

Alyssa Sellwood
Complex Sites Project Manager – Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
101 South Webster Street
Madison, Wisconsin 53703

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Date: February 14, 2023
Our Ref: 30128077
Subject: 2022 Foam Monitoring Interim Action Report
Tyco Fire Technology Center
BRRTS #: 02-38-580694

Dear Ms. Sellwood,

Arcadis U.S., Inc. (Arcadis) has prepared this 2022 Foam Monitoring Interim Action Report on behalf of Tyco Fire Products LP (Tyco) summarizing foam monitoring and removal activities completed in 2022 on waterways (Ditches A, B, C, D, and E) in the City of Marinette, Wisconsin, and the Town of Peshtigo, Wisconsin. All work related to foam collection activities performed in 2022 was completed per the *2021 Foam Monitoring Interim Action Report and Foam Monitoring Work Plan Modifications* (work plan) submitted to the Wisconsin Department of Natural Resources (WDNR) on February 15, 2022.

Site Location and Contact Information

The Tyco Fire Technology Center is located at 2700 Industrial Parkway South in Marinette, Wisconsin (Site), as shown on **Figure 1**. The Site location is also described as:

- **Public Land Survey System Description:** NE ¼ of the NE ¼ of Section 13, Township 30N, Range 23E.
- **County:** Marinette.
- **Coordinates:** Coordinates describing the approximate locations of the Site boundaries are shown in **Figure 1**.

Contact information for the responsible party (Tyco) is listed below:

- **Name:** Denice Nelson - Senior Director, Remediation and Strategy
- **Address:** 5757 N. Green Bay Avenue, Milwaukee, Wisconsin 53209
- **Telephone Number:** 651-280-7259

Field Implementation

Floating booms were deployed on Ditches B, C (Southwest Branch), and D on March 17, 2022 and on Ditches A, C (East Branch), and E on April 5, 2022 after the dissipation of ice at the locations shown in **Figure 2**.

Notifications were made to WDNR, U.S. Army Corps. Of Engineers, the Town of Peshtigo, and the City of Marinette prior to implementing the interim action. Per the work plan, inspections of Ditches A, C, D, and E were conducted once per week and inspections of Ditch B were conducted twice per week. Following reports of foam reported to Tyco by others prior to a routine inspection, Tyco collected the foam as soon as practicable. For any

ditches where foam was observed, daily inspections resumed at that location until foam was not observed for 3 consecutive days. Ditch inspections and foam removal activities concluded on December 5, 2022, and all floating booms were removed from Ditches A-E due to the onset of freezing conditions.

Foam Observations and Removal

No foam accumulation was observed on Ditches A, C, or E during weekly inspections throughout the 2022 monitoring period. Foam was observed and collected 57 times on Ditch B and 1 time on Ditch D. A summary of the daily inspection logs for Ditches A, B, C (East Branch), C (Southwest Branch), D, and E are provided as **Tables 1, 2, 3, 4, 5, and 6**, respectively. Observed foam was collected via manual skimming with a pool skimmer, transferred into sealed, leak-proof 55-gallon drums, and stored at the Tyco Fire Technology Center (FTC) pending disposal, as described in the Waste Characterization and Disposal section below. Per the work plan, the WDNR project manager was notified via email within 2 days of a foam accumulation event.

A cumulative total of approximately 254 gallons of uncollapsed foam were removed from Ditch B and approximately 0.25 gallons of uncollapsed foam were removed from Ditch D throughout the 2022 reporting period. The structure of the collected foam naturally collapsed over time reducing to approximately 10 gallons of liquid.

Foam observations dates, locations, and foam volume removal estimates are shown on **Figure 2**. Photos and descriptions of the observed foam and descriptions of weather conditions are included as **Attachment 1**.

Waste Characterization and Disposal

Per the work plan, all foam was removed from the site within 90 days of collection. Foam was first collected on March 18, 2022 and was containerized in a leak proof 55-gallon drum for storage at the FTC pending transport offsite on June 9, 2022 by Endpoint Solutions Corporation (Endpoint). Foam collected from all monitored ditches was consolidated into a single drum. One analytical sample was collected from the drum on May 17, 2022 and submitted to Eurofins TestAmerica of West Sacramento, California (Eurofins Sacramento) for analysis of per- and polyfluoroalkyl substances (PFAS) by U.S. Environmental Protection Agency (U.S. EPA) Method 537 Modified under standard chain-of-custody procedures. The drum contained approximately 9 gallons of collapsed foam collected between March 18, 2022 and May 17, 2022 at the time of sampling. The drum was sealed following sampling and no additional material was added.

Foam collection starting May 18, 2022 and ending June 3, 2022 (the last time foam was observed and collected) was containerized in a new leak proof 55-gallon drum and stored at the FTC pending transport offsite on August 10, 2022 by Endpoint. Foam collected from all monitored ditches was consolidated into a single drum. One analytical sample was collected from the drum on July 20, 2022 and submitted to Eurofins Sacramento for analysis of PFAS by U.S. EPA Method 537 Modified under standard chain-of-custody procedures. The drum contained approximately 1 gallon of collapsed foam at the time of sampling. The drum was sealed following sampling and no additional material was added.

Both drums were transported to Endpoint's waste transfer facility located in Hartford, Wisconsin, and were consolidated with previously collected foam for more efficient transportation and disposal. All collected foam staged at Endpoint's facility was transported to Waste Management in Arlington, Oregon (WM Arlington), for disposal on June 17, 2022, and November 17, 2022. Spent booms from the 2022 season were transferred to drums and are being stored at the FTC pending disposal. Spent booms from previous seasons were shipped to WM Arlington on November 17, 2022. Transportation documentation for the collected foam and spent booms is included in **Attachment 2**.

Ms. Alyssa Sellwood
WDNR
February 14, 2023

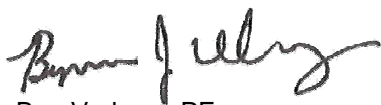
- One sample will be collected from each container and analyzed for PFAS (36 compounds) for waste characterization and disposal purposes.
- Tyco will provide an email to the WDNR Project Manager within 2 business days of a foam accumulation event that includes a photo of the foam and a summary of the date, location, weather conditions, and volume of foam recovered.
- Tyco will submit an Annual Foam Monitoring Interim Action Report, in accordance with Wisconsin Administrative Code Chapter NR 708 by February 15, 2024 for the previous calendar year.

Closing

Tyco has completed the foam monitoring and removal tasks for 2022. Floating booms were removed from Ditches A, B, C, D, and E on December 5, 2022 due to the onset of freezing conditions. In 2023, new booms will be deployed and inspection and foam removal activities will resume as outlined above when allowed by ambient weather conditions.

Please do not hesitate to contact me if there are any questions.

Sincerely,
Arcadis U.S., Inc.



Ben Verburg, PE
Principal Engineer

Email: Ben.Verburg@arcadis.com
Direct Line: 414-277-6231

CC.

Denice Nelson (Tyco)
Scott Potter (Arcadis)

Enclosures:

NR 712.09 Certification

Tables

- 1 Ditch A Inspection Summary
- 2 Ditch B Inspection Summary
- 3 Ditch C (East Branch) Inspection Summary
- 4 Ditch C (Southwest Branch) Inspection Summary
- 5 Ditch D Inspection Summary
- 6 Ditch E Inspection Summary
- 7 Laboratory Analytical Results

Ms. Alyssa Sellwood
WDNR
February 14, 2023

Figures

- 1 Site Location Map
- 2 Boom Deployment and Foam Removal Locations

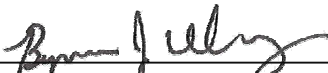
Attachments

- 1 Foam Observation Photo Log
- 2 Transportation and Disposal Documentation
- 3 Laboratory Analytical Reports

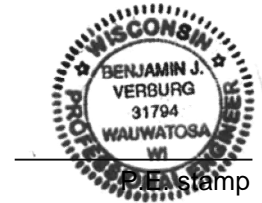
NR 712.09 Certification

NR 712.09 Certification

I, Benjamin J. Verburg, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wisconsin Administrative Code; that this document has been prepared in accordance with the rules of Professional Conduct in ch. A-E 8, Wisconsin Administrative Code; and that all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wisconsin Administrative Code.


Signature, title, and P.E. number

Principal Engineer, 31794



Tables

Table 1
Ditch A Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch A									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/5/2022	0.12	2	North-Northeast	New	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/12/2022	0.05	3	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/18/2022	0.2	6	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/25/2022	0.03	7	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/2/2022	0	5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/10/2022	0.29	4.7	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/26/2022	0.31	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/31/2022	0	6	Southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/6/2022	0.4	3.5	Northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/13/2022	0.01	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/20/2022	0	5	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/29/2022	0.02	2.5	East-northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/5/2022	0	2	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/11/2022	0	6	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/18/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/26/2022	0	7.5	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/2/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/9/2022	0	0	East -south-east	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/15/2022	0	3	North-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/24/2022	0	2	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/29/2022	0	4.3	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/6/2022	0	0	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/13/2022	0	4	West-northwest	--	--	--	--	--	--
9/19/2022	0	3	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/26/2022	0	8.5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/4/2022	0	2	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/10/2022	0.43	5.3	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/17/2022	0.06	10	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/24/2022	0.07	4	South-southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/8/2022	0	4.5	East-Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/15/2022	0	4.3	East	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/21/2022	0	9	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/29/2022	0	3	Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
12/5/2022	0	4	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
Total:								0	

Notes:

Booms were deployed at Ditch A on 4/5/22.
 Booms were removed at Ditch A on 12/5/22 due to the onset of freezing conditions.
 Foam volumes are approximate based on the visual observation at the time of collection
 Bold = Foam Observed

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch B									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
3/17/2022	0	4	East-Southeast	New	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/18/2022	0.07	5	North-Northwest	Good	Downstream	West Bay Shore St. Crossing	Brown, Some Froth	1	--
3/19/2022	0.11	6.7	North-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/20/2022	0	2	North-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/21/2022	0.44	5	North-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/24/2022	0.01	3	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	White, frothy	63	Additional booms deployed
3/25/2022	0.04	7	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	Tan, frothy	70	--
3/26/2022	0	10	North-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	3	--
3/27/2022	0	8.5	North-Northwest	Good	Downstream	West Bay Shore St. Crossing	White, frothy	4	--
3/28/2022	0	7	North-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	2	--
3/29/2022	0.1	7.7	East-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/30/2022	0.86	2	East-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/31/2022	0.26	10	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
4/4/2022	0.36	2	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	3	--
4/5/2022	0.12	2	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	White, frothy	1	--
4/6/2022	0.82	3	Southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
4/7/2022	0	4.7	South	Good	Downstream	West Bay Shore St. Crossing	White, frothy	11	--
4/8/2022	0.01	6.5	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	White, frothy	19	--
4/9/2022	0	4.5	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	2	--
4/10/2022	0	5	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	White, frothy	2	--
4/11/2022	0	10	West	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	2	--
4/12/2022	0.05	3	West-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	7	--
4/13/2022	0.53	4	Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	1	--
4/14/2022	0.13	8	West-Southwest	Good	Downstream	West Bay Shore St. Crossing	White, frothy	2	--
4/15/2022	0	7	West-Southwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	5	--
4/16/2022	0	9	West-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	2	--
4/17/2022	0	4.7	West-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	2	--
4/18/2022	0.2	6	Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	5	--
4/19/2022	0	6	Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	2	--
4/20/2022	0.52	4	North-northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	0.5	--
4/21/2022	0.01	4.5	Southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
4/22/2022	0.26	4	Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	1	Fallen tree removed from stream at West Bay Shore St. Crossing
4/23/2022	0.01	4.5	Southeast	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	1	--
4/24/2022	0	11.5	Southwest	Good	Downstream	West Bay Shore St. Crossing	Brown, Some Froth	0.5	--
4/25/2022	0.03	7	West	Good	Downstream	West Bay Shore St. Crossing	White/tan, frothy	1	--
4/26/2022	0.01	7	West	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	1	--
4/27/2022	0	6	West-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	1	--
4/28/2022	0	6	West-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	0.5	--
4/29/2022	0	3	West-Northwest	Good	Downstream	West Bay Shore St. Crossing	Brown, Some Froth	0.5	--
4/30/2022	0.77	3	West-Southwest	Good	Downstream	West Bay Shore St. Crossing	Brown, Some Froth	0.5	--
5/1/2022	0.01	5	West	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	0.5	--

Notes on Page 4.

