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorobutanesulfonic acid (PFBS)	2.1		2.0	0.20	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluoropentanesulfonic acid (PFPeS)	2.1		2.0	0.29	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorohexanesulfonic acid (PFHxS)	22		2.0	0.56	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.3	J	2.0	0.19	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorooctanesulfonic acid (PFOS)	51		2.0	0.53	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.36	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.31	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.95	ng/L		11/30/20 18:50	12/01/20 15:11	1
Perfluorooctanesulfonamide (FOSA)	7.8		2.0	0.96	ng/L		11/30/20 18:50	12/01/20 15:11	1
NEtFOSA	<2.0		2.0	0.85	ng/L		11/30/20 18:50	12/01/20 15:11	1
NMeFOSA	<2.0		2.0	0.42	ng/L		11/30/20 18:50	12/01/20 15:11	1
NMeFOSAA	<4.9		4.9	1.2	ng/L		11/30/20 18:50	12/01/20 15:11	1
NEtFOSAA	1.7	J	4.9	1.3	ng/L		11/30/20 18:50	12/01/20 15:11	1
NMeFOSE	<3.9		3.9	1.4	ng/L		11/30/20 18:50	12/01/20 15:11	1
NEtFOSE	<2.0		2.0	0.83	ng/L		11/30/20 18:50	12/01/20 15:11	1
4:2 FTS	9.9		2.0	0.24	ng/L		11/30/20 18:50	12/01/20 15:11	1
6:2 FTS	540	E	4.9	2.5	ng/L		11/30/20 18:50	12/01/20 15:11	1
8:2 FTS	48		2.0	0.45	ng/L		11/30/20 18:50	12/01/20 15:11	1
10:2 FTS	<2.0		2.0	0.66	ng/L		11/30/20 18:50	12/01/20 15:11	1
DONA	<2.0		2.0	0.39	ng/L		11/30/20 18:50	12/01/20 15:11	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		11/30/20 18:50	12/01/20 15:11	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/30/20 18:50	12/01/20 15:11	1
F-53B Minor	<2.0		2.0	0.31	ng/L		11/30/20 18:50	12/01/20 15:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	83		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C5 PFPeA	102		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C2 PFHxA	123		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C4 PFHpA	126		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C4 PFOA	116		25 - 150	11/30/20 18:50	12/01/20 15:11	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: SW-39**

**Lab Sample ID: 320-67100-1**

**Date Collected: 11/20/20 10:40**

**Matrix: Water**

**Date Received: 11/21/20 10:00**

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	130		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C2 PFDA	117		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C2 PFUnA	108		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C2 PFDoA	100		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C2 PFTeDA	87		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C2 PFHxDA	71		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C3 PFBS	112		25 - 150	11/30/20 18:50	12/01/20 15:11	1
18O2 PFHxS	116		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C4 PFOS	117		25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C8 FOSA	122		10 - 150	11/30/20 18:50	12/01/20 15:11	1
d3-NMeFOSAA	89		25 - 150	11/30/20 18:50	12/01/20 15:11	1
d5-NEtFOSAA	90		25 - 150	11/30/20 18:50	12/01/20 15:11	1
d-N-MeFOSA-M	69		10 - 150	11/30/20 18:50	12/01/20 15:11	1
d-N-EtFOSA-M	50		10 - 150	11/30/20 18:50	12/01/20 15:11	1
d7-N-MeFOSE-M	47		10 - 150	11/30/20 18:50	12/01/20 15:11	1
d9-N-EtFOSE-M	34		10 - 150	11/30/20 18:50	12/01/20 15:11	1
M2-4:2 FTS	157	*5	25 - 150	11/30/20 18:50	12/01/20 15:11	1
M2-6:2 FTS	122		25 - 150	11/30/20 18:50	12/01/20 15:11	1
M2-8:2 FTS	159	*5	25 - 150	11/30/20 18:50	12/01/20 15:11	1
13C3 HFPO-DA	117		25 - 150	11/30/20 18:50	12/01/20 15:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	35	J	49	24	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluoropentanoic acid (PFPeA)	90		20	4.8	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorohexanoic acid (PFHxA)	120		20	5.7	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluoroheptanoic acid (PFHpA)	47		20	2.5	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorooctanoic acid (PFOA)	830		20	8.3	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorononanoic acid (PFNA)	26		20	2.6	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorodecanoic acid (PFDA)	<20		20	3.0	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluoroundecanoic acid (PFUnA)	<20		20	11	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorododecanoic acid (PFDoA)	<20		20	5.4	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorotridecanoic acid (PFTriA)	<20		20	13	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorotetradecanoic acid (PFTeA)	<20		20	7.2	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<20		20	8.7	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluoro-n-octadecanoic acid (PFODA)	<20		20	9.2	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorobutanesulfonic acid (PFBS)	2.3	J	20	2.0	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluoropentanesulfonic acid (PFPeS)	<20		20	2.9	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorohexanesulfonic acid (PFHxS)	21		20	5.6	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluoroheptanesulfonic Acid (PFHpS)	<20		20	1.9	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorooctanesulfonic acid (PFOS)	52		20	5.3	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorononanesulfonic acid (PFNS)	<20		20	3.6	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorodecanesulfonic acid (PFDS)	<20		20	3.1	ng/L		11/30/20 18:50	12/02/20 13:43	10
Perfluorododecanesulfonic acid (PFDoS)	<20		20	9.5	ng/L		11/30/20 18:50	12/02/20 13:43	10