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch B									
Weather Conditions				Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
5/2/2022	0	5	West-Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	3	--
5/3/2022	0	6	East-Northeast	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	3	--
5/4/2022	0	4.7	North-Northeast	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	3	--
5/5/2022	0	0	--	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	3	--
5/6/2022	0	7	East-Northeast	Good	Downstream	West Bay Shore St. Crossing	Tan, some froth	1	--
5/7/2022	0	7	Northeast	Good	Downstream	West Bay Shore St. Crossing	Tan, some froth	0.5	--
5/8/2022	0	8	East-Northeast	Good	Downstream	West Bay Shore St. Crossing	Brown, Some Froth	0.5	--
5/9/2022	0	4	East-Northeast	Good	Downstream	West Bay Shore St. Crossing	Tan, some froth	1	--
5/10/2022	0.29	4.7	South	Good	Upstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/11/2022	0	4	East-Northeast	Good	Downstream	West Bay Shore St. Crossing	Brown, Some Froth	0.5	--
5/12/2022	1.06	4	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/13/2022	0	2	South-Southeast	Good	Downstream	West Bay Shore St. Crossing	White, some froth	0.5	--
5/14/2022	0.2	3	South-Southeast	Good	Downstream	West Bay Shore St. Crossing	Tan, frothy	3	--
5/15/2022	0	5	Southwest	Good	Downstream	West Bay Shore St. Crossing	Tan, some froth	1	--
5/16/2022	0	3	South-Southwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	2	--
5/17/2022	0	5	North	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	0.5	--
5/18/2022	0.08	1.7	South-Southwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	1	--
5/19/2022	0.36	4	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/20/2022	0.83	2	South-Southeast	Good	Downstream	West Bay Shore St. Crossing	White, some froth	0.5	--
5/21/2022	0.01	5	Southeast	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	1	--
5/22/2022	0.01	4.5	Northwest	Good	Downstream	West Bay Shore St. Crossing	White/tan, some froth	1	--
5/23/2022	0	3	North-Northwest	Good	Downstream	West Bay Shore St. Crossing	Tan, frothy	2	--
5/24/2022	0	3	Northeast	Good	Downstream	West Bay Shore St. Crossing	Tan, some froth	1	--
5/25/2022	1.2	3	Northeast	Good	Downstream	West Bay Shore St. Crossing	Tan/brown, some froth	1	--
5/26/2022	0.31	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/27/2022	0	4	North-northwest	Good	Downstream	West Bay Shore St. Crossing	White, frothy	2	--
5/28/2022	0.02	2	South-southeast	Good	Downstream	West Bay Shore St. Crossing	Tan, some froth	2	--
5/29/2022	0.03	3	Southeast	Good	Downstream	West Bay Shore St. Crossing	Tan, some froth	2	--
5/30/2022	0	4	South-southeast	Good	Downstream	West Bay Shore St. Crossing	Tan/brown, some froth	1	--
5/31/2022	0	6	Southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/1/2022	0	5	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/2/2022	0	2.5	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/3/2022	0	6	West-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/6/2022	0.4	3.5	Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/8/2022	0.03	0.3	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/13/2022	0.01	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/15/2022	0.1	3	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/17/2022	0	5.5	West-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/20/2022	0	5	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/23/2022	0	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/27/2022	0	7.5	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/29/2022	0.02	2.5	East-northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/1/2022	0	7	North-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/5/2022	0	2	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/8/2022	0.03	4	East-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/11/2022	0	6	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--

Notes on Page 4.

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch B									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
7/13/2022	0.01	4	North-northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/15/2022	0.01	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/18/2022	0	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/20/2022	0.08	8.5	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/22/2022	0	4.7	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/26/2022	0	7.5	West-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/29/2022	0	4.5	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/2/2022	0	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/4/2022	0	7.5	Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/5/2022	0	0	East -south-east	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/9/2022	0	0	East -south-east	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/10/2022	0	3	South-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/11/2022	0	3.7	North-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/15/2022	0	3	North-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/16/2022	0	3.3	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/18/2022	0	1	Southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/24/2022	0	2	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/25/2022	0	0	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/26/2022	0	2	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/29/2022	0	4.3	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/1/2022	0	0	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/2/2022	0	5.7	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/6/2022	0	0	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/8/2022	0	0	East	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/13/2022	0	4	West-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/15/2022	0	0	South-southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/19/2022	0	3	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/21/2022	0	1.7	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/23/2022	0	0	North	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/26/2022	0	8.5	West-Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/28/2022	0	4.5	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/4/2022	0	2	South-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/6/2022	0	3	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/7/2022	0	6.5	West-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/10/2022	0.43	5.3	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/12/2022	0.17	8	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/13/2022	0	2	Southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/17/2022	0.06	10	West-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/20/2022	0	0	South-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/24/2022	0.07	4	South-southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/27/2022	0	0	Southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/28/2022	0	1	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/8/2022	0	4.5	East-Southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/9/2022	0	3.3	South-southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/11/2022	0.05	9.7	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/15/2022	0	4.3	East	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--

Notes on Page 4.

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch B									
Weather Conditions				Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
11/17/2022	0	2.5	South-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/18/2022	0	5	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/21/2022	0	9	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/22/2022	0	0.5	Southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/23/2022	0	0	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/29/2022	0	3	Southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/30/2022	0	6	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
12/2/2022	0	4	South-southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
12/5/2022	0	4	South-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
Total:								254	

Notes:

Daily visual inspections of Ditch B began on 3/17/22

Booms were deployed at Ditch B on 3/17/22.

Booms were removed at Ditch B on 12/5/22 due to the onset of freezing conditions.

Foam volumes are approximate based on the visual observation at the time of collection

Bold = Foam Observed

Table 3
Ditch C (East Branch) Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch C (East Branch)									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/5/2022	0.12	2	North-Northeast	New	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/12/2022	0.05	3	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/18/2022	0.2	6	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/25/2022	0.03	7	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/2/2022	0	5	West-Northwest	No	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/10/2022	0.29	4.7	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/26/2022	0.31	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/31/2022	0	6	Southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/6/2022	0.4	3.5	Northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/13/2022	0.01	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/20/2022	0	5	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/29/2022	0.02	2.5	East-northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/5/2022	0	2	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/11/2022	0	6	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/18/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/26/2022	0	7.5	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/2/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/9/2022	0	0	East-south-east	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/15/2022	0	3	North-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/24/2022	0	2	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/29/2022	0	4.3	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/6/2022	0	0	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/13/2022	0	4	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/19/2022	0	3	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/26/2022	0	8.5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/4/2022	0	2	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/10/2022	0.43	5.3	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/17/2022	0.06	10	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/24/2022	0.07	4	South-southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/8/2022	0	4.5	East-Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/15/2022	0	4.3	East	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/21/2022	0	9	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/29/2022	0	3	Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
12/5/2022	0	4	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
Total:								0	

Notes:

Booms were deployed at Ditch C on 4/5/22.
 Booms were removed at Ditch C on 12/5/22 due to the onset of freezing conditions.
 Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 4
Ditch C (Southwest Branch) Inspection Summary
Tycos Fire Products LP
Marinette, Wisconsin



Ditch C (Southwest Branch)									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/5/2022	0.12	2	North-Northeast	New	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/12/2022	0.05	3	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/18/2022	0.2	6	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/25/2022	0.03	7	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/2/2022	0	5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/10/2022	0.29	4.7	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/26/2022	0.31	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/31/2022	0	6	Southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/6/2022	0.4	3.5	Northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/13/2022	0.01	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/20/2022	0	5	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/29/2022	0.02	2.5	East-northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/5/2022	0	2	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/11/2022	0	6	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/18/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/26/2022	0	7.5	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/2/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/9/2022	0	0	East-south-east	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/15/2022	0	3	North-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/24/2022	0	2	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/29/2022	0	4.3	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/6/2022	0	0	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/13/2022	0	4	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/19/2022	0	3	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/26/2022	0	8.5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/4/2022	0	2	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/10/2022	0.43	5.3	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/17/2022	0.06	10	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/24/2022	0.07	4	South-southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/8/2022	0	4.5	East-Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/15/2022	0	4.3	East	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/21/2022	0	9	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/29/2022	0	3	Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
12/5/2022	0	4	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
Total:								0	

Notes:
Booms were deployed at Ditch C on 4/5/22.
Booms were removed at Ditch C on 12/5/22 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 4
Ditch C (Southwest Branch) Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch C (Southwest Branch)									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/5/2022	0.12	2	North-Northeast	New	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/12/2022	0.05	3	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/18/2022	0.2	6	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/25/2022	0.03	7	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/2/2022	0	5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/10/2022	0.29	4.7	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/26/2022	0.31	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/31/2022	0	6	Southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/6/2022	0.4	3.5	Northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/13/2022	0.01	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/20/2022	0	5	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/29/2022	0.02	2.5	East-northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/5/2022	0	2	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/11/2022	0	6	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/18/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/26/2022	0	7.5	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/2/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/9/2022	0	0	East-south-east	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/15/2022	0	3	North-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/24/2022	0	2	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/29/2022	0	4.3	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/6/2022	0	0	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/13/2022	0	4	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/19/2022	0	3	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/26/2022	0	8.5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/4/2022	0	2	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/10/2022	0.43	5.3	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/17/2022	0.06	10	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/24/2022	0.07	4	South-southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/8/2022	0	4.5	East-Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/15/2022	0	4.3	East	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/21/2022	0	9	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/29/2022	0	3	Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
12/5/2022	0	4	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
Total:								0	

Notes:
Booms were deployed at Ditch C on 4/5/22.
Booms were removed at Ditch C on 12/5/22 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 5
Ditch D Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch D									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
3/17/2022	0	4	East-Southeast	New	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/21/2022	0.44	5	North-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
3/31/2022	0.26	10	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
4/5/2022	0.12	2	North-Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
4/12/2022	0.05	3	West-Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
4/18/2022	0.2	6	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
4/25/2022	0.03	7	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/2/2022	0	5	West-Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/10/2022	0.29	4.7	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/26/2022	0.31	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/31/2022	0	6	Southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/3/2022	0	6	West-northwest	Good	No Noticeable Flow	Shore Dr. Crossing	White, Some Froth	0.25	--
6/4/2022	0	7	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/5/2022	0	5	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/6/2022	0.4	3.5	Northeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/13/2022	0.01	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/20/2022	0	5	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
6/29/2022	0.02	2.5	East-northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/5/2022	0	2	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/11/2022	0	6	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/18/2022	0	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
7/26/2022	0	7.5	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/2/2022	0	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/9/2022	0	0	East -south-east	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/15/2022	0	3	North-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/24/2022	0	2	West	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
8/29/2022	0	4.3	South	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/6/2022	0	0	Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/13/2022	0	4	West-northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/19/2022	0	3	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
9/26/2022	0	8.5	West-Northwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/4/2022	0	2	South-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
10/10/2022	0.43	5.3	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/17/2022	0.06	10	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/24/2022	0.07	4	South-southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/8/2022	0	4.5	East-Southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/15/2022	0	4.3	East	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/21/2022	0	9	West-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
11/29/2022	0	3	Southeast	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
12/5/2022	0	4	South-southwest	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
Total:								0.25	

Notes:
Booms were deployed at Ditch D on 3/17/22.
Booms were removed at Ditch D on 12/5/22 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 6
Ditch E Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin



Ditch E									
Date	Weather Conditions			Inspection Summary					
	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/5/2022	0.12	2	North-Northeast	New	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/12/2022	0.05	3	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/18/2022	0.2	6	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
4/25/2022	0.03	7	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/2/2022	0	5	West-Northwest	No	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/10/2022	0.29	4.7	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
5/26/2022	0.31	0	--	Good	Downstream	No Foam Observed	No Foam Observed	No Foam Collected	--
5/31/2022	0	6	Southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/6/2022	0.4	3.5	Northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/13/2022	0.01	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/20/2022	0	5	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
6/29/2022	0.02	2.5	East-northeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/5/2022	0	2	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/11/2022	0	6	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/18/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
7/26/2022	0	7.5	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/2/2022	0	0	--	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/9/2022	0	0	East -south-east	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/15/2022	0	3	North-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/24/2022	0	2	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
8/29/2022	0	4.3	South	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/6/2022	0	0	Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/13/2022	0	4	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/19/2022	0	3	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
9/26/2022	0	8.5	West-Northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/4/2022	0	2	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/10/2022	0.43	5.3	West	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/17/2022	0.06	10	West-northwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
10/24/2022	0.07	4	South-southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/8/2022	0	4.5	East-Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/15/2022	0	4.3	East	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/21/2022	0	9	West-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
11/29/2022	0	3	Southeast	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
12/5/2022	0	4	South-southwest	Good	No Noticeable Flow	No Foam Observed	No Foam Observed	No Foam Collected	--
Total:								0	

Notes:

Booms were deployed at Ditch E on 4/5/22.
Booms were removed at Ditch E on 12/5/22 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 7
Laboratory Analytical Results
Tyco Fire Products LP
Marinette, Wisconsin



Sample ID		COLLAPSED SW FOAM (5-17-22)	COLLAPSED SW FOAM (7-20-22)
Sample Date		5/17/2022	7/20/2022
Per- and Polyfluoroalkyl Substances	Units		
Perfluorobutanoic acid (PFBA)	ng/L	94	300
Perfluoropentanoic acid (PFPeA)	ng/L	270 B	550
Perfluorohexanoic acid (PFHxA)	ng/L	2,300 B	2,600
Perfluoroheptanoic acid (PFHpA)	ng/L	2,100	600
Perfluorooctanoic acid (PFOA)	ng/L	450,000 EJ	6,900 D
Perfluorononanoic acid (PFNA)	ng/L	250,000 D	7,000 D
Perfluorodecanoic acid (PFDA)	ng/L	33,000 D	5,300 D
Perfluoroundecanoic acid (PFUdA)	ng/L	8,200 D	4,000
Perfluorododecanoic acid (PFDoA)	ng/L	210	470
Perfluorotridecanoic acid (PFTrDA)	ng/L	24	55
Perfluorotetradecanoic acid (PFTeDA)	ng/L	13 J	45 J+
Perfluorohexadecanoic acid (PFHxDA)	ng/L	<8.9 U	<8.9 UJ
Perfluorooctadecanoic acid	ng/L	<9.4 U	<9.4 U
Perfluorobutane sulfonic acid (PFBS)	ng/L	6.2 J	<2.0 U
Perfluoropentane sulfonic acid (PFPeS)	ng/L	29	<3.0 U
Perfluorohexane sulfonic acid (PFHxS)	ng/L	8,600 D	98
Perfluoroheptane sulfonic acid (PFHpS)	ng/L	3,600 D	56
Perfluorooctane sulfonic acid (PFOS)	ng/L	460,000 EJ	44,000 D
Perfluorononane sulfonic acid (PFNS)	ng/L	120	51
Perfluorodecane sulfonic acid (PFDS)	ng/L	160	170
Perfluorododecane sulfonic acid (PFDOS)	ng/L	<9.7 U	<9.7 U
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/L	36 J+	26
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	ng/L	99,000 D	10,000 D
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ng/L	88,000 DJ+	52,000 D
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	ng/L	480	980
Perfluorooctane sulfonamide (FOSA)	ng/L	22,000 D	24,000 D
N-Methyl perfluorooctane sulfonamide (N-MeFOSA)	ng/L	21 J	16 J
N-Ethyl perfluorooctane sulfonamide (N-EtFOSA)	ng/L	55	20
N-Methylperfluorooctane sulfonamidoacetic acid (MeFOSAA)	ng/L	570 JN	280 JN
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/L	8,200 D	8,400 D
N-Methyl perfluorooctane sulfonamidoethanol (N-MeFOSE)	ng/L	19 J	22 J
N-Ethyl perfluorooctane sulfonamide ethanol (N-EtFOSE)	ng/L	16 J	53
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/L	<15 U	<15 U
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/L	<4.0 U	<4.0 U
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (F-53 Major)	ng/L	<2.4 U	<2.4 U
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/L	<3.2 U	<3.2 U

Notes on Page 2.

Table 7
Laboratory Analytical Results
Tyco Fire Products LP
Marinette, Wisconsin



Notes:

<= Compound not detected at method detection limit

ng/L = Nanograms per liter

Data Qualifiers:

D = Dilution required for sample analysis

E = Result exceeded calibration range

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

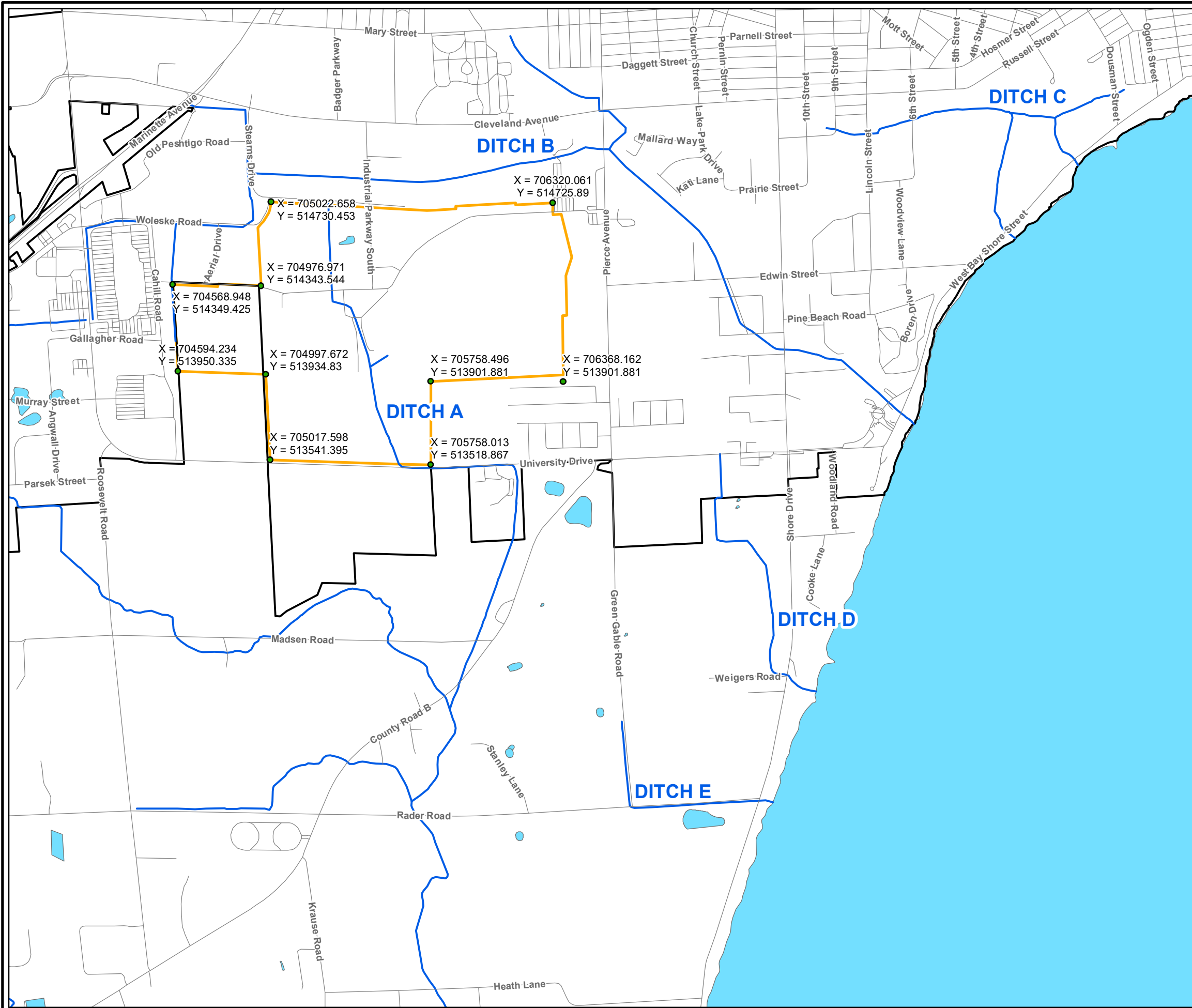
J- = The result is an estimated quantity. The associated numerical value is expected to have a negative or low bias

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

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

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

Figures

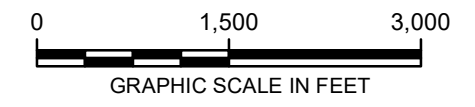


LEGEND:

- 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.
4. APPROXIMATE SITE PROPERTY BOUNDARY COORDINATES ARE IN WISCONSIN TRANSVERSE MERCATOR 91 METERS.

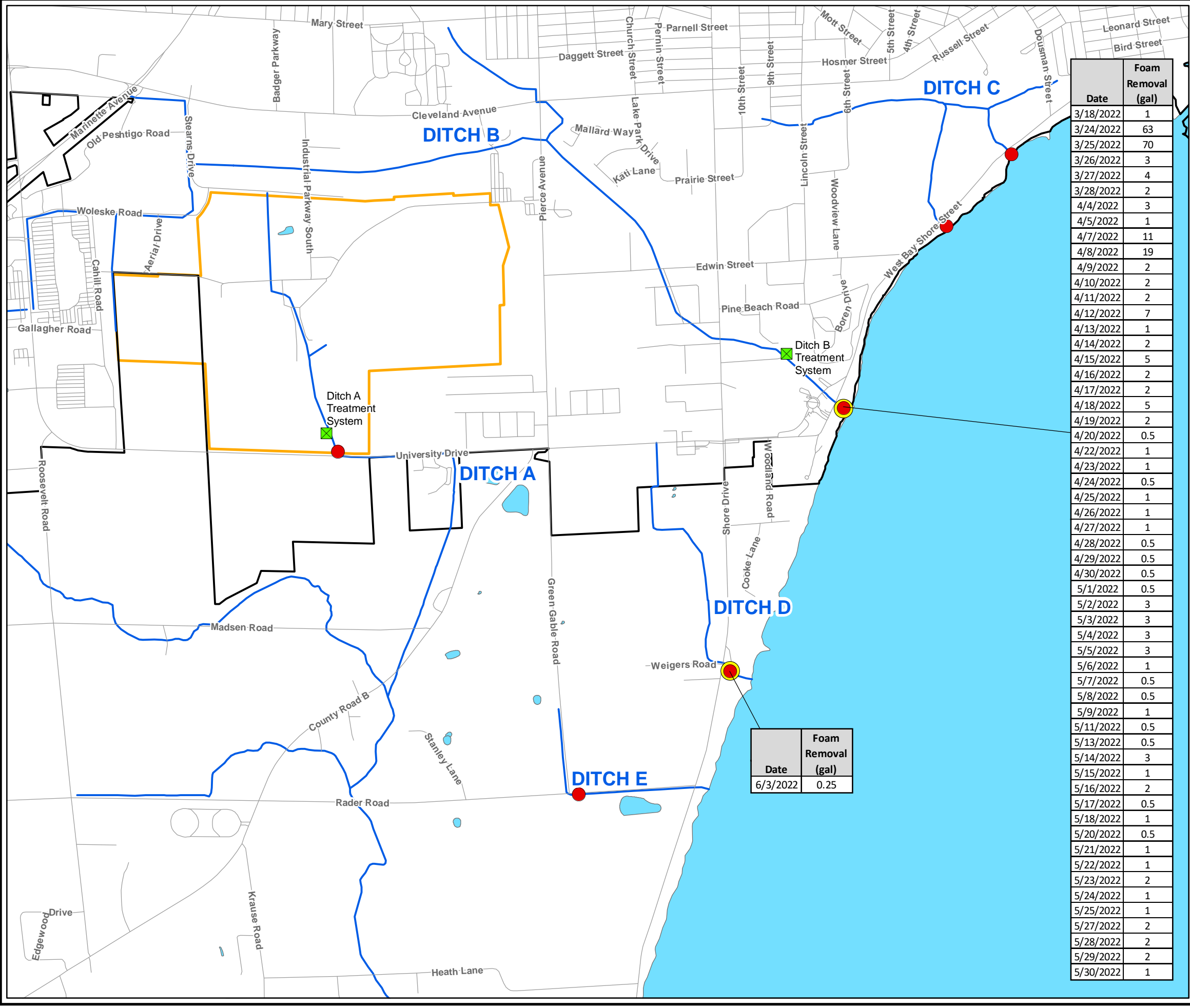


TYCO FIRE PRODUCTS, LP
 MARINETTE, WISCONSIN

SITE LOCATION MAP

ARCADIS | **FIGURE 1**

T:\ENV\TYCO\MXD\FTC_ditches\Fig2_Boom_Deployment_and_2022_Foam_Removal_Locations.mxd 1/19/2023 5:43:15 PM Last Saved By: MEstifanos

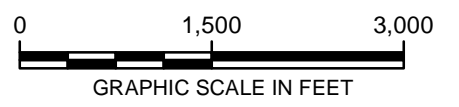


Date	Foam Removal (gal)
3/18/2022	1
3/24/2022	63
3/25/2022	70
3/26/2022	3
3/27/2022	4
3/28/2022	2
4/4/2022	3
4/5/2022	1
4/7/2022	11
4/8/2022	19
4/9/2022	2
4/10/2022	2
4/11/2022	2
4/12/2022	7
4/13/2022	1
4/14/2022	2
4/15/2022	5
4/16/2022	2
4/17/2022	2
4/18/2022	5
4/19/2022	2
4/20/2022	0.5
4/22/2022	1
4/23/2022	1
4/24/2022	0.5
4/25/2022	1
4/26/2022	1
4/27/2022	1
4/28/2022	0.5
4/29/2022	0.5
4/30/2022	0.5
5/1/2022	0.5
5/2/2022	3
5/3/2022	3
5/4/2022	3
5/5/2022	3
5/6/2022	1
5/7/2022	0.5
5/8/2022	0.5
5/9/2022	1
5/11/2022	0.5
5/13/2022	0.5
5/14/2022	3
5/15/2022	1
5/16/2022	2
5/17/2022	0.5
5/18/2022	1
5/20/2022	0.5
5/21/2022	1
5/22/2022	1
5/23/2022	2
5/24/2022	1
5/25/2022	1
5/27/2022	2
5/28/2022	2
5/29/2022	2
5/30/2022	1

Date	Foam Removal (gal)
6/3/2022	0.25

- LEGEND:**
- APPROXIMATE BOOM DEPLOYMENT LOCATIONS
 - APPROXIMATE FOAM REMOVAL LOCATION
 - APPROXIMATE SITE PROPERTY BOUNDARY
 - APPROXIMATE MARINETTE CITY BOUNDARY
 - ROAD
 - DITCH/STREAM
 - WATERBODY
 - SURFACE WATER TREATMENT SYSTEM

- 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.
 4. FOAM REMOVAL VOLUMES ARE APPROXIMATE BASED ON VISUAL OBSERVATION AT THE TIME OF COLLECTION.
 5. BOOMS WERE DEPLOYED ON DITCHES A, B, C, D, AND E BETWEEN 3/17/22 AND 4/5/22.
 6. BOOMS WERE REMOVED FROM DITCHES A, B, C, D, AND E ON 12/5/22.



TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

**BOOM DEPLOYMENT AND
FOAM REMOVAL LOCATIONS**

ARCADIS | **FIGURE 2**

Attachment 1

Foam Observation Photo Log

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 1

Date: 3/18/2022

Weather: Cloudy, 5 mph wind (NNE), 0.07 inches precipitation

Description: Brown, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing



Photograph: 2

Date: 3/24/2022

Weather: Cloudy, 3 mph wind (NNE), 0.01 inches precipitation

Description: White, frothy

Uncollapsed Volume Collected: 63 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 3

Date: 3/24/2022

Weather: Cloudy, 3 mph wind (NNE), 0.01 inches precipitation

Description: White, frothy foam. Additional booms deployed downstream.

Uncollapsed Volume Collected: 63 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing



Photograph: 4

Date: 3/24/2022

Weather: Cloudy, 3 mph wind (NNE), 0.01 inches precipitation

Description: Additional booms deployed downstream

Uncollapsed Volume Collected: 63 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 5

Date: 3/24/2022

Weather: Cloudy, 3 mph wind (NNE), 0.01 inches precipitation

Description: Double boom layer deployed.