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: SW-39**

**Lab Sample ID: 320-67100-1**

**Date Collected: 11/20/20 10:40**

**Matrix: Water**

**Date Received: 11/21/20 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonamide (FOSA)	<20		20	9.6	ng/L		11/30/20 18:50	12/02/20 13:43	10
NEtFOSA	<20		20	8.5	ng/L		11/30/20 18:50	12/02/20 13:43	10
NMeFOSA	<20		20	4.2	ng/L		11/30/20 18:50	12/02/20 13:43	10
NMeFOSAA	<49		49	12	ng/L		11/30/20 18:50	12/02/20 13:43	10
NEtFOSAA	<49		49	13	ng/L		11/30/20 18:50	12/02/20 13:43	10
NMeFOSE	<39		39	14	ng/L		11/30/20 18:50	12/02/20 13:43	10
NEtFOSE	<20		20	8.3	ng/L		11/30/20 18:50	12/02/20 13:43	10
<b>4:2 FTS</b>	<b>10</b>	<b>J</b>	20	2.4	ng/L		11/30/20 18:50	12/02/20 13:43	10
<b>6:2 FTS</b>	<b>560</b>		49	25	ng/L		11/30/20 18:50	12/02/20 13:43	10
<b>8:2 FTS</b>	<b>50</b>		20	4.5	ng/L		11/30/20 18:50	12/02/20 13:43	10
10:2 FTS	<20		20	6.6	ng/L		11/30/20 18:50	12/02/20 13:43	10
DONA	<20		20	3.9	ng/L		11/30/20 18:50	12/02/20 13:43	10
HFPO-DA (GenX)	<39		39	15	ng/L		11/30/20 18:50	12/02/20 13:43	10
F-53B Major	<20		20	2.4	ng/L		11/30/20 18:50	12/02/20 13:43	10
F-53B Minor	<20		20	3.1	ng/L		11/30/20 18:50	12/02/20 13:43	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	106		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C5 PFPeA	111		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C2 PFHxA	113		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C4 PFHpA	114		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C4 PFOA	120		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C5 PFNA	116		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C2 PFDA	111		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C2 PFUnA	103		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C2 PFDoA	86		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C2 PFTeDA	68		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C2 PFHxDA	69		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C3 PFBS	108		25 - 150				11/30/20 18:50	12/02/20 13:43	10
18O2 PFHxS	111		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C4 PFOS	106		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C8 FOSA	107		10 - 150				11/30/20 18:50	12/02/20 13:43	10
d3-NMeFOSAA	71		25 - 150				11/30/20 18:50	12/02/20 13:43	10
d5-NEtFOSAA	80		25 - 150				11/30/20 18:50	12/02/20 13:43	10
d-N-MeFOSA-M	64		10 - 150				11/30/20 18:50	12/02/20 13:43	10
d-N-EtFOSA-M	45		10 - 150				11/30/20 18:50	12/02/20 13:43	10
d7-N-MeFOSE-M	41		10 - 150				11/30/20 18:50	12/02/20 13:43	10
d9-N-EtFOSE-M	33		10 - 150				11/30/20 18:50	12/02/20 13:43	10
M2-4:2 FTS	94		25 - 150				11/30/20 18:50	12/02/20 13:43	10
M2-6:2 FTS	97		25 - 150				11/30/20 18:50	12/02/20 13:43	10
M2-8:2 FTS	85		25 - 150				11/30/20 18:50	12/02/20 13:43	10
13C3 HFPO-DA	110		25 - 150				11/30/20 18:50	12/02/20 13:43	10

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids</b>	<b>6.0</b>		5.0	1.9	mg/L			11/27/20 13:01	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: SW-L06-11202020**

**Lab Sample ID: 320-67100-2**

Date Collected: 11/20/20 10:50

Matrix: Water

Date Received: 11/21/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	68		4.7	2.3	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluoropentanoic acid (PFPeA)	200		1.9	0.46	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorohexanoic acid (PFHxA)	260		1.9	0.55	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluoroheptanoic acid (PFHpA)	110		1.9	0.24	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorooctanoic acid (PFOA)	2000	E	1.9	0.81	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorononanoic acid (PFNA)	71		1.9	0.26	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorodecanoic acid (PFDA)	5.4		1.9	0.29	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluoroundecanoic acid (PFUnA)	1.6	J	1.9	1.0	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.84	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.89	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorobutanesulfonic acid (PFBS)	5.0		1.9	0.19	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluoropentanesulfonic acid (PFPeS)	4.5		1.9	0.28	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorohexanesulfonic acid (PFHxS)	54		1.9	0.54	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluoroheptanesulfonic Acid (PFHpS)	3.4		1.9	0.18	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorooctanesulfonic acid (PFOS)	160		1.9	0.51	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.92	ng/L		11/30/20 18:50	12/01/20 15:21	1
Perfluorooctanesulfonamide (FOSA)	28		1.9	0.93	ng/L		11/30/20 18:50	12/01/20 15:21	1
NEtFOSA	<1.9		1.9	0.83	ng/L		11/30/20 18:50	12/01/20 15:21	1
NMeFOSA	<1.9		1.9	0.41	ng/L		11/30/20 18:50	12/01/20 15:21	1
NMeFOSAA	<4.7		4.7	1.1	ng/L		11/30/20 18:50	12/01/20 15:21	1
NEtFOSAA	6.5		4.7	1.2	ng/L		11/30/20 18:50	12/01/20 15:21	1
NMeFOSE	<3.8		3.8	1.3	ng/L		11/30/20 18:50	12/01/20 15:21	1
NEtFOSE	<1.9		1.9	0.81	ng/L		11/30/20 18:50	12/01/20 15:21	1
4:2 FTS	22		1.9	0.23	ng/L		11/30/20 18:50	12/01/20 15:21	1
6:2 FTS	1300	E	4.7	2.4	ng/L		11/30/20 18:50	12/01/20 15:21	1
8:2 FTS	160		1.9	0.44	ng/L		11/30/20 18:50	12/01/20 15:21	1
10:2 FTS	<1.9		1.9	0.64	ng/L		11/30/20 18:50	12/01/20 15:21	1
DONA	<1.9		1.9	0.38	ng/L		11/30/20 18:50	12/01/20 15:21	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		11/30/20 18:50	12/01/20 15:21	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/30/20 18:50	12/01/20 15:21	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/30/20 18:50	12/01/20 15:21	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	64		25 - 150				11/30/20 18:50	12/01/20 15:21	1
13C5 PFPeA	84		25 - 150				11/30/20 18:50	12/01/20 15:21	1
13C2 PFHxA	104		25 - 150				11/30/20 18:50	12/01/20 15:21	1
13C4 PFHpA	113		25 - 150				11/30/20 18:50	12/01/20 15:21	1
13C4 PFOA	96		25 - 150				11/30/20 18:50	12/01/20 15:21	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: SW-L06-11202020**

**Lab Sample ID: 320-67100-2**

Date Collected: 11/20/20 10:50

Matrix: Water

Date Received: 11/21/20 10:00

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	117		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C2 PFDA	110		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C2 PFUnA	99		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C2 PFDoA	76		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C2 PFTeDA	70		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C2 PFHxDA	74		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C3 PFBS	107		25 - 150	11/30/20 18:50	12/01/20 15:21	1
18O2 PFHxS	109		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C4 PFOS	113		25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C8 FOSA	110		10 - 150	11/30/20 18:50	12/01/20 15:21	1
d3-NMeFOSAA	83		25 - 150	11/30/20 18:50	12/01/20 15:21	1
d5-NEtFOSAA	84		25 - 150	11/30/20 18:50	12/01/20 15:21	1
d-N-MeFOSA-M	53		10 - 150	11/30/20 18:50	12/01/20 15:21	1
d-N-EtFOSA-M	42		10 - 150	11/30/20 18:50	12/01/20 15:21	1
d7-N-MeFOSE-M	43		10 - 150	11/30/20 18:50	12/01/20 15:21	1
d9-N-EtFOSE-M	39		10 - 150	11/30/20 18:50	12/01/20 15:21	1
M2-4:2 FTS	135		25 - 150	11/30/20 18:50	12/01/20 15:21	1
M2-6:2 FTS	89		25 - 150	11/30/20 18:50	12/01/20 15:21	1
M2-8:2 FTS	158	*5	25 - 150	11/30/20 18:50	12/01/20 15:21	1
13C3 HFPO-DA	107		25 - 150	11/30/20 18:50	12/01/20 15:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	66		47	23	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluoropentanoic acid (PFPeA)	190		19	4.6	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorohexanoic acid (PFHxA)	270		19	5.5	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluoroheptanoic acid (PFHpA)	110		19	2.4	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorooctanoic acid (PFOA)	2100		19	8.1	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorononanoic acid (PFNA)	73		19	2.6	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorodecanoic acid (PFDA)	5.4	J	19	2.9	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluoroundecanoic acid (PFUnA)	<19		19	10	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorododecanoic acid (PFDoA)	<19		19	5.2	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorotridecanoic acid (PFTriA)	<19		19	12	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorotetradecanoic acid (PFTeA)	<19		19	6.9	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<19		19	8.4	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluoro-n-octadecanoic acid (PFODA)	<19		19	8.9	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorobutanesulfonic acid (PFBS)	5.3	J	19	1.9	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluoropentanesulfonic acid (PFPeS)	4.6	J	19	2.8	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorohexanesulfonic acid (PFHxS)	52		19	5.4	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluoroheptanesulfonic Acid (PFHpS)	4.0	J	19	1.8	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorooctanesulfonic acid (PFOS)	170		19	5.1	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorononanesulfonic acid (PFNS)	<19		19	3.5	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorodecanesulfonic acid (PFDS)	<19		19	3.0	ng/L		11/30/20 18:50	12/02/20 13:52	10
Perfluorododecanesulfonic acid (PFDoS)	<19		19	9.2	ng/L		11/30/20 18:50	12/02/20 13:52	10