Uncollapsed Volume Collected: 63 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing



Photograph: 6

Date: 3/25/2022

Weather: Cloudy, 7 mph wind (NNE), 0.02 inches precipitation

Description: Tan, frothy (8:30 AM).

Uncollapsed Volume Collected: 70 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 7

Date: 3/25/2022

Weather: Cloudy, 7 mph wind (NNE), 0.02 inches precipitation

Description: Tan, frothy (3:00 PM).

Uncollapsed Volume Collected: 70 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 8

Date: 3/25/2022

Weather: Cloudy, 7 mph wind (NNE), 0.02 inches precipitation

Description: Tan, frothy (5:00 PM).

Uncollapsed Volume Collected: 70 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 9

Date: 3/26/2022

Weather: Cloudy, 10 mph wind (NNW), No precipitation

Description: White/tan, frothy

Uncollapsed Volume Collected: 3 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 10

Date: 3/27/2022

Weather: Sunny, 8.5 mph wind (NNW), No precipitation

Description: White, frothy

Uncollapsed Volume Collected: 4 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 11

Date: 3/28/2022

Weather: Sunny, 7 mph wind (NNW), No precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 2 gal (daily total)

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 12

Date: 4/4/2022

Weather: Cloudy, 2 mph wind (NNE), 0.36 inches precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 13

Date: 4/5/2022

Weather: Overcast, 2 mph wind (NNE), 0.12 inches precipitation

Description: White frothy

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 14

Date: 4/7/2022

Weather: Cloudy, 4.7 mph wind (S), No precipitation

Description: White frothy

Uncollapsed Volume Collected: 11 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 15

Date: 4/8/2022

Weather: Cloudy, 6.5 mph wind (NNE), 0.01 inches precipitation

Description: White frothy

Uncollapsed Volume Collected: 19 gal

Location: Ditch B.
West Bay Shore Street crossing



Photograph: 16

Date: 4/9/2022

Weather: Cloudy, 4.5 mph wind (NNE), No precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B.
West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 17

Date: 4/10/2022

Weather: Sunny, 5 mph wind (NNE), No precipitation

Description: White frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing



Photograph: 18

Date: 4/11/2022

Weather: Sunny, 10 mph wind (W), No precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 19

Date: 4/12/2022

Weather: Sunny, 3 mph wind (WNW), 0.05 inches precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 7 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 20

Date: 4/13/2022

Weather: Sunny, 4 mph wind (NW), 0.53 inches precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 21

Date: 4/14/2022

Weather: Sunny, 8 mph wind (WSW), 0.13 inches precipitation

Description: White frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 22

Date: 4/15/2022

Weather: Cloudy, 7 mph wind (WSW), No precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 23

Date: 4/16/2022

Weather: Partly Cloudy, 9 mph wind (WNW), No precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 24

Date: 4/17/2022

Weather: Sunny, 4.7 mph wind (WNW), No precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 25

Date: 4/18/2022

Weather: Overcast, 6 mph wind (NW), 0.20 inches precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 26

Date: 4/19/2022

Weather: Sunny, 6 mph wind (NW), No precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 27

Date: 4/20/2022

Weather: Cloudy, 4 mph wind (NNW), 0.52 inches precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 28

Date: 4/22/2022

Weather: Partly Cloudy, 4 mph wind (NW), 0.26 inches precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 29

Date: 4/23/2022

Weather: Sunny, 4.5 mph wind (SE), 0.01 inches precipitation

Description: White/tan frothy

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 30

Date: 4/24/2022

Weather: Cloudy, 11.5 mph wind (SW), No precipitation

Description: Brown, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 31

Date: 4/25/2022

Weather: Partly Cloudy, 7 mph wind (W), 0.03 inches precipitation

Description: White/tan, frothy

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 32

Date: 4/26/2022

Weather: Cloudy, 7 mph wind (W), 0.01 inches precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 33

Date: 4/27/2022

Weather: Cloudy, 6 mph wind (WNW), No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 34

Date: 4/28/2022

Weather: Sunny, 6 mph wind (WNW), No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 35

Date: 4/29/2022

Weather: Sunny, 3 mph wind (WNW), No precipitation

Description: Brown, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 36

Date: 4/30/2022

Weather: Rainy, 3 mph wind (WSW), 0.77 inches precipitation

Description: Brown, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 37

Date: 5/1/2022

Weather: Cloudy, 5 mph wind (W), 0.01 inches precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 38

Date: 5/2/2022

Weather: Cloudy, 5 mph wind (WNW), No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 39

Date: 5/3/2022

Weather: Overcast, 6 mph wind (ENE), No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 40

Date: 5/4/2022

Weather: Sunny, 4.7 mph wind (NNE), No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 41

Date: 5/5/2022

Weather: Cloudy, No wind, No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 3 gal

Location: Ditch B.
West Bay Shore Street crossing



Photograph: 42

Date: 5/6/2022

Weather: Cloudy, 7 mph wind (ENE), No precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B.
West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 43

Date: 5/7/2022

Weather: Sunny, 7 mph wind (NE), No precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing



Photograph: 44

Date: 5/8/2022

Weather: Sunny, 8 mph wind (ENE), No precipitation

Description: Brown, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 45

Date: 5/9/2022

Weather: Cloudy, 4 mph wind (ENE), No precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing



Photograph: 46

Date: 5/11/2022

Weather: Overcast, 4 mph wind (ENE), No precipitation

Description: Brown, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 47

Date: 5/13/2022

Weather: Cloudy, 2 mph wind (SSE), No precipitation

Description: White, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing



Photograph: 48

Date: 5/14/2022

Weather: Sunny, 3 mph wind (SSE), 0.02 inches precipitation

Description: Tan, frothy

Uncollapsed Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 49

Date: 5/15/2022

Weather: Sunny, 5 mph wind (SW), No precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing



Photograph: 50

Date: 5/16/2022

Weather: Sunny, 3 mph wind (SSW), No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 51

Date: 5/17/2022

Weather: Sunny, 5 mph wind (N), No precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 52

Date: 5/18/2022

Weather: Cloudy, 1.7 mph wind (SSW), 0.08 inches precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 53

Date: 5/20/2022

Weather: Cloudy, 2 mph wind (SSE), 0.83 inches precipitation

Description: White, some froth

Uncollapsed Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 54

Date: 5/21/2022

Weather: Cloudy, 5 mph wind (SE), 0.01 inches precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 55

Date: 5/22/2022

Weather: Cloudy, 4.5 mph wind (NW), 0.01 inches precipitation

Description: White/tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 56

Date: 5/23/2022

Weather: Sunny, 3 mph wind (NNW), No precipitation

Description: Tan, frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 57

Date: 5/24/2022

Weather: Sunny, 3 mph wind (NE), No precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 58

Date: 5/25/2022

Weather: Cloudy, 3 mph wind (NE), 1.2 inches precipitation

Description: Tan/brown, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 59

Date: 5/27/2022

Weather: Cloudy, 4 mph wind (NNW), No precipitation

Description: White, frothy

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 60

Date: 5/28/2022

Weather: Cloudy, 2 mph wind (SSE), 0.02 inches precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 61

Date: 5/29/2022

Weather: Cloudy, 3 mph wind (SE), 0.03 inches precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing.



Photograph: 62

Date: 5/30/2022

Weather: Cloudy, 4 mph wind (SSE), No precipitation

Description: Tan, some froth

Uncollapsed Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing.

Foam Observation Photograph Log



Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 63

Date: 6/3/2022

Weather: Sunny, 8
mph wind (WSW), No
precipitation

Description: White,
some froth

**Uncollapsed Volume
Collected:** 0.25 gal

Location: Ditch D.
Shore Drive crossing.

Attachment 2

Transportation and Disposal Documentation

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

WIT560011850

2. Page 1 of

1

3. Emergency Response Phone

(262) 339-8762

4. Waste Tracking Number

WD26-003-008

5. Generator's Name and Mailing Address

JCI/Tyco
1 Stanton Street
Marinette WI 54143

Att: Ryan Suennen

Generator's Site Address (if different than mailing address)

JCI/Tyco
2700 Industrial Parkway S
Marinette WI 54143

Generator's Phone: 716 753-7411 Ext. 84026

6. Transporter 1 Company Name

Endpoint Waste Solutions Corp.

U.S. EPA ID Number

WIR000170027

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

Endpoint Waste Solutions Corp.
1024 Western Drive
Hartford WI 53027

U.S. EPA ID Number

Facility's Phone: 414 427-1200

License 4704

9. Waste Shipping Name and Description

10. Containers

11. Total Quantity

12. Unit WL/Vol.

No.

Type

1. Non-regulated material

0021 DF 8400 P

2. Non-regulated material

0002 DM 3400 P

3. Non-regulated material

0001 DF 80 P

4. Non-regulated material

0007 DM 4200 P

13. Special Handling Instructions and Additional Information

- Jute Filters and AFF Foam Profile# 05162022TIP-03-SH
- Steel Shot for Recycling Profile# 05162022TIP-02-RCY
- Surface Water Foam Profile# 05162022TIP-01-SH
- Waste Flux Profile# 05162022TIP-04-SW

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name

X Tim J. Hanson

Signature

X

Month Day Year
6 9 22

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Steven Bachtell

Signature

Month Day Year
06 09 22

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Tim J. Hanson

Signature

Month Day Year
6 20 22

490893 md 10-12-22

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number 1104583704	2. Page 1 of 2	3. Emergency Response Phone 282 330-9762	4. Waste Tracking Number 598-2022-15-08
5. Generator's Name and Mailing Address Endpoint Waste Solutions Corp 8871 S Lovers Lane Franklin WI 53132		Att. Land Marine		Generator's Site Address (if different than mailing address) Endpoint Waste Solutions Corp 1024 Western Drive Hartford WI 53027	
6. Transporter 1 Company Name Zion Environmental Services Inc		U.S. EPA ID Number ILR000107501			
7. Transporter 2 Company Name CN Railway		U.S. EPA ID Number ILR00180109		U.S. EPA ID Number ILR000180109 md 10-12-22	
8. Designated Facility Name and Site Address Chemical Waste Management Inc 17820 Cedar Springs Lane Arbington OR 97012-9700		Facility's Phone: 541 464-2642		U.S. EPA ID Number OR00020052305	
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.
		No.	Type		
1. Non-RCRA, non-DOT		11036	CF	31345	P
2. Non-RCRA, non-DOT		0003	CF	1526	P
3. Non-RCRA, non-DOT		0001	DF	0030	G
4. Non-RCRA, Non-DOT		0003	DM	1253	P
13. Special Handling Instructions and Additional Information 1. 0E349641: Spent Bag Filters/Dust Sweeping & Foam generated with PFA (non-RCRA) 2. 0R249643: Blank Impacted PPE/Equipment (non-RCRA) 3. 0R249655: Skinned surface water with TPA (non-RCRA) 1x55 gal 4. 0R349642: PFAS Impacted PPE/Equipment (Non Reg) 3x55 gal Containers # WMA 90735 970735					
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.					
Generator's/Offoror's Printed/Typed Name Fred S. [Signature]		Signature [Signature]		Month Day Year 10/17/22	
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____					
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name		Signature		Month Day Year	
Transporter 2 Printed/Typed Name Yemenya Shipp for CN		Signature [Signature]		Month Day Year 10/17/22	
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
Manifest Reference Number:				U.S. EPA ID Number	
17b. Alternate Facility (or Generator)					
Facility's Phone: _____					
17c. Signature of Alternate Facility (or Generator)				Month Day Year	
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a					
Printed/Typed Name Dawn Dunge		Signature [Signature]		Month Day Year 10/21/22	

490893

md 10-12-22

NON-HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

19. Generator ID Number
LICENSE 4704

20. Page 2
of 2

21. Waste Tracking Number
598-2022-15-08

BNS 10-17-22

22. Generator's Name
ENDPOINT WASTE SOLUTIONS
md 10.12.22

U.S. EPA ID Number
ILR000180109

23. Transporter 3 Company Name BNSF RAILWAY

U.S. EPA ID Number
NED001792910

24. Transporter 4 Company Name UNION PACIFIC RAILROAD

25. Waste Shipping Name and Description

26. Containers

No. Type

27. Total
Quantity

28. Unit
Wt./Vol.

GENERATOR

29. Special Handling Instructions and Additional Information

30. Transporter 3 Acknowledgment of Receipt of Materials
md 10.12.22

Printed/Typed Name
YEMAYA SHIPP FOR BNSF

Signature

Month Day Year
8 25 22

31. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name
YEMAYA SHIPP FOR UPRR

Signature

Month Day Year
9 10 22

32. Discrepancy

TRANSPORTER

DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
WIT560011850

2. Page 1 of 1

3. Emergency Response Phone
(262) 339-8762

4. Waste Tracking Number
W026-003-11

5. Generator's Name and Mailing Address
JCI/Tyco
1 Stanton Street
Marinette WI 54143
Generator's Phone: 715 753-7411 Ext. 84025

Att: Ryan Suennen

Generator's Site Address (if different than mailing address)
JCI/Tyco
2700 Industrial Parkway S
Marinette WI 54143

6. Transporter 1 Company Name
Endpoint Waste Solutions Corp.

U.S. EPA ID Number
WIR000170027

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
Endpoint Waste Solutions Corp.
1024 Western Drive
Hartford WI 53027
Facility's Phone: 414 427-1200

U.S. EPA ID Number
License 4704

9. Waste Shipping Name and Description

10. Containers
No. Type
11. Total Quantity
12. Unit Wt./Vol.

1. Non-RCRA, Non-DOT

0001 DF 0002 G

2.

3.

4.

13. Special Handling Instructions and Additional Information
1. Surface Water Foam Profile# 05162022TIP-01 1x55 gal drum

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offoror's Printed/Typed Name
Fred J Ringle on behalf of JCI/Tyco
Signature
Fred J Ringle
Month Day Year
08 10 22

15. International Shipments
 Import to U.S. Export from U.S.
Port of entry/exit:
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name
Fred J Ringle
Signature
Fred J Ringle
Month Day Year
08 10 22

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year:

17. Discrepancy
17a. Discrepancy Indication Space
 Quantity Type Residue Partial Rejection Full Rejection

Manifest Reference Number:
17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:
17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name
Fred J Ringle
Signature
Fred J Ringle
Month Day Year
08 10 22

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number <i>License 4704</i>	2. Page 1 of <i>1</i>	3. Emergency Response Phone <i>262 339-8782</i>	4. Waste Tracking Number <i>598-2022-25-08</i>		
5. Generator's Name and Mailing Address <i>Endpoint Waste Solutions Corp. 6871 S Lovers Lane Franklin WI 53132</i>			Generator's Site Address (if different than mailing address) <i>Att. Landi Martinez Endpoint Waste Solutions Corp. 1024 Western Drive Hartford WI 53027</i>				
Generator's Phone: <i>414 427-1200</i>			6. Transporter 1 Company Name <i>Ziron Environmental Services Inc.</i>		U.S. EPA ID Number <i>ILR000107581</i>		
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address <i>Chemical Waste Management, Inc. 17829 Cedar Springs Lane Arlington OR 97812-8709</i>			U.S. EPA ID Number <i>ORD089452353</i>				
Facility's Phone: <i>541 454-2843</i>			10. Containers		11. Total Quantity	12. Unit Wt./Vol.	
9. Waste Shipping Name and Description			No.	Type			
1. <i>Non-RCRA, non-DOT</i>			<i>0014</i>	<i>CF</i>	<i>8931</i>	<i>P</i>	
2. <i>Non-RCRA, non-DOT</i>			<i>0001</i>	<i>DF</i>	<i>0005</i>	<i>G</i>	
3.							
4.							
13. Special Handling Instructions and Additional Information <i>1. OR349641: Spent Bag Filters/Jute Matting & Boom contaminated with PFA (non-reg) 2. OR349686: Skimmed surface water with TRA (non-reg) Box # 970837</i>							
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.							
Generator's/Offeor's Printed/Typed Name <i>Fred J Ringle</i>			Signature <i>Fred J Ringle</i>		Month <i>11</i>	Day <i>17</i>	
Year <i>22</i>			15. International Shipments		Port of entry/exit:		
<input type="checkbox"/> Import to U.S.			<input type="checkbox"/> Export from U.S.		Date leaving U.S.:		
Transporter Signature (for exports only):							
16. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <i>Steve</i>			Signature <i>[Signature]</i>		Month <i>11</i>	Day <i>17</i>	
Transporter 2 Printed/Typed Name			Signature		Month	Day	
Year			Year				
17. Discrepancy							
17a. Discrepancy Indication Space							
<input type="checkbox"/> Quantity		<input type="checkbox"/> Type		<input type="checkbox"/> Residue		<input type="checkbox"/> Partial Rejection	
<input type="checkbox"/> Full Rejection							
Manifest Reference Number:							
17b. Alternate Facility (or Generator)			U.S. EPA ID Number				
Facility's Phone:							
17c. Signature of Alternate Facility (or Generator)					Month	Day	
Year			Year				
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a							
Printed/Typed Name			Signature		Month	Day	
Year			Year				

Attachment 3

Laboratory Analytical Reports

ANALYTICAL REPORT

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

Laboratory Job ID: 500-216765-1

Client Project/Site: Marinette, WI 30128077.04 Collapsed Foam

For:

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

Attn: Lisa Rutkowski



Authorized for release by:

6/3/2022 6:38:01 PM

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

Sandra.Fredrick@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

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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QC Sample Results	13
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Certification Summary	19
Chain of Custody	20
Receipt Checklists	22
Field Data Sheets	24
Isotope Dilution Summary	25

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Job ID: 500-216765-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-216765-1

Comments

No additional comments.

Receipt

The sample was received on 5/18/2022 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5° C.

Receipt Exceptions

Sample 1 has coloration and is foamy. Collapsed SW Foam (5-17-22) (500-216765-1)

LCMS

Method 537 (modified): The method blank for preparation batch 320-590416 contained several analytes above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 537 (modified): Results for sample Collapsed SW Foam (5-17-22) (500-216765-1) was 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. The percent recovery for the internal standard in the 100X analysis is 126.9% after the dilution factor was applied to the labeled internal standard area count.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: Collapsed SW Foam (5-17-22) (500-216765-1). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): The concentrations of Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS) associated with the following sample exceeded the instrument calibration range: Collapsed SW Foam (5-17-22) (500-216765-1). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The client was contacted and gave permission to report.

Method 537 (modified): The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: Collapsed SW Foam (5-17-22) (500-216765-1). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The samples were diluted within calibration range, and both sets of data were reported.

Method 537 (modified): The "I" qualifier means the transition mass ratio for Perfluorobutanesulfonic acid (PFBS) and NMeFOSAA was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte Collapsed SW Foam (5-17-22) (500-216765-1)

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was below the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. Collapsed SW Foam (5-17-22) (500-216765-1)

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

Organic Prep

Method 3535: During the solid phase extraction process, the following samples contained non-settable particulates which clogged the solid phase extraction column: Collapsed SW Foam (5-17-22) (500-216765-1). Method Code: 3535_PFC_28D Matrix: Aqueous preparation batch 320-590416

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-590416. Method Code: 3535_PFC_28D Matrix: Aqueous

Method 3535: Due to the matrix, the initial volumes used for the following samples deviated from the standard procedure: Collapsed SW

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Job ID: 500-216765-1 (Continued)

Laboratory: Eurofins Chicago (Continued)

Foam (5-17-22) (500-216765-1). A 10x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately. Method Code: 3535_PFC_28D Matrix: Aqueous preparation batch 320-590416

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

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Detection Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Client Sample ID: Collapsed SW Foam (5-17-22)

Lab Sample ID: 500-216765-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	94		50	24	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	270	B	20	4.9	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2300	B	20	5.8	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2100		20	2.5	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	100000	E B	20	8.5	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	71000	E I	20	2.7	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	22000	E	20	3.1	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	5500	E	20	11	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	210		20	5.5	ng/L	1		537 (modified)	Total/NA
Perfluorotridecanoic acid (PFTriA)	24		20	13	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	13	J	20	7.3	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.2	J I	20	2.0	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	29		20	3.0	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	7400	E B	20	5.7	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	3900	E B	20	1.9	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	280000	E B	20	5.4	ng/L	1		537 (modified)	Total/NA
Perfluorononanesulfonic acid (PFNS)	120		20	3.7	ng/L	1		537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	160		20	3.2	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	26000	E	20	9.8	ng/L	1		537 (modified)	Total/NA
NEtFOSA	55		20	8.7	ng/L	1		537 (modified)	Total/NA
NMeFOSA	21	I	20	4.3	ng/L	1		537 (modified)	Total/NA
NMeFOSAA	570	I	50	12	ng/L	1		537 (modified)	Total/NA
NEtFOSAA	11000	E	50	13	ng/L	1		537 (modified)	Total/NA
NMeFOSE	19	J	40	14	ng/L	1		537 (modified)	Total/NA
NEtFOSE	16	J	20	8.5	ng/L	1		537 (modified)	Total/NA
4:2 FTS	36		20	2.4	ng/L	1		537 (modified)	Total/NA
6:2 FTS	43000	E	50	25	ng/L	1		537 (modified)	Total/NA
8:2 FTS	21000	E	20	4.6	ng/L	1		537 (modified)	Total/NA
10:2 FTS	480		20	6.7	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	2700	B	2000	580	ng/L	100		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	1900	J	2000	250	ng/L	100		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	450000	E B	2000	850	ng/L	100		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA) - DL	250000		2000	270	ng/L	100		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA) - DL	33000		2000	310	ng/L	100		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA) - DL	8200		2000	1100	ng/L	100		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	8600	B	2000	570	ng/L	100		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS) - DL	3600		2000	190	ng/L	100		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	460000	E	2000	540	ng/L	100		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA) - DL	22000		2000	980	ng/L	100		537 (modified)	Total/NA
NEtFOSAA - DL	8200		5000	1300	ng/L	100		537 (modified)	Total/NA
6:2 FTS - DL	99000		5000	2500	ng/L	100		537 (modified)	Total/NA
8:2 FTS - DL	88000		2000	460	ng/L	100		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

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 Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-216765-1	Collapsed SW Foam (5-17-22)	Water	05/17/22 09:30	05/18/22 10:00

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Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Client Sample ID: Collapsed SW Foam (5-17-22)

Lab Sample ID: 500-216765-1

Date Collected: 05/17/22 09:30

Matrix: Water

Date Received: 05/18/22 10:00

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	94		50	24	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluoropentanoic acid (PFPeA)	270	B	20	4.9	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorohexanoic acid (PFHxA)	2300	B	20	5.8	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluoroheptanoic acid (PFHpA)	2100		20	2.5	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorooctanoic acid (PFOA)	100000	E I B	20	8.5	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorononanoic acid (PFNA)	71000	E I	20	2.7	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorodecanoic acid (PFDA)	22000	E	20	3.1	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluoroundecanoic acid (PFUnA)	5500	E	20	11	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorododecanoic acid (PFDoA)	210		20	5.5	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorotridecanoic acid (PFTriA)	24		20	13	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorotetradecanoic acid (PFTeA)	13	J	20	7.3	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<20		20	8.9	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluoro-n-octadecanoic acid (PFODA)	<20		20	9.4	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorobutanesulfonic acid (PFBS)	6.2	J I	20	2.0	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluoropentanesulfonic acid (PFPeS)	29		20	3.0	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorohexanesulfonic acid (PFHxS)	7400	E B	20	5.7	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluoroheptanesulfonic acid (PFHpS)	3900	E B	20	1.9	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorooctanesulfonic acid (PFOS)	280000	E B	20	5.4	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorononanesulfonic acid (PFNS)	120		20	3.7	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorodecanesulfonic acid (PFDS)	160		20	3.2	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorododecanesulfonic acid (PFDoS)	<20		20	9.7	ng/L		05/25/22 12:12	05/27/22 04:19	1
Perfluorooctanesulfonamide (FOSA)	26000	E	20	9.8	ng/L		05/25/22 12:12	05/27/22 04:19	1
NEtFOSA	55		20	8.7	ng/L		05/25/22 12:12	05/27/22 04:19	1
NMeFOSA	21	I	20	4.3	ng/L		05/25/22 12:12	05/27/22 04:19	1
NMeFOSAA	570	I	50	12	ng/L		05/25/22 12:12	05/27/22 04:19	1
NEtFOSAA	11000	E	50	13	ng/L		05/25/22 12:12	05/27/22 04:19	1
NMeFOSE	19	J	40	14	ng/L		05/25/22 12:12	05/27/22 04:19	1
NEtFOSE	16	J	20	8.5	ng/L		05/25/22 12:12	05/27/22 04:19	1
4:2 FTS	36		20	2.4	ng/L		05/25/22 12:12	05/27/22 04:19	1
6:2 FTS	43000	E	50	25	ng/L		05/25/22 12:12	05/27/22 04:19	1
8:2 FTS	21000	E	20	4.6	ng/L		05/25/22 12:12	05/27/22 04:19	1
10:2 FTS	480		20	6.7	ng/L		05/25/22 12:12	05/27/22 04:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<20		20	4.0	ng/L		05/25/22 12:12	05/27/22 04:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<40		40	15	ng/L		05/25/22 12:12	05/27/22 04:19	1
F-53B Major	<20		20	2.4	ng/L		05/25/22 12:12	05/27/22 04:19	1
F-53B Minor	<20		20	3.2	ng/L		05/25/22 12:12	05/27/22 04:19	1

Euofins Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Client Sample ID: Collapsed SW Foam (5-17-22)