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: SW-L06-11202020**

**Lab Sample ID: 320-67100-2**

Date Collected: 11/20/20 10:50

Matrix: Water

Date Received: 11/21/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanesulfonamide (FOSA)</b>	<b>28</b>		19	9.3	ng/L		11/30/20 18:50	12/02/20 13:52	10
NEtFOSA	<19		19	8.3	ng/L		11/30/20 18:50	12/02/20 13:52	10
NMeFOSA	<19		19	4.1	ng/L		11/30/20 18:50	12/02/20 13:52	10
NMeFOSAA	<47		47	11	ng/L		11/30/20 18:50	12/02/20 13:52	10
NEtFOSAA	<47		47	12	ng/L		11/30/20 18:50	12/02/20 13:52	10
NMeFOSE	<38		38	13	ng/L		11/30/20 18:50	12/02/20 13:52	10
NEtFOSE	<19		19	8.1	ng/L		11/30/20 18:50	12/02/20 13:52	10
<b>4:2 FTS</b>	<b>24</b>		19	2.3	ng/L		11/30/20 18:50	12/02/20 13:52	10
<b>6:2 FTS</b>	<b>1400</b>		47	24	ng/L		11/30/20 18:50	12/02/20 13:52	10
<b>8:2 FTS</b>	<b>170</b>		19	4.4	ng/L		11/30/20 18:50	12/02/20 13:52	10
10:2 FTS	<19		19	6.4	ng/L		11/30/20 18:50	12/02/20 13:52	10
DONA	<19		19	3.8	ng/L		11/30/20 18:50	12/02/20 13:52	10
HFPO-DA (GenX)	<38		38	14	ng/L		11/30/20 18:50	12/02/20 13:52	10
F-53B Major	<19		19	2.3	ng/L		11/30/20 18:50	12/02/20 13:52	10
F-53B Minor	<19		19	3.0	ng/L		11/30/20 18:50	12/02/20 13:52	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	82		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C5 PFPeA	90		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C2 PFHxA	88		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C4 PFHpA	91		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C4 PFOA	94		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C5 PFNA	95		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C2 PFDA	85		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C2 PFUnA	79		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C2 PFDoA	62		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C2 PFTeDA	52		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C2 PFHxDA	54		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C3 PFBS	88		25 - 150	11/30/20 18:50	12/02/20 13:52	10
18O2 PFHxS	87		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C4 PFOS	83		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C8 FOSA	82		10 - 150	11/30/20 18:50	12/02/20 13:52	10
d3-NMeFOSAA	57		25 - 150	11/30/20 18:50	12/02/20 13:52	10
d5-NEtFOSAA	58		25 - 150	11/30/20 18:50	12/02/20 13:52	10
d-N-MeFOSA-M	40		10 - 150	11/30/20 18:50	12/02/20 13:52	10
d-N-EtFOSA-M	31		10 - 150	11/30/20 18:50	12/02/20 13:52	10
d7-N-MeFOSE-M	32		10 - 150	11/30/20 18:50	12/02/20 13:52	10
d9-N-EtFOSE-M	30		10 - 150	11/30/20 18:50	12/02/20 13:52	10
M2-4:2 FTS	76		25 - 150	11/30/20 18:50	12/02/20 13:52	10
M2-6:2 FTS	74		25 - 150	11/30/20 18:50	12/02/20 13:52	10
M2-8:2 FTS	71		25 - 150	11/30/20 18:50	12/02/20 13:52	10
13C3 HFPO-DA	88		25 - 150	11/30/20 18:50	12/02/20 13:52	10

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids</b>	<b>22</b>		5.0	1.9	mg/L			11/27/20 13:03	1

Eurofins TestAmerica, Sacramento



# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: DUP-01-11-20-2020**

**Lab Sample ID: 320-67100-3**

Date Collected: 11/20/20 00:00

Matrix: Water

Date Received: 11/21/20 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	31		4.7	2.3	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluoropentanoic acid (PFPeA)	81		1.9	0.46	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorohexanoic acid (PFHxA)	100		1.9	0.55	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluoroheptanoic acid (PFHpA)	40		1.9	0.24	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorooctanoic acid (PFOA)	720	E	1.9	0.80	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorononanoic acid (PFNA)	23		1.9	0.26	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorodecanoic acid (PFDA)	2.2		1.9	0.29	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.84	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.89	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorobutanesulfonic acid (PFBS)	1.9		1.9	0.19	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluoropentanesulfonic acid (PFPeS)	1.6	J	1.9	0.28	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorohexanesulfonic acid (PFHxS)	19		1.9	0.54	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.2	J	1.9	0.18	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorooctanesulfonic acid (PFOS)	53		1.9	0.51	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.92	ng/L		11/30/20 18:50	12/01/20 15:30	1
Perfluorooctanesulfonamide (FOSA)	8.3		1.9	0.93	ng/L		11/30/20 18:50	12/01/20 15:30	1
NEtFOSA	<1.9		1.9	0.82	ng/L		11/30/20 18:50	12/01/20 15:30	1
NMeFOSA	<1.9		1.9	0.41	ng/L		11/30/20 18:50	12/01/20 15:30	1
NMeFOSAA	<4.7		4.7	1.1	ng/L		11/30/20 18:50	12/01/20 15:30	1
NEtFOSAA	2.1	J	4.7	1.2	ng/L		11/30/20 18:50	12/01/20 15:30	1
NMeFOSE	<3.8		3.8	1.3	ng/L		11/30/20 18:50	12/01/20 15:30	1
NEtFOSE	<1.9		1.9	0.80	ng/L		11/30/20 18:50	12/01/20 15:30	1
4:2 FTS	8.4		1.9	0.23	ng/L		11/30/20 18:50	12/01/20 15:30	1
6:2 FTS	480	E	4.7	2.4	ng/L		11/30/20 18:50	12/01/20 15:30	1
8:2 FTS	69		1.9	0.43	ng/L		11/30/20 18:50	12/01/20 15:30	1
10:2 FTS	<1.9		1.9	0.63	ng/L		11/30/20 18:50	12/01/20 15:30	1
DONA	<1.9		1.9	0.38	ng/L		11/30/20 18:50	12/01/20 15:30	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		11/30/20 18:50	12/01/20 15:30	1
F-53B Major	<1.9		1.9	0.23	ng/L		11/30/20 18:50	12/01/20 15:30	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/30/20 18:50	12/01/20 15:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	75		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C5 PFPeA	90		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C2 PFHxA	107		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C4 PFHpA	113		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C4 PFOA	106		25 - 150	11/30/20 18:50	12/01/20 15:30	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: DUP-01-11-20-2020**