Lab Sample ID: 500-216765-1

Date Collected: 05/17/22 09:30

Matrix: Water

Date Received: 05/18/22 10:00

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	91		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C5 PFPeA	97		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C2 PFHxA	94		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C4 PFHpA	93		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C4 PFOA	46		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C5 PFNA	45		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C2 PFDA	64		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C2 PFUnA	82		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C2 PFDoA	71		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C2 PFTeDA	37		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C2 PFHxDA	32		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C3 PFBS	107		25 - 150	05/25/22 12:12	05/27/22 04:19	1
18O2 PFHxS	105		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C4 PFOS	52		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C8 FOSA	44		10 - 150	05/25/22 12:12	05/27/22 04:19	1
d3-NMeFOSAA	67		25 - 150	05/25/22 12:12	05/27/22 04:19	1
d5-NEtFOSAA	66		25 - 150	05/25/22 12:12	05/27/22 04:19	1
d-N-MeFOSA-M	65		10 - 150	05/25/22 12:12	05/27/22 04:19	1
d-N-EtFOSA-M	65		10 - 150	05/25/22 12:12	05/27/22 04:19	1
d7-N-MeFOSE-M	105		10 - 150	05/25/22 12:12	05/27/22 04:19	1
d9-N-EtFOSE-M	70		10 - 150	05/25/22 12:12	05/27/22 04:19	1
M2-4:2 FTS	187	*5+	25 - 150	05/25/22 12:12	05/27/22 04:19	1
M2-6:2 FTS	170	*5+	25 - 150	05/25/22 12:12	05/27/22 04:19	1
M2-8:2 FTS	573	*5+	25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C3 HFPO-DA	93		25 - 150	05/25/22 12:12	05/27/22 04:19	1
13C2 10:2 FTS	112		25 - 150	05/25/22 12:12	05/27/22 04:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5000		5000	2400	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluoropentanoic acid (PFPeA)	<2000		2000	490	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorohexanoic acid (PFHxA)	2700	B	2000	580	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluoroheptanoic acid (PFHpA)	1900	J	2000	250	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorooctanoic acid (PFOA)	450000	E B	2000	850	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorononanoic acid (PFNA)	250000		2000	270	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorodecanoic acid (PFDA)	33000		2000	310	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluoroundecanoic acid (PFUnA)	8200		2000	1100	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorododecanoic acid (PFDoA)	<2000		2000	550	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorotridecanoic acid (PFTriA)	<2000		2000	1300	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorotetradecanoic acid (PFTeA)	<2000		2000	730	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2000		2000	890	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluoro-n-octadecanoic acid (PFODA)	<2000		2000	940	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorobutanesulfonic acid (PFBS)	<2000		2000	200	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluoropentanesulfonic acid (PFPeS)	<2000		2000	300	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorohexanesulfonic acid (PFHxS)	8600	B	2000	570	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluoroheptanesulfonic acid (PFHpS)	3600		2000	190	ng/L		05/25/22 12:12	06/02/22 05:58	100

Eurofins Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Client Sample ID: Collapsed SW Foam (5-17-22)

Lab Sample ID: 500-216765-1

Date Collected: 05/17/22 09:30

Matrix: Water

Date Received: 05/18/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	460000	E	2000	540	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorononanesulfonic acid (PFNS)	<2000		2000	370	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorodecanesulfonic acid (PFDS)	<2000		2000	320	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorododecanesulfonic acid (PFDoS)	<2000		2000	970	ng/L		05/25/22 12:12	06/02/22 05:58	100
Perfluorooctanesulfonamide (FOSA)	22000		2000	980	ng/L		05/25/22 12:12	06/02/22 05:58	100
NEtFOSA	<2000		2000	870	ng/L		05/25/22 12:12	06/02/22 05:58	100
NMeFOSA	<2000		2000	430	ng/L		05/25/22 12:12	06/02/22 05:58	100
NMeFOSAA	<5000		5000	1200	ng/L		05/25/22 12:12	06/02/22 05:58	100
NEtFOSAA	8200		5000	1300	ng/L		05/25/22 12:12	06/02/22 05:58	100
NMeFOSE	<4000		4000	1400	ng/L		05/25/22 12:12	06/02/22 05:58	100
NEtFOSE	<2000		2000	850	ng/L		05/25/22 12:12	06/02/22 05:58	100
4:2 FTS	<2000		2000	240	ng/L		05/25/22 12:12	06/02/22 05:58	100
6:2 FTS	99000		5000	2500	ng/L		05/25/22 12:12	06/02/22 05:58	100
8:2 FTS	88000		2000	460	ng/L		05/25/22 12:12	06/02/22 05:58	100
10:2 FTS	<2000		2000	670	ng/L		05/25/22 12:12	06/02/22 05:58	100
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2000		2000	400	ng/L		05/25/22 12:12	06/02/22 05:58	100
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4000		4000	1500	ng/L		05/25/22 12:12	06/02/22 05:58	100
F-53B Major	<2000		2000	240	ng/L		05/25/22 12:12	06/02/22 05:58	100
F-53B Minor	<2000		2000	320	ng/L		05/25/22 12:12	06/02/22 05:58	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	43		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C5 PFPeA	44		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C2 PFHxA	45		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C4 PFHpA	55		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C4 PFOA	45		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C5 PFNA	39		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C2 PFDA	49		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C2 PFUnA	34		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C2 PFDoA	30		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C2 PFTeDA	19	*5-	25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C2 PFHxDA	16	*5-	25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C3 PFBS	44		25 - 150				05/25/22 12:12	06/02/22 05:58	100
18O2 PFHxS	41		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C4 PFOS	44		25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C8 FOSA	57		10 - 150				05/25/22 12:12	06/02/22 05:58	100
d3-NMeFOSAA	34		25 - 150				05/25/22 12:12	06/02/22 05:58	100
d5-NEtFOSAA	56		25 - 150				05/25/22 12:12	06/02/22 05:58	100
d-N-MeFOSA-M	37		10 - 150				05/25/22 12:12	06/02/22 05:58	100
d-N-EtFOSA-M	7	*5-	10 - 150				05/25/22 12:12	06/02/22 05:58	100
d7-N-MeFOSE-M	40		10 - 150				05/25/22 12:12	06/02/22 05:58	100
d9-N-EtFOSE-M	32		10 - 150				05/25/22 12:12	06/02/22 05:58	100
M2-4:2 FTS	42		25 - 150				05/25/22 12:12	06/02/22 05:58	100
M2-6:2 FTS	113		25 - 150				05/25/22 12:12	06/02/22 05:58	100
M2-8:2 FTS	218	*5+	25 - 150				05/25/22 12:12	06/02/22 05:58	100
13C3 HFPO-DA	46		25 - 150				05/25/22 12:12	06/02/22 05:58	100

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Client Sample ID: Collapsed SW Foam (5-17-22)

Lab Sample ID: 500-216765-1

Date Collected: 05/17/22 09:30

Matrix: Water

Date Received: 05/18/22 10:00

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

<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C2 10:2 FTS	48		25 - 150	05/25/22 12:12	06/02/22 05:58	100

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-590416/1-A
Matrix: Water
Analysis Batch: 590921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590416

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluoropentanoic acid (PFPeA)	1.30	J	2.0	0.49	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorohexanoic acid (PFHxA)	7.56		2.0	0.58	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorooctanoic acid (PFOA)	19.7		2.0	0.85	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorohexanesulfonic acid (PFHxS)	12.4		2.0	0.57	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	0.19	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		05/25/22 12:12	05/27/22 03:27	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		05/25/22 12:12	05/27/22 03:27	1
NEtFOSA	<2.0		2.0	0.87	ng/L		05/25/22 12:12	05/27/22 03:27	1
NMeFOSA	<2.0		2.0	0.43	ng/L		05/25/22 12:12	05/27/22 03:27	1
NMeFOSAA	<5.0		5.0	1.2	ng/L		05/25/22 12:12	05/27/22 03:27	1
NEtFOSAA	<5.0		5.0	1.3	ng/L		05/25/22 12:12	05/27/22 03:27	1
NMeFOSE	<4.0		4.0	1.4	ng/L		05/25/22 12:12	05/27/22 03:27	1
NEtFOSE	<2.0		2.0	0.85	ng/L		05/25/22 12:12	05/27/22 03:27	1
4:2 FTS	<2.0		2.0	0.24	ng/L		05/25/22 12:12	05/27/22 03:27	1
6:2 FTS	<5.0		5.0	2.5	ng/L		05/25/22 12:12	05/27/22 03:27	1
8:2 FTS	<2.0		2.0	0.46	ng/L		05/25/22 12:12	05/27/22 03:27	1
10:2 FTS	<2.0		2.0	0.67	ng/L		05/25/22 12:12	05/27/22 03:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	0.40	ng/L		05/25/22 12:12	05/27/22 03:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4.0		4.0	1.5	ng/L		05/25/22 12:12	05/27/22 03:27	1
F-53B Major	<2.0		2.0	0.24	ng/L		05/25/22 12:12	05/27/22 03:27	1
F-53B Minor	<2.0		2.0	0.32	ng/L		05/25/22 12:12	05/27/22 03:27	1
	MB	MB							
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	88		25 - 150				05/25/22 12:12	05/27/22 03:27	1
13C5 PFPeA	83		25 - 150				05/25/22 12:12	05/27/22 03:27	1
13C2 PFHxA	85		25 - 150				05/25/22 12:12	05/27/22 03:27	1
13C4 PFHpA	86		25 - 150				05/25/22 12:12	05/27/22 03:27	1
13C4 PFOA	84		25 - 150				05/25/22 12:12	05/27/22 03:27	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

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

Lab Sample ID: MB 320-590416/1-A
Matrix: Water
Analysis Batch: 590921

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590416

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFNA	78		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C2 PFDA	75		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C2 PFUnA	75		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C2 PFDoA	81		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C2 PFTeDA	72		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C2 PFHxDA	53		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C3 PFBS	90		25 - 150	05/25/22 12:12	05/27/22 03:27	1
18O2 PFHxS	85		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C4 PFOS	75		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C8 FOSA	68		10 - 150	05/25/22 12:12	05/27/22 03:27	1
d3-NMeFOSAA	87		25 - 150	05/25/22 12:12	05/27/22 03:27	1
d5-NEtFOSAA	83		25 - 150	05/25/22 12:12	05/27/22 03:27	1
d-N-MeFOSA-M	58		10 - 150	05/25/22 12:12	05/27/22 03:27	1
d-N-EtFOSA-M	61		10 - 150	05/25/22 12:12	05/27/22 03:27	1
d7-N-MeFOSE-M	65		10 - 150	05/25/22 12:12	05/27/22 03:27	1
d9-N-EtFOSE-M	63		10 - 150	05/25/22 12:12	05/27/22 03:27	1
M2-4:2 FTS	92		25 - 150	05/25/22 12:12	05/27/22 03:27	1
M2-6:2 FTS	82		25 - 150	05/25/22 12:12	05/27/22 03:27	1
M2-8:2 FTS	81		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C3 HFPO-DA	78		25 - 150	05/25/22 12:12	05/27/22 03:27	1
13C2 10:2 FTS	99		25 - 150	05/25/22 12:12	05/27/22 03:27	1

Lab Sample ID: LCS 320-590416/2-A
Matrix: Water
Analysis Batch: 590921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanoic acid (PFPeA)	40.0	43.0		ng/L		107	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	39.4		ng/L		99	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	42.5		ng/L		106	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	42.5		ng/L		106	60 - 135
Perfluorononanoic acid (PFNA)	40.0	45.0		ng/L		112	60 - 135
Perfluorodecanoic acid (PFDA)	40.0	44.0		ng/L		110	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	42.1		ng/L		105	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	42.2		ng/L		105	60 - 135
Perfluorotridecanoic acid (PFTriA)	40.0	40.6		ng/L		102	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	44.4		ng/L		111	60 - 135
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	43.9		ng/L		110	60 - 135
Perfluoro-n-octadecanoic acid (PFODA)	40.0	33.3		ng/L		83	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.4	36.6		ng/L		104	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.5	38.5		ng/L		103	60 - 135

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

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

Lab Sample ID: LCS 320-590416/2-A
Matrix: Water
Analysis Batch: 590921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.6		ng/L		95	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	38.1	45.4		ng/L		119	60 - 135
Perfluorooctanesulfonic acid (PFOS)	37.1	39.5		ng/L		107	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.4	43.2		ng/L		113	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	42.0		ng/L		109	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.7	37.2		ng/L		96	60 - 135
Perfluorooctanesulfonamide (FOSA)	40.0	43.2		ng/L		108	60 - 135
NEtFOSA	40.0	40.8		ng/L		102	60 - 135
NMeFOSA	40.0	42.3		ng/L		106	60 - 135
NMeFOSAA	40.0	41.2		ng/L		103	60 - 135
NEtFOSAA	40.0	36.0		ng/L		90	60 - 135
NMeFOSE	40.0	39.2		ng/L		98	60 - 135
NEtFOSE	40.0	38.1		ng/L		95	60 - 135
4:2 FTS	37.4	40.9		ng/L		109	60 - 135
6:2 FTS	37.9	36.3		ng/L		96	60 - 135
8:2 FTS	38.3	36.3		ng/L		95	60 - 135
10:2 FTS	38.6	37.5		ng/L		97	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	47.8		ng/L		127	60 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	39.6		ng/L		99	60 - 135
F-53B Major	37.3	40.7		ng/L		109	60 - 135
F-53B Minor	37.7	39.6		ng/L		105	60 - 135

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	112		25 - 150
13C5 PFPeA	98		25 - 150
13C2 PFHxA	97		25 - 150
13C4 PFHpA	99		25 - 150
13C4 PFOA	95		25 - 150
13C5 PFNA	87		25 - 150
13C2 PFDA	83		25 - 150
13C2 PFUnA	89		25 - 150
13C2 PFDoA	91		25 - 150
13C2 PFTeDA	80		25 - 150
13C2 PFHxDA	60		25 - 150
13C3 PFBS	98		25 - 150
18O2 PFHxS	97		25 - 150
13C4 PFOS	82		25 - 150
13C8 FOSA	79		10 - 150
d3-NMeFOSAA	101		25 - 150
d5-NEtFOSAA	99		25 - 150
d-N-MeFOSA-M	69		10 - 150
d-N-EtFOSA-M	73		10 - 150

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

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

Lab Sample ID: LCS 320-590416/2-A
Matrix: Water
Analysis Batch: 590921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590416

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d7-N-MeFOSE-M	74		10 - 150
d9-N-EtFOSE-M	81		10 - 150
M2-4:2 FTS	102		25 - 150
M2-6:2 FTS	100		25 - 150
M2-8:2 FTS	86		25 - 150
13C3 HFPO-DA	90		25 - 150
13C2 10:2 FTS	120		25 - 150