**Lab Sample ID: 320-67100-3**

Date Collected: 11/20/20 00:00

Matrix: Water

Date Received: 11/21/20 10:00

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	112		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C2 PFDA	105		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C2 PFUnA	110		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C2 PFDoA	93		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C2 PFTeDA	76		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C2 PFHxDA	52		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C3 PFBS	103		25 - 150	11/30/20 18:50	12/01/20 15:30	1
18O2 PFHxS	104		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C4 PFOS	105		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C8 FOSA	107		10 - 150	11/30/20 18:50	12/01/20 15:30	1
d3-NMeFOSAA	78		25 - 150	11/30/20 18:50	12/01/20 15:30	1
d5-NEtFOSAA	84		25 - 150	11/30/20 18:50	12/01/20 15:30	1
d-N-MeFOSA-M	69		10 - 150	11/30/20 18:50	12/01/20 15:30	1
d-N-EtFOSA-M	53		10 - 150	11/30/20 18:50	12/01/20 15:30	1
d7-N-MeFOSE-M	43		10 - 150	11/30/20 18:50	12/01/20 15:30	1
d9-N-EtFOSE-M	39		10 - 150	11/30/20 18:50	12/01/20 15:30	1
M2-4:2 FTS	135		25 - 150	11/30/20 18:50	12/01/20 15:30	1
M2-6:2 FTS	112		25 - 150	11/30/20 18:50	12/01/20 15:30	1
M2-8:2 FTS	136		25 - 150	11/30/20 18:50	12/01/20 15:30	1
13C3 HFPO-DA	105		25 - 150	11/30/20 18:50	12/01/20 15:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	31	J	47	23	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluoropentanoic acid (PFPeA)	77		19	4.6	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorohexanoic acid (PFHxA)	110		19	5.5	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluoroheptanoic acid (PFHpA)	42		19	2.4	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorooctanoic acid (PFOA)	740		19	8.0	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorononanoic acid (PFNA)	25		19	2.6	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorodecanoic acid (PFDA)	<19		19	2.9	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluoroundecanoic acid (PFUnA)	<19		19	10	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorododecanoic acid (PFDoA)	<19		19	5.2	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorotridecanoic acid (PFTriA)	<19		19	12	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorotetradecanoic acid (PFTeA)	<19		19	6.9	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<19		19	8.4	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluoro-n-octadecanoic acid (PFODA)	<19		19	8.9	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorobutanesulfonic acid (PFBS)	2.0	J	19	1.9	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluoropentanesulfonic acid (PFPeS)	<19		19	2.8	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorohexanesulfonic acid (PFHxS)	19		19	5.4	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluoroheptanesulfonic Acid (PFHpS)	<19		19	1.8	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorooctanesulfonic acid (PFOS)	54		19	5.1	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorononanesulfonic acid (PFNS)	<19		19	3.5	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorodecanesulfonic acid (PFDS)	<19		19	3.0	ng/L		11/30/20 18:50	12/02/20 14:01	10
Perfluorododecanesulfonic acid (PFDoS)	<19		19	9.2	ng/L		11/30/20 18:50	12/02/20 14:01	10

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: DUP-01-11-20-2020**

**Lab Sample ID: 320-67100-3**

**Date Collected: 11/20/20 00:00**

**Matrix: Water**

**Date Received: 11/21/20 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonamide (FOSA)	<19		19	9.3	ng/L		11/30/20 18:50	12/02/20 14:01	10
NEtFOSA	<19		19	8.2	ng/L		11/30/20 18:50	12/02/20 14:01	10
NMeFOSA	<19		19	4.1	ng/L		11/30/20 18:50	12/02/20 14:01	10
NMeFOSAA	<47		47	11	ng/L		11/30/20 18:50	12/02/20 14:01	10
NEtFOSAA	<47		47	12	ng/L		11/30/20 18:50	12/02/20 14:01	10
NMeFOSE	<38		38	13	ng/L		11/30/20 18:50	12/02/20 14:01	10
NEtFOSE	<19		19	8.0	ng/L		11/30/20 18:50	12/02/20 14:01	10
<b>4:2 FTS</b>	<b>8.8</b>	<b>J</b>	19	2.3	ng/L		11/30/20 18:50	12/02/20 14:01	10
<b>6:2 FTS</b>	<b>510</b>		47	24	ng/L		11/30/20 18:50	12/02/20 14:01	10
<b>8:2 FTS</b>	<b>69</b>		19	4.3	ng/L		11/30/20 18:50	12/02/20 14:01	10
10:2 FTS	<19		19	6.3	ng/L		11/30/20 18:50	12/02/20 14:01	10
DONA	<19		19	3.8	ng/L		11/30/20 18:50	12/02/20 14:01	10
HFPO-DA (GenX)	<38		38	14	ng/L		11/30/20 18:50	12/02/20 14:01	10
F-53B Major	<19		19	2.3	ng/L		11/30/20 18:50	12/02/20 14:01	10
F-53B Minor	<19		19	3.0	ng/L		11/30/20 18:50	12/02/20 14:01	10
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	94		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C5 PFPeA	101		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C2 PFHxA	96		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C4 PFHpA	99		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C4 PFOA	107		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C5 PFNA	98		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C2 PFDA	93		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C2 PFUnA	89		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C2 PFDoA	84		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C2 PFTeDA	70		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C2 PFHxDA	47		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C3 PFBS	101		25 - 150				11/30/20 18:50	12/02/20 14:01	10
18O2 PFHxS	101		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C4 PFOS	100		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C8 FOSA	95		10 - 150				11/30/20 18:50	12/02/20 14:01	10
d3-NMeFOSAA	70		25 - 150				11/30/20 18:50	12/02/20 14:01	10
d5-NEtFOSAA	72		25 - 150				11/30/20 18:50	12/02/20 14:01	10
d-N-MeFOSA-M	65		10 - 150				11/30/20 18:50	12/02/20 14:01	10
d-N-EtFOSA-M	48		10 - 150				11/30/20 18:50	12/02/20 14:01	10
d7-N-MeFOSE-M	40		10 - 150				11/30/20 18:50	12/02/20 14:01	10
d9-N-EtFOSE-M	31		10 - 150				11/30/20 18:50	12/02/20 14:01	10
M2-4:2 FTS	88		25 - 150				11/30/20 18:50	12/02/20 14:01	10
M2-6:2 FTS	82		25 - 150				11/30/20 18:50	12/02/20 14:01	10
M2-8:2 FTS	80		25 - 150				11/30/20 18:50	12/02/20 14:01	10
13C3 HFPO-DA	98		25 - 150				11/30/20 18:50	12/02/20 14:01	10

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Suspended Solids</b>	<b>5.5</b>		5.0	1.9	mg/L			11/26/20 12:48	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: Field blank-11-20-2020**

**Lab Sample ID: 320-67100-4**

**Date Collected: 11/20/20 11:00**

**Matrix: Water**

**Date Received: 11/21/20 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.7		4.7	2.2	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluoropentanoic acid (PFPeA)	<1.9		1.9	0.46	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorohexanoic acid (PFHxA)	<1.9		1.9	0.54	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluoroheptanoic acid (PFHpA)	<1.9		1.9	0.23	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorooctanoic acid (PFOA)	<1.9		1.9	0.79	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorononanoic acid (PFNA)	<1.9		1.9	0.25	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.51	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.28	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9		1.9	0.53	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9	0.50	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		11/30/20 18:50	12/01/20 15:39	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.92	ng/L		11/30/20 18:50	12/01/20 15:39	1
NEtFOSA	<1.9		1.9	0.81	ng/L		11/30/20 18:50	12/01/20 15:39	1
NMeFOSA	<1.9		1.9	0.40	ng/L		11/30/20 18:50	12/01/20 15:39	1
NMeFOSAA	<4.7		4.7	1.1	ng/L		11/30/20 18:50	12/01/20 15:39	1
NEtFOSAA	<4.7		4.7	1.2	ng/L		11/30/20 18:50	12/01/20 15:39	1
NMeFOSE	<3.7		3.7	1.3	ng/L		11/30/20 18:50	12/01/20 15:39	1
NEtFOSE	<1.9		1.9	0.79	ng/L		11/30/20 18:50	12/01/20 15:39	1
4:2 FTS	<1.9		1.9	0.22	ng/L		11/30/20 18:50	12/01/20 15:39	1
6:2 FTS	<4.7		4.7	2.3	ng/L		11/30/20 18:50	12/01/20 15:39	1
8:2 FTS	<1.9		1.9	0.43	ng/L		11/30/20 18:50	12/01/20 15:39	1
10:2 FTS	<1.9		1.9	0.63	ng/L		11/30/20 18:50	12/01/20 15:39	1
DONA	<1.9		1.9	0.37	ng/L		11/30/20 18:50	12/01/20 15:39	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		11/30/20 18:50	12/01/20 15:39	1
F-53B Major	<1.9		1.9	0.22	ng/L		11/30/20 18:50	12/01/20 15:39	1
F-53B Minor	<1.9		1.9	0.30	ng/L		11/30/20 18:50	12/01/20 15:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C5 PFPeA	103		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C2 PFHxA	102		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C4 PFHpA	102		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C4 PFOA	111		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C5 PFNA	109		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C2 PFDA	101		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C2 PFUnA	102		25 - 150	11/30/20 18:50	12/01/20 15:39	1

Eurofins TestAmerica, Sacramento

# Client Sample Results

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

Job ID: 320-67100-1

**Client Sample ID: Field blank-11-20-2020**

**Lab Sample ID: 320-67100-4**

**Date Collected: 11/20/20 11:00**

**Matrix: Water**

**Date Received: 11/21/20 10:00**

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C2 PFDoA	96		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C2 PFTeDA	95		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C2 PFHxDA	100		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C3 PFBS	100		25 - 150	11/30/20 18:50	12/01/20 15:39	1
18O2 PFHxS	100		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C4 PFOS	98		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C8 FOSA	97		10 - 150	11/30/20 18:50	12/01/20 15:39	1
d3-NMeFOSAA	88		25 - 150	11/30/20 18:50	12/01/20 15:39	1
d5-NEtFOSAA	84		25 - 150	11/30/20 18:50	12/01/20 15:39	1
d-N-MeFOSA-M	72		10 - 150	11/30/20 18:50	12/01/20 15:39	1
d-N-EtFOSA-M	52		10 - 150	11/30/20 18:50	12/01/20 15:39	1
d7-N-MeFOSE-M	42		10 - 150	11/30/20 18:50	12/01/20 15:39	1
d9-N-EtFOSE-M	30		10 - 150	11/30/20 18:50	12/01/20 15:39	1
M2-4:2 FTS	108		25 - 150	11/30/20 18:50	12/01/20 15:39	1
M2-6:2 FTS	122		25 - 150	11/30/20 18:50	12/01/20 15:39	1
M2-8:2 FTS	119		25 - 150	11/30/20 18:50	12/01/20 15:39	1
13C3 HFPO-DA	100		25 - 150	11/30/20 18:50	12/01/20 15:39	1

# Isotope Dilution Summary

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

Job ID: 320-67100-1

## 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)
320-67100-1	SW-39	83	102	123	126	116	130	117	108
320-67100-1 - DL	SW-39	106	111	113	114	120	116	111	103
320-67100-2	SW-L06-11202020	64	84	104	113	96	117	110	99
320-67100-2 - DL	SW-L06-11202020	82	90	88	91	94	95	85	79
320-67100-3	DUP-01-11-20-2020	75	90	107	113	106	112	105	110
320-67100-3 - DL	DUP-01-11-20-2020	94	101	96	99	107	98	93	89
320-67100-4	Field blank-11-20-2020	98	103	102	102	111	109	101	102
LCS 320-436978/2-A	Lab Control Sample	92	98	95	98	105	100	103	96
MB 320-436978/1-A	Method Blank	96	101	97	100	104	103	100	84

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)
320-67100-1	SW-39	100	87	71	112	116	117	122	89
320-67100-1 - DL	SW-39	86	68	69	108	111	106	107	71
320-67100-2	SW-L06-11202020	76	70	74	107	109	113	110	83
320-67100-2 - DL	SW-L06-11202020	62	52	54	88	87	83	82	57
320-67100-3	DUP-01-11-20-2020	93	76	52	103	104	105	107	78
320-67100-3 - DL	DUP-01-11-20-2020	84	70	47	101	101	100	95	70
320-67100-4	Field blank-11-20-2020	96	95	100	100	100	98	97	88
LCS 320-436978/2-A	Lab Control Sample	102	92	96	100	100	99	96	87
MB 320-436978/1-A	Method Blank	64	93	97	101	101	101	90	73