Lab Sample ID: LCSD 320-590416/3-A
Matrix: Water
Analysis Batch: 590921

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 590416

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Perfluorobutanoic acid (PFBA)	40.0	46.1		ng/L		115	60 - 135	2	30
Perfluoropentanoic acid (PFPeA)	40.0	44.6		ng/L		111	60 - 135	4	30
Perfluorohexanoic acid (PFHxA)	40.0	42.1		ng/L		105	60 - 135	7	30
Perfluoroheptanoic acid (PFHpA)	40.0	43.8		ng/L		110	60 - 135	3	30
Perfluorooctanoic acid (PFOA)	40.0	44.1		ng/L		110	60 - 135	4	30
Perfluorononanoic acid (PFNA)	40.0	48.2		ng/L		120	60 - 135	7	30
Perfluorodecanoic acid (PFDA)	40.0	44.8		ng/L		112	60 - 135	2	30
Perfluoroundecanoic acid (PFUnA)	40.0	45.6		ng/L		114	60 - 135	8	30
Perfluorododecanoic acid (PFDoA)	40.0	43.3		ng/L		108	60 - 135	3	30
Perfluorotridecanoic acid (PFTriA)	40.0	44.8		ng/L		112	60 - 135	10	30
Perfluorotetradecanoic acid (PFTeA)	40.0	43.5		ng/L		109	60 - 135	2	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	46.7		ng/L		117	60 - 135	6	30
Perfluoro-n-octadecanoic acid (PFODA)	40.0	29.5		ng/L		74	60 - 135	12	30
Perfluorobutanesulfonic acid (PFBS)	35.4	44.3		ng/L		125	60 - 135	19	30
Perfluoropentanesulfonic acid (PFPeS)	37.5	44.1		ng/L		118	60 - 135	13	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.6		ng/L		100	60 - 135	5	30
Perfluoroheptanesulfonic acid (PFHpS)	38.1	48.5		ng/L		127	60 - 135	7	30
Perfluorooctanesulfonic acid (PFOS)	37.1	41.9		ng/L		113	60 - 135	6	30
Perfluorononanesulfonic acid (PFNS)	38.4	44.3		ng/L		115	60 - 135	2	30
Perfluorodecanesulfonic acid (PFDS)	38.6	44.6		ng/L		116	60 - 135	6	30
Perfluorododecanesulfonic acid (PFDoS)	38.7	43.6		ng/L		113	60 - 135	16	30
Perfluorooctanesulfonamide (FOSA)	40.0	45.8		ng/L		114	60 - 135	6	30
NEtFOSA	40.0	44.6		ng/L		112	60 - 135	9	30
NMeFOSA	40.0	48.0		ng/L		120	60 - 135	13	30
NMeFOSAA	40.0	43.2		ng/L		108	60 - 135	5	30

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

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

Lab Sample ID: LCSD 320-590416/3-A
Matrix: Water
Analysis Batch: 590921

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 590416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
NEtFOSAA	40.0	40.9		ng/L		102	60 - 135	13	30
NMeFOSE	40.0	45.5		ng/L		114	60 - 135	15	30
NEtFOSE	40.0	37.9		ng/L		95	60 - 135	0	30
4:2 FTS	37.4	43.9		ng/L		117	60 - 135	7	30
6:2 FTS	37.9	45.0		ng/L		119	60 - 135	21	30
8:2 FTS	38.3	37.7		ng/L		98	60 - 135	4	30
10:2 FTS	38.6	38.8		ng/L		101	60 - 135	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.7	50.7		ng/L		134	60 - 135	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	41.4		ng/L		104	60 - 135	4	30
F-53B Major	37.3	43.0		ng/L		115	60 - 135	6	30
F-53B Minor	37.7	42.2		ng/L		112	60 - 135	6	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C4 PFBA	94		25 - 150
13C5 PFPeA	85		25 - 150
13C2 PFHxA	82		25 - 150
13C4 PFHpA	84		25 - 150
13C4 PFOA	82		25 - 150
13C5 PFNA	77		25 - 150
13C2 PFDA	79		25 - 150
13C2 PFUnA	74		25 - 150
13C2 PFDoA	82		25 - 150
13C2 PFTeDA	74		25 - 150
13C2 PFHxDA	50		25 - 150
13C3 PFBS	83		25 - 150
18O2 PFHxS	84		25 - 150
13C4 PFOS	74		25 - 150
13C8 FOSA	72		10 - 150
d3-NMeFOSAA	87		25 - 150
d5-NEtFOSAA	82		25 - 150
d-N-MeFOSA-M	54		10 - 150
d-N-EtFOSA-M	59		10 - 150
d7-N-MeFOSE-M	61		10 - 150
d9-N-EtFOSE-M	67		10 - 150
M2-4:2 FTS	85		25 - 150
M2-6:2 FTS	81		25 - 150
M2-8:2 FTS	78		25 - 150
13C3 HFPO-DA	81		25 - 150
13C2 10:2 FTS	101		25 - 150

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Client Sample ID: Collapsed SW Foam (5-17-22)

Lab Sample ID: 500-216765-1

Date Collected: 05/17/22 09:30

Matrix: Water

Date Received: 05/18/22 10:00

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	3535	DL		590416	05/25/22 12:12	RAC	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100	592004	06/02/22 05:58	AF	TAL SAC
Total/NA	Prep	3535			590416	05/25/22 12:12	RAC	TAL SAC
Total/NA	Analysis	537 (modified)		1	590921	05/27/22 04:19	AF	TAL SAC

Laboratory References:

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



Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-22

- 1
- 2
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- 11
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- 13
- 14
- 15

Chain of Custody Record

West Sacramento, CA 95605-1500
phone 916 373.5600 fax 303 467 7248

Regulatory Program: DW NPDES RCRA Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact		Project Manager: Lisa Rutkowski		Sampler: <i>Jacob Rominger</i>		Date: <i>5-17-22</i>		COC No: <i>1</i>	
Arcadis U.S., Inc.		Email: <i>N/A</i>		Lab Contact: <i>Sandle Fredrick</i>		Carrier: <i>FedEx</i>		1 of 1 COCs	
126 North Jefferson Street, Suite 400		Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Sample (Y/N) MS/MSD (Y/N) EPA 837 Modified (96 Counts)		Walk-in Client: _____ Lab Sampling: _____		Lab Project Number 50018970	
Milwaukee, WI 53202									
Project Name: <i>Marinette, WI</i> Site: <i>Marinette, WI</i> P O # <i>30128077.04 (Collapsed Foam)</i>		500-216765 COC				Sample Specific Notes: <i>500-216765</i>			
Phor _____ FAX _____									

Sample Identification	Sample Date	Sample Time	Type (C=Comp, G=Gas)	Matrix	# of Cont.	Filtered	Performed EPA 837 Modified (96 Counts)	Sample Specific Notes
<i>Collapsed SW Foam (5-17-22)</i>	<i>5-17-22</i>	<i>9:30</i>	<i>G</i>	<i>W</i>	<i>3</i>	<i>N</i>	<i>N</i>	<i>X</i>
<div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background: linear-gradient(to top right, transparent 49%, #ccc 49%, #ccc 51%, transparent 51%); background-size: 100% 100%; pointer-events: none;"> VTR </div>								

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:
9 gallons of collapsed foam

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Corr'd: _____		Therm ID No. _____	
Relinquished by: <i>Jacob Rominger</i>		Company: <i>Barley Excavating</i>		Date/Time: <i>5-17-22/11:00</i>		Received by: <i>Fed Ex</i>		Company: _____	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:	



Environmental Testing
Intelligence

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248


TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Regulatory Program: DW NPDES RCRA Other:

Client Contact
Arcadis U.S., Inc.
126 North Jefferson Street, Suite 400
Milwaukee, WI 53202
Phone _____
FAX _____
Project Name: Marinette, WI
Site: Marinette, WI
P O # 30128077.04 (Collapsed Foam)

Project Manager: Lisa Rutkowski
Email: N/A
Tel/Fax: N/A

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
TAT if different from Below _____
 2 weeks
 1 week
 2 days
 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)	EPA 537 Modified (36 Compounds)	Lab Contact: Sandie Fredrick	Date: 5-17-22	Carrier: FedEx	COC No: 1 of 1 COCs
Collapsed SW Foam (517-22)	5-17-22	9:30	G	W	3	N	N	X				
 500-216765 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

Special Instructions/QC Requirements & Comments:
9 gallons of collapsed foam

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Received by: Jacob Laminger
Date/Time: 5-17-22/11:00
Company: Barley Excavating

Received by: [Signature]
Date/Time: [Signature]
Company: [Signature]

Received in Laboratory by: [Signature]
Date/Time: [Signature]
Company: [Signature]

Custody Seal No.: 1375416
Cooler Temp. (°C): Obs'd: 15 Therm ID No.: 60
Received by: Jacob Laminger
Date/Time: 5-17-22/11:00
Company: Barley Excavating

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-216765-1

Login Number: 216765

List Number: 1

Creator: Scott, Sherri L

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

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-216765-1

Login Number: 216765

List Number: 2

Creator: Oropeza, Salvador

List Source: Eurofins Sacramento

List Creation: 05/18/22 08:21 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1375416
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	1.5C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
500-216765-1	Collapsed SW Foam (5-17-22)	91	97	94	93	46	45	64	82
500-216765-1 - DL	Collapsed SW Foam (5-17-22)	43	44	45	55	45	39	49	34
LCS 320-590416/2-A	Lab Control Sample	112	98	97	99	95	87	83	89
LCSD 320-590416/3-A	Lab Control Sample Dup	94	85	82	84	82	77	79	74
MB 320-590416/1-A	Method Blank	88	83	85	86	84	78	75	75

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)
500-216765-1	Collapsed SW Foam (5-17-22)	71	37	32	107	105	52	44	67
500-216765-1 - DL	Collapsed SW Foam (5-17-22)	30	19 *5-	16 *5-	44	41	44	57	34
LCS 320-590416/2-A	Lab Control Sample	91	80	60	98	97	82	79	101
LCSD 320-590416/3-A	Lab Control Sample Dup	82	74	50	83	84	74	72	87
MB 320-590416/1-A	Method Blank	81	72	53	90	85	75	68	87

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)
500-216765-1	Collapsed SW Foam (5-17-22)	66	65	65	105	70	187 *5+	170 *5+	573 *5+
500-216765-1 - DL	Collapsed SW Foam (5-17-22)	56	37	7 *5-	40	32	42	113	218 *5+
LCS 320-590416/2-A	Lab Control Sample	99	69	73	74	81	102	100	86
LCSD 320-590416/3-A	Lab Control Sample Dup	82	54	59	61	67	85	81	78
MB 320-590416/1-A	Method Blank	83	58	61	65	63	92	82	81

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)	M102FTS (25-150)
500-216765-1	Collapsed SW Foam (5-17-22)	93	112
500-216765-1 - DL	Collapsed SW Foam (5-17-22)	46	48
LCS 320-590416/2-A	Lab Control Sample	90	120
LCSD 320-590416/3-A	Lab Control Sample Dup	81	101
MB 320-590416/1-A	Method Blank	78	99

Surrogate Legend

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

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-216765-1

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
M102FTS = 13C2 10:2 FTS

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ANALYTICAL REPORT

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

Laboratory Job ID: 500-219762-1

Client Project/Site: Marinette, WI 30128077.04 Collapsed Foam

For:

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

Attn: Lisa Rutkowski



Authorized for release by:
8/17/2022 1:08:25 PM

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

Sandra.Fredrick@et.eurofinsus.com

LINKS

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results through



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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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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Job ID: 500-219762-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-219762-1

Comments

No additional comments.

Receipt

The sample was received on 7/21/2022 9:20 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5° C.

Receipt Exceptions

Sample 1 has coloration. Collapsed SW Foam (7-20-22) (500-219762-1)

LCMS

Method 537 (modified): The concentration of several analytes associated with the following sample exceeded the instrument calibration range: Collapsed SW Foam (7-20-22) (500-219762-1). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The sample was diluted within calibration range, and both sets of data are reported.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. Collapsed SW Foam (7-20-22) (500-219762-1)

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: Collapsed SW Foam (7-20-22) (500-219762-1). The sample was reanalyzed at a dilution with concurring results. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): Results for sample Collapsed SW Foam (7-20-22) (500-219762-1) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. The percent recovery for the internal standard in the 50X analysis is 93% after the dilution factor was applied to the labeled internal standard area count.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: Collapsed SW Foam (7-20-22) (500-219762-1). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s).

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: Collapsed SW Foam (7-20-22) (500-219762-1). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was below the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte. Collapsed SW Foam (7-20-22) (500-219762-1)

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 in preparation batch 320-608635 were light yellow, turbid and were observed to have a thick layer of sediment present in the bottom of the bottle prior to extraction. Collapsed SW Foam (7-20-22) (500-219762-1)

Method Code: 3535_PFC_28D

Matrix: Water

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-608635.