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (10-150)	dEtFOSA (10-150)	NMFM (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-67100-1	SW-39	90	69	50	47	34	157 *5	122	159 *5
320-67100-1 - DL	SW-39	80	64	45	41	33	94	97	85
320-67100-2	SW-L06-11202020	84	53	42	43	39	135	89	158 *5
320-67100-2 - DL	SW-L06-11202020	58	40	31	32	30	76	74	71
320-67100-3	DUP-01-11-20-2020	84	69	53	43	39	135	112	136
320-67100-3 - DL	DUP-01-11-20-2020	72	65	48	40	31	88	82	80
320-67100-4	Field blank-11-20-2020	84	72	52	42	30	108	122	119
LCS 320-436978/2-A	Lab Control Sample	87	84	80	54	45	106	113	108
MB 320-436978/1-A	Method Blank	66	66	61	60	53	102	117	147

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-67100-1	SW-39	117
320-67100-1 - DL	SW-39	110
320-67100-2	SW-L06-11202020	107
320-67100-2 - DL	SW-L06-11202020	88
320-67100-3	DUP-01-11-20-2020	105
320-67100-3 - DL	DUP-01-11-20-2020	98
320-67100-4	Field blank-11-20-2020	100
LCS 320-436978/2-A	Lab Control Sample	95
MB 320-436978/1-A	Method Blank	96

#### Surrogate Legend

PFBA = 13C4 PFBA

PFPeA = 13C5 PFPeA

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# Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Project/Site: Marinette 30062361.00001

Job ID: 320-67100-1

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

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# QC Sample Results

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

Job ID: 320-67100-1

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

**Lab Sample ID: MB 320-436978/1-A**  
**Matrix: Water**  
**Analysis Batch: 437176**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 436978**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		11/30/20 18:50	12/01/20 12:54	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		11/30/20 18:50	12/01/20 12:54	1
NEtFOSA	<2.0		2.0	0.87	ng/L		11/30/20 18:50	12/01/20 12:54	1
NMeFOSA	<2.0		2.0	0.43	ng/L		11/30/20 18:50	12/01/20 12:54	1
NMeFOSAA	<5.0		5.0	1.2	ng/L		11/30/20 18:50	12/01/20 12:54	1
NEtFOSAA	<5.0		5.0	1.3	ng/L		11/30/20 18:50	12/01/20 12:54	1
NMeFOSE	<4.0		4.0	1.4	ng/L		11/30/20 18:50	12/01/20 12:54	1
NEtFOSE	<2.0		2.0	0.85	ng/L		11/30/20 18:50	12/01/20 12:54	1
4:2 FTS	<2.0		2.0	0.24	ng/L		11/30/20 18:50	12/01/20 12:54	1
6:2 FTS	<5.0		5.0	2.5	ng/L		11/30/20 18:50	12/01/20 12:54	1
8:2 FTS	<2.0		2.0	0.46	ng/L		11/30/20 18:50	12/01/20 12:54	1
10:2 FTS	<2.0		2.0	0.67	ng/L		11/30/20 18:50	12/01/20 12:54	1
DONA	<2.0		2.0	0.40	ng/L		11/30/20 18:50	12/01/20 12:54	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		11/30/20 18:50	12/01/20 12:54	1
F-53B Major	<2.0		2.0	0.24	ng/L		11/30/20 18:50	12/01/20 12:54	1
F-53B Minor	<2.0		2.0	0.32	ng/L		11/30/20 18:50	12/01/20 12:54	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	96		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C5 PFPeA	101		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C2 PFHxA	97		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C4 PFHpA	100		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C4 PFOA	104		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C5 PFNA	103		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C2 PFDA	100		25 - 150	11/30/20 18:50	12/01/20 12:54	1

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# QC Sample Results

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

Job ID: 320-67100-1

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

**Lab Sample ID: MB 320-436978/1-A**  
**Matrix: Water**  
**Analysis Batch: 437176**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 436978**

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C2 PFUnA	84		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C2 PFDoA	64		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C2 PFTeDA	93		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C2 PFHxDA	97		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C3 PFBS	101		25 - 150	11/30/20 18:50	12/01/20 12:54	1
18O2 PFHxS	101		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C4 PFOS	101		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C8 FOSA	90		10 - 150	11/30/20 18:50	12/01/20 12:54	1
d3-NMeFOSAA	73		25 - 150	11/30/20 18:50	12/01/20 12:54	1
d5-NEtFOSAA	66		25 - 150	11/30/20 18:50	12/01/20 12:54	1
d-N-MeFOSA-M	66		10 - 150	11/30/20 18:50	12/01/20 12:54	1
d-N-EtFOSA-M	61		10 - 150	11/30/20 18:50	12/01/20 12:54	1
d7-N-MeFOSE-M	60		10 - 150	11/30/20 18:50	12/01/20 12:54	1
d9-N-EtFOSE-M	53		10 - 150	11/30/20 18:50	12/01/20 12:54	1
M2-4:2 FTS	102		25 - 150	11/30/20 18:50	12/01/20 12:54	1
M2-6:2 FTS	117		25 - 150	11/30/20 18:50	12/01/20 12:54	1
M2-8:2 FTS	147		25 - 150	11/30/20 18:50	12/01/20 12:54	1
13C3 HFPO-DA	96		25 - 150	11/30/20 18:50	12/01/20 12:54	1

**Lab Sample ID: LCS 320-436978/2-A**  
**Matrix: Water**  
**Analysis Batch: 437176**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 436978**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	43.7		ng/L		109	60 - 135
Perfluoropentanoic acid (PFPeA)	40.0	37.9		ng/L		95	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	41.2		ng/L		103	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	40.7		ng/L		102	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	37.2		ng/L		93	60 - 135
Perfluorononanoic acid (PFNA)	40.0	43.1		ng/L		108	60 - 135
Perfluorodecanoic acid (PFDA)	40.0	42.3		ng/L		106	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	45.7		ng/L		114	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	40.1		ng/L		100	60 - 135
Perfluorotridecanoic acid (PFTriA)	40.0	43.6		ng/L		109	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	42.8		ng/L		107	60 - 135
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.0		ng/L		100	60 - 135
Perfluoro-n-octadecanoic acid (PFODA)	40.0	42.4		ng/L		106	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.4	35.2		ng/L		100	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.5	38.8		ng/L		103	60 - 135
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.4		ng/L		97	60 - 135
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.7		ng/L		104	60 - 135

Eurofins TestAmerica, Sacramento

# QC Sample Results

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

Job ID: 320-67100-1

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

**Lab Sample ID: LCS 320-436978/2-A**  
**Matrix: Water**  
**Analysis Batch: 437176**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 436978**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	37.1	38.0		ng/L		102	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.4	41.1		ng/L		107	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	39.8		ng/L		103	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.7	39.2		ng/L		101	60 - 135
Perfluorooctanesulfonamide (FOSA)	40.0	43.0		ng/L		108	60 - 135
NEtFOSA	40.0	40.8		ng/L		102	60 - 135
NMeFOSA	40.0	39.7		ng/L		99	60 - 135
NMeFOSAA	40.0	41.1		ng/L		103	60 - 135
NEtFOSAA	40.0	42.6		ng/L		106	60 - 135
NMeFOSE	40.0	43.6		ng/L		109	60 - 135
NEtFOSE	40.0	38.9		ng/L		97	60 - 135
4:2 FTS	37.4	36.2		ng/L		97	60 - 135
6:2 FTS	37.9	35.3		ng/L		93	60 - 135
8:2 FTS	38.3	41.3		ng/L		108	60 - 135
10:2 FTS	38.6	47.1		ng/L		122	60 - 135
DONA	37.7	38.8		ng/L		103	60 - 135
HFPO-DA (GenX)	40.0	41.4		ng/L		103	60 - 135
F-53B Major	37.3	37.5		ng/L		101	60 - 135
F-53B Minor	37.7	36.4		ng/L		97	60 - 135

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	92		25 - 150
13C5 PFPeA	98		25 - 150
13C2 PFHxA	95		25 - 150
13C4 PFHpA	98		25 - 150
13C4 PFOA	105		25 - 150
13C5 PFNA	100		25 - 150
13C2 PFDA	103		25 - 150
13C2 PFUnA	96		25 - 150
13C2 PFDoA	102		25 - 150
13C2 PFTeDA	92		25 - 150
13C2 PFHxDA	96		25 - 150
13C3 PFBS	100		25 - 150
18O2 PFHxS	100		25 - 150
13C4 PFOS	99		25 - 150
13C8 FOSA	96		10 - 150
d3-NMeFOSAA	87		25 - 150
d5-NEtFOSAA	87		25 - 150
d-N-MeFOSA-M	84		10 - 150
d-N-EtFOSA-M	80		10 - 150
d7-N-MeFOSE-M	54		10 - 150
d9-N-EtFOSE-M	45		10 - 150
M2-4:2 FTS	106		25 - 150
M2-6:2 FTS	113		25 - 150
M2-8:2 FTS	108		25 - 150

Eurofins TestAmerica, Sacramento

# QC Sample Results

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

Job ID: 320-67100-1

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

Lab Sample ID: LCS 320-436978/2-A  
 Matrix: Water  
 Analysis Batch: 437176

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 436978

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
<sup>13</sup> C3 HFPO-DA	95		25 - 150

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

Lab Sample ID: MB 500-574147/1  
 Matrix: Water  
 Analysis Batch: 574147

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			11/26/20 12:25	1

Lab Sample ID: LCS 500-574147/2  
 Matrix: Water  
 Analysis Batch: 574147

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	177		mg/L		88	80 - 120

Lab Sample ID: MB 500-574250/1  
 Matrix: Water  
 Analysis Batch: 574250

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			11/27/20 12:35	1

Lab Sample ID: LCS 500-574250/2  
 Matrix: Water  
 Analysis Batch: 574250

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	188		mg/L		94	80 - 120

Lab Sample ID: 320-67100-1 DU  
 Matrix: Water  
 Analysis Batch: 574250

Client Sample ID: SW-39  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	6.0		5.00	F5	mg/L		18	5

# QC Association Summary

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

Job ID: 320-67100-1

## LCMS

### Prep Batch: 436978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-67100-1 - DL	SW-39	Total/NA	Water	3535	
320-67100-1	SW-39	Total/NA	Water	3535	
320-67100-2 - DL	SW-L06-11202020	Total/NA	Water	3535	
320-67100-2	SW-L06-11202020	Total/NA	Water	3535	
320-67100-3 - DL	DUP-01-11-20-2020	Total/NA	Water	3535	
320-67100-3	DUP-01-11-20-2020	Total/NA	Water	3535	
320-67100-4	Field blank-11-20-2020	Total/NA	Water	3535	
MB 320-436978/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-436978/2-A	Lab Control Sample	Total/NA	Water	3535	

### Analysis Batch: 437176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-67100-1	SW-39	Total/NA	Water	537 (modified)	436978
320-67100-2	SW-L06-11202020	Total/NA	Water	537 (modified)	436978
320-67100-3	DUP-01-11-20-2020	Total/NA	Water	537 (modified)	436978
320-67100-4	Field blank-11-20-2020	Total/NA	Water	537 (modified)	436978
MB 320-436978/1-A	Method Blank	Total/NA	Water	537 (modified)	436978
LCS 320-436978/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	436978

### Analysis Batch: 437534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-67100-1 - DL	SW-39	Total/NA	Water	537 (modified)	436978
320-67100-2 - DL	SW-L06-11202020	Total/NA	Water	537 (modified)	436978
320-67100-3 - DL	DUP-01-11-20-2020	Total/NA	Water	537 (modified)	436978

## General Chemistry

### Analysis Batch: 574147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-67100-3	DUP-01-11-20-2020	Total/NA	Water	SM 2540D	
MB 500-574147/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-574147/2	Lab Control Sample	Total/NA	Water	SM 2540D	

### Analysis Batch: 574250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-67100-1	SW-39	Total/NA	Water	SM 2540D	
320-67100-2	SW-L06-11202020	Total/NA	Water	SM 2540D	
MB 500-574250/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-574250/2	Lab Control Sample	Total/NA	Water	SM 2540D	
320-67100-1 DU	SW-39	Total/NA	Water	SM 2540D	

# Lab Chronicle

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

Job ID: 320-67100-1

**Client Sample ID: SW-39**

**Lab Sample ID: 320-67100-1**

Date Collected: 11/20/20 10:40

Matrix: Water

Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.8 mL	10.00 mL	436978	11/30/20 18:50	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			437176	12/01/20 15:11	RS1	TAL SAC
Total/NA	Prep	3535	DL		254.8 mL	10.00 mL	436978	11/30/20 18:50	VP	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			437534	12/02/20 13:43	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	200 mL	200 mL	574250		SMO	TAL CHI
								(Start) 11/27/20 13:01		
								(End) 11/27/20 13:02		

**Client Sample ID: SW-L06-11202020**

**Lab Sample ID: 320-67100-2**

Date Collected: 11/20/20 10:50

Matrix: Water

Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			263.6 mL	10.00 mL	436978	11/30/20 18:50	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			437176	12/01/20 15:21	RS1	TAL SAC
Total/NA	Prep	3535	DL		263.6 mL	10.00 mL	436978	11/30/20 18:50	VP	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			437534	12/02/20 13:52	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	200 mL	200 mL	574250		SMO	TAL CHI
								(Start) 11/27/20 13:03		
								(End) 11/27/20 13:05		

**Client Sample ID: DUP-01-11-20-2020**

**Lab Sample ID: 320-67100-3**

Date Collected: 11/20/20 00:00

Matrix: Water

Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			264.7 mL	10.00 mL	436978	11/30/20 18:50	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			437176	12/01/20 15:30	RS1	TAL SAC
Total/NA	Prep	3535	DL		264.7 mL	10.00 mL	436978	11/30/20 18:50	VP	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			437534	12/02/20 14:01	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	200 mL	200 mL	574147		SMO	TAL CHI
								(Start) 11/26/20 12:48		
								(End) 11/26/20 12:49		

**Client Sample ID: Field blank-11-20-2020**

**Lab Sample ID: 320-67100-4**

Date Collected: 11/20/20 11:00

Matrix: Water

Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			267.7 mL	10.00 mL	436978	11/30/20 18:50	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			437176	12/01/20 15:39	RS1	TAL SAC

**Laboratory References:**

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

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

# Accreditation/Certification Summary

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

Job ID: 320-67100-1

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## Laboratory: Eurofins TestAmerica, Sacramento

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

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

## Laboratory: Eurofins TestAmerica, Chicago

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

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

# Method Summary

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

Job ID: 320-67100-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

#### Protocol References:

EPA = US Environmental Protection Agency

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

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

#### Laboratory References:

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

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

# Sample Summary

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

Job ID: 320-67100-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-67100-1	SW-39	Water	11/20/20 10:40	11/21/20 10:00	
320-67100-2	SW-L06-11202020	Water	11/20/20 10:50	11/21/20 10:00	
320-67100-3	DUP-01-11-20-2020	Water	11/20/20 00:00	11/21/20 10:00	
320-67100-4	Field blank-11-20-2020	Water	11/20/20 11:00	11/21/20 10:00	

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## Fredrick, Sandie

---

**From:** Rutkowski, Lisa <Lisa.Rutkowski@arcadis.com>  
**Sent:** Monday, November 23, 2020 12:41 PM  
**To:** Fredrick, Sandie  
**Cc:** Wheeler, Allison  
**Subject:** RE: Eurofins TestAmerica Sample Login Confirmation files from 320-67100 Marinette, WI 30015292.00001

EXTERNAL EMAIL\*

Hi Sandie,

Apologies, this should be Arcadis PN 30062361.00001, lab PN 50017363.

Thanks!  
Lisa

---

**From:** Sandie Fredrick <sandra.fredrick@eurofinset.com>  
**Sent:** Monday, November 23, 2020 12:36 PM  
**To:** Wheeler, Allison <Allison.Wheeler@arcadis.com>; Rutkowski, Lisa <Lisa.Rutkowski@arcadis.com>  
**Subject:** Eurofins TestAmerica Sample Login Confirmation files from 320-67100 Marinette, WI 30015292.00001

Hello Ladies,

Attached, please find the Sample Confirmation files for job 320-67100; Marinette, WI 30015292.00001

Please feel free to contact me if you have any questions.

Thank you.

**Sandie Fredrick**  
Project Manager

TestAmerica Laboratories, Inc.  
Phone: 920-261-1660

E-mail: [sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)  
[www.eurofinsus.com/env](http://www.eurofinsus.com/env)



Reference: [320-299149]

Please let us know if we met your expectations by rating the service you received from Eurofins TestAmerica on this project by visiting our website at: [Project Feedback](#)

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Regulatory  
Project Manager

Ref:  
Dep:

Chg: Date: 12Nov20  
Mgt: 25.00 LBS  
Master: 7125 4943 7110  
TRCK: 7125 4943 7153  
SYS: PRIORITY OVERNIGHT

SHIPPING:  
SPECIAL:  
HANDLING:  
TOTAL: 0.00



Client Contact  
Arcadis U.S., Inc.  
126 North Jefferson Street, Suite 400  
Milwaukee, WI 53202  
Project Name: Marinette, WI  
Site: Marinette, WI  
P O # 30015292.00001

Analysis Turnaround Time  
 CALENDAR DAYS  
 WORKING DAYS  
 TAT if different from Below  
 1 day  
 2 days  
 1 week  
 2 weeks

For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Lab Project Number: 50016517

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	EPA 537.1 Drinking Water (14 Compounds)	PIC 104-PHAs Extracted Lf (C)	DS-2640D
SW-39	11/20/20	10:40	G	W	3	N	N	X	X	X
SW-L06-112020	10:50	G	W	3	X	X	X	X	X	X
DUP-01-11-20-2020	—	G	W	3	X	X	X	X	X	X
Field blank - 11-20-2020	11:00	G	W	2	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other, 7= Trizma Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										

Special Instructions/QC Requirements & Comments:  
 Level 4 QAC. Questions call L. Rutkowski  
 TAT:  
 Custody Seals Intact:  Yes  No  
 Custody Seal No.:  
 Cooler Temp. (°C): Obs'd:  Cor'd:  Therm ID No.:

Relinquished by: Jacob Kaminiger  
 Company: ARCADIS  
 Date/Time: 11-20-20/11:05

Relinquished by: *[Signature]*  
 Company: *[Signature]*  
 Date/Time: 11/20/20 10:00

Relinquished by: *[Signature]*  
 Company: *[Signature]*  
 Date/Time: *[Signature]*

Comments Section if the lab is to dispose of the sample:  
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown   
 Return to Client  Disposal by Lab  Archive for  Months

• PHAs time 10:45 ST 11/21/20 \* PHAs time 10:55 ST 11/21/20

**Eurofins TestAmerica, Sacramento**

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

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s)	COC No	
Client Contact Shipping/Receiving		Phone:	Fredrick, Sandie		320-202158.1	
Company: TestAmerica Laboratories, Inc.		E-Mail:	sandra.fredrick@eurofinset.com	State of Origin:	Page:	
Address: 2417 Bond Street,		Accreditations Required (See note): State - Wisconsin; State Program - Wisconsin			Page 1 of 1	
City: University Park		Due Date Requested: 12/8/2020			Job #: 320-67100-1	
State, Zip: IL, 60484		Analysis Requested			<b>Preservation Codes:</b> A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate              O - AsNaO2 D - Nitric Acid              P - Na2O4S E - NaHSO4                 Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid         T - TSP Dodecahydrate I - Ice                         U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Z - other (specify)	
320-67100 COC		TAT Requested (days):				
PO #:		Field Filtered Sample (Yes or No)				
WO #:		Perform MS/MSD (Yes or No)				
Project Name: Marinette 30062361.00001		Project #: 50017363		254007/TSS		
Site:		SSOW#:		Total Number of containers		
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=comp, G=grab)</b>	<b>Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)</b>	<b>Special Instructions/Note:</b>
				<b>Preservation Code:</b>		
SW-39 (320-67100-1)		11/20/20	10:40 Central		Water	X
SW-L06-11202020 (320-67100-2)		11/20/20	10:50 Central		Water	X
DUP-01-11-20-2020 (320-67100-3)		11/20/20	Central		Water	X
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.						
<b>Possible Hazard Identification</b>				<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>		
Unconfirmed				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:		
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by: <i>Juan L</i>		Date/Time: 11/23/20 - 1630	Company: <i>ET&amp;A</i>	Received by: <i>Shirley Scott</i>		Date/Time: 11/24/20 1115
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>-0.3 → 0.2</i>		



# Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-67100-1

**Login Number: 67100**

**List Source: Eurofins TestAmerica, Sacramento**

**List Number: 1**

**Creator: Oropeza, Salvador**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	969730
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	IDs on containers do not match the COC. Logged in per COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-67100-1

**Login Number: 67100**  
**List Number: 2**  
**Creator: Scott, Sherri L**

**List Source: Eurofins TestAmerica, Chicago**  
**List Creation: 11/24/20 01:59 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	-0.2 SAMPLES NOT FROZEN
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