Method Code: 3535_PFC_28D

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Job ID: 500-219762-1 (Continued)

Laboratory: Eurofins Chicago (Continued)

Matrix: Water

Method 3535: Due to the turbidity and the sediments in the sample, the initial volume used for the following sample deviated from the standard procedure: Collapsed SW Foam (7-20-22) (500-219762-1). A 10x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.

preparation batch 320-608635

Method Code: 3535_PFC_28D

Matrix: Water

Method 3535: The following samples in preparation batch 320-608635 was light yellow following extraction: Collapsed SW Foam (7-20-22) (500-219762-1)

Method Code: 3535_PFC_28D

Matrix: Water

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



Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

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

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

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Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-219762-1	Collapsed SW Foam (7-20-22)	Water	07/20/22 09:30	07/21/22 09:20

- 1
- 2
- 3
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- 14

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Client Sample ID: Collapsed SW Foam (7-20-22)

Lab Sample ID: 500-219762-1

Date Collected: 07/20/22 09:30

Matrix: Water

Date Received: 07/21/22 09:20

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	300		50	24	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluoropentanoic acid (PFPeA)	550		20	4.9	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorohexanoic acid (PFHxA)	2600		20	5.8	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluoroheptanoic acid (PFHpA)	600		20	2.5	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorooctanoic acid (PFOA)	6800	E	20	8.5	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorononanoic acid (PFNA)	6300	E	20	2.7	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorodecanoic acid (PFDA)	6200	E	20	3.1	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluoroundecanoic acid (PFUnA)	4000		20	11	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorododecanoic acid (PFDoA)	470		20	5.5	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorotridecanoic acid (PFTriA)	55		20	13	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorotetradecanoic acid (PFTeA)	45		20	7.3	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<20		20	8.9	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluoro-n-octadecanoic acid (PFODA)	<20		20	9.4	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorobutanesulfonic acid (PFBS)	<20		20	2.0	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluoropentanesulfonic acid (PFPeS)	<20		20	3.0	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorohexanesulfonic acid (PFHxS)	98		20	5.7	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluoroheptanesulfonic acid (PFHpS)	56		20	1.9	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorooctanesulfonic acid (PFOS)	40000	E	20	5.4	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorononanesulfonic acid (PFNS)	51		20	3.7	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorodecanesulfonic acid (PFDS)	170		20	3.2	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorododecanesulfonic acid (PFDoS)	<20		20	9.7	ng/L		08/10/22 12:20	08/13/22 02:15	1
Perfluorooctanesulfonamide (FOSA)	22000	E	20	9.8	ng/L		08/10/22 12:20	08/13/22 02:15	1
NEtFOSA	20		20	8.7	ng/L		08/10/22 12:20	08/13/22 02:15	1
NMeFOSA	16	J	20	4.3	ng/L		08/10/22 12:20	08/13/22 02:15	1
NMeFOSAA	280	I	50	12	ng/L		08/10/22 12:20	08/13/22 02:15	1
NEtFOSAA	9500	E	50	13	ng/L		08/10/22 12:20	08/13/22 02:15	1
NMeFOSE	22	J	40	14	ng/L		08/10/22 12:20	08/13/22 02:15	1
NEtFOSE	53		20	8.5	ng/L		08/10/22 12:20	08/13/22 02:15	1
4:2 FTS	26		20	2.4	ng/L		08/10/22 12:20	08/13/22 02:15	1
6:2 FTS	11000	E	50	25	ng/L		08/10/22 12:20	08/13/22 02:15	1
8:2 FTS	41000	E	20	4.6	ng/L		08/10/22 12:20	08/13/22 02:15	1
10:2 FTS	980		20	6.7	ng/L		08/10/22 12:20	08/13/22 02:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<20		20	4.0	ng/L		08/10/22 12:20	08/13/22 02:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<40		40	15	ng/L		08/10/22 12:20	08/13/22 02:15	1
F-53B Major	<20		20	2.4	ng/L		08/10/22 12:20	08/13/22 02:15	1
F-53B Minor	<20		20	3.2	ng/L		08/10/22 12:20	08/13/22 02:15	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	49		25 - 150				08/10/22 12:20	08/13/22 02:15	1

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Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Client Sample ID: Collapsed SW Foam (7-20-22)

Lab Sample ID: 500-219762-1

Date Collected: 07/20/22 09:30

Matrix: Water

Date Received: 07/21/22 09:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	67		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C2 PFHxA	109		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C4 PFHpA	90		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C4 PFOA	96		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C5 PFNA	79		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C2 PFDA	68		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C2 PFUnA	90		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C2 PFDoA	52		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C2 PFTeDA	20	*5-	25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C2 PFHxDA	17	*5-	25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C3 PFBS	87		25 - 150	08/10/22 12:20	08/13/22 02:15	1
18O2 PFHxS	99		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C4 PFOS	75		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C8 FOSA	74		10 - 150	08/10/22 12:20	08/13/22 02:15	1
d3-NMeFOSAA	83		25 - 150	08/10/22 12:20	08/13/22 02:15	1
d5-NEtFOSAA	90		25 - 150	08/10/22 12:20	08/13/22 02:15	1
d-N-MeFOSA-M	70		10 - 150	08/10/22 12:20	08/13/22 02:15	1
d-N-EtFOSA-M	56		10 - 150	08/10/22 12:20	08/13/22 02:15	1
d7-N-MeFOSE-M	55		10 - 150	08/10/22 12:20	08/13/22 02:15	1
d9-N-EtFOSE-M	48		10 - 150	08/10/22 12:20	08/13/22 02:15	1
M2-4:2 FTS	128		25 - 150	08/10/22 12:20	08/13/22 02:15	1
M2-6:2 FTS	128		25 - 150	08/10/22 12:20	08/13/22 02:15	1
M2-8:2 FTS	138		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C3 HFPO-DA	79		25 - 150	08/10/22 12:20	08/13/22 02:15	1
13C2 10:2 FTS	80		25 - 150	08/10/22 12:20	08/13/22 02:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2500		2500	1200	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluoropentanoic acid (PFPeA)	500	J	1000	250	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorohexanoic acid (PFHxA)	3800		1000	290	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluoroheptanoic acid (PFHpA)	530	J	1000	130	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorooctanoic acid (PFOA)	6900		1000	430	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorononanoic acid (PFNA)	7000		1000	140	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorodecanoic acid (PFDA)	5300		1000	160	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluoroundecanoic acid (PFUnA)	6700	I	1000	550	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorododecanoic acid (PFDoA)	440	J	1000	280	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorotridecanoic acid (PFTriA)	<1000		1000	650	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorotetradecanoic acid (PFTeA)	<1000		1000	370	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1000		1000	450	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluoro-n-octadecanoic acid (PFODA)	<1000		1000	470	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorobutanesulfonic acid (PFBS)	<1000		1000	100	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluoropentanesulfonic acid (PFPeS)	<1000		1000	150	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorohexanesulfonic acid (PFHxS)	<1000		1000	290	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluoroheptanesulfonic acid (PFHpS)	<1000		1000	95	ng/L		08/10/22 12:20	08/15/22 20:48	50

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Client Sample ID: Collapsed SW Foam (7-20-22)

Lab Sample ID: 500-219762-1

Date Collected: 07/20/22 09:30

Matrix: Water

Date Received: 07/21/22 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	44000		1000	270	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorononanesulfonic acid (PFNS)	<1000		1000	190	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorodecanesulfonic acid (PFDS)	<1000		1000	160	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorododecanesulfonic acid (PFDoS)	<1000		1000	490	ng/L		08/10/22 12:20	08/15/22 20:48	50
Perfluorooctanesulfonamide (FOSA)	24000		1000	490	ng/L		08/10/22 12:20	08/15/22 20:48	50
NEtFOSA	<1000		1000	440	ng/L		08/10/22 12:20	08/15/22 20:48	50
NMeFOSA	<1000		1000	220	ng/L		08/10/22 12:20	08/15/22 20:48	50
NMeFOSAA	<2500		2500	600	ng/L		08/10/22 12:20	08/15/22 20:48	50
NEtFOSAA	8400		2500	650	ng/L		08/10/22 12:20	08/15/22 20:48	50
NMeFOSE	<2000		2000	700	ng/L		08/10/22 12:20	08/15/22 20:48	50
NEtFOSE	<1000		1000	430	ng/L		08/10/22 12:20	08/15/22 20:48	50
4:2 FTS	<1000		1000	120	ng/L		08/10/22 12:20	08/15/22 20:48	50
6:2 FTS	10000		2500	1300	ng/L		08/10/22 12:20	08/15/22 20:48	50
8:2 FTS	52000		1000	230	ng/L		08/10/22 12:20	08/15/22 20:48	50
10:2 FTS	870 J		1000	340	ng/L		08/10/22 12:20	08/15/22 20:48	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<1000		1000	200	ng/L		08/10/22 12:20	08/15/22 20:48	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<2000		2000	750	ng/L		08/10/22 12:20	08/15/22 20:48	50
F-53B Major	<1000		1000	120	ng/L		08/10/22 12:20	08/15/22 20:48	50
F-53B Minor	<1000		1000	160	ng/L		08/10/22 12:20	08/15/22 20:48	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	85		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C5 PFPeA	82		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C2 PFHxA	82		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C4 PFHpA	86		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C4 PFOA	96		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C5 PFNA	85		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C2 PFDA	88		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C2 PFUnA	73		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C2 PFDoA	50		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C2 PFTeDA	19	*5-	25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C2 PFHxDA	15	*5-	25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C3 PFBS	86		25 - 150				08/10/22 12:20	08/15/22 20:48	50
18O2 PFHxS	91		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C4 PFOS	70		25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C8 FOSA	99		10 - 150				08/10/22 12:20	08/15/22 20:48	50
d3-NMeFOSAA	88		25 - 150				08/10/22 12:20	08/15/22 20:48	50
d5-NEtFOSAA	93		25 - 150				08/10/22 12:20	08/15/22 20:48	50
d-N-MeFOSA-M	65		10 - 150				08/10/22 12:20	08/15/22 20:48	50
d-N-EtFOSA-M	57		10 - 150				08/10/22 12:20	08/15/22 20:48	50
d7-N-MeFOSE-M	40		10 - 150				08/10/22 12:20	08/15/22 20:48	50
d9-N-EtFOSE-M	43		10 - 150				08/10/22 12:20	08/15/22 20:48	50
M2-4:2 FTS	70		25 - 150				08/10/22 12:20	08/15/22 20:48	50
M2-6:2 FTS	100		25 - 150				08/10/22 12:20	08/15/22 20:48	50
M2-8:2 FTS	151	*5+	25 - 150				08/10/22 12:20	08/15/22 20:48	50
13C3 HFPO-DA	78		25 - 150				08/10/22 12:20	08/15/22 20:48	50

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Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Client Sample ID: Collapsed SW Foam (7-20-22)

Lab Sample ID: 500-219762-1

Date Collected: 07/20/22 09:30

Matrix: Water

Date Received: 07/21/22 09:20

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

<u>Isotope Dilution</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
13C2 10:2 FTS	45		25 - 150	08/10/22 12:20	08/15/22 20:48	50

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

Definitions/Glossary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
E	Result exceeded calibration range.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-608635/1-A
Matrix: Water
Analysis Batch: 609222

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608635

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	0.19	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		08/10/22 12:20	08/13/22 01:45	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		08/10/22 12:20	08/13/22 01:45	1
NEtFOSA	<2.0		2.0	0.87	ng/L		08/10/22 12:20	08/13/22 01:45	1
NMeFOSA	<2.0		2.0	0.43	ng/L		08/10/22 12:20	08/13/22 01:45	1
NMeFOSAA	<5.0		5.0	1.2	ng/L		08/10/22 12:20	08/13/22 01:45	1
NEtFOSAA	<5.0		5.0	1.3	ng/L		08/10/22 12:20	08/13/22 01:45	1
NMeFOSE	<4.0		4.0	1.4	ng/L		08/10/22 12:20	08/13/22 01:45	1
NEtFOSE	<2.0		2.0	0.85	ng/L		08/10/22 12:20	08/13/22 01:45	1
4:2 FTS	<2.0		2.0	0.24	ng/L		08/10/22 12:20	08/13/22 01:45	1
6:2 FTS	<5.0		5.0	2.5	ng/L		08/10/22 12:20	08/13/22 01:45	1
8:2 FTS	<2.0		2.0	0.46	ng/L		08/10/22 12:20	08/13/22 01:45	1
10:2 FTS	<2.0		2.0	0.67	ng/L		08/10/22 12:20	08/13/22 01:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	0.40	ng/L		08/10/22 12:20	08/13/22 01:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4.0		4.0	1.5	ng/L		08/10/22 12:20	08/13/22 01:45	1
F-53B Major	<2.0		2.0	0.24	ng/L		08/10/22 12:20	08/13/22 01:45	1
F-53B Minor	<2.0		2.0	0.32	ng/L		08/10/22 12:20	08/13/22 01:45	1
Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
13C4 PFBA	98		25 - 150	08/10/22 12:20	08/13/22 01:45	1			
13C5 PFPeA	99		25 - 150	08/10/22 12:20	08/13/22 01:45	1			
13C2 PFHxA	98		25 - 150	08/10/22 12:20	08/13/22 01:45	1			
13C4 PFHpA	93		25 - 150	08/10/22 12:20	08/13/22 01:45	1			
13C4 PFOA	104		25 - 150	08/10/22 12:20	08/13/22 01:45	1			

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

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

Lab Sample ID: MB 320-608635/1-A
Matrix: Water
Analysis Batch: 609222

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608635

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C5 PFNA	100		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C2 PFDA	104		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C2 PFUnA	106		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C2 PFDoA	100		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C2 PFTeDA	101		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C2 PFHxDA	101		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C3 PFBS	104		25 - 150	08/10/22 12:20	08/13/22 01:45	1
18O2 PFHxS	106		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C4 PFOS	96		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C8 FOSA	106		10 - 150	08/10/22 12:20	08/13/22 01:45	1
d3-NMeFOSAA	126		25 - 150	08/10/22 12:20	08/13/22 01:45	1
d5-NEtFOSAA	118		25 - 150	08/10/22 12:20	08/13/22 01:45	1
d-N-MeFOSA-M	75		10 - 150	08/10/22 12:20	08/13/22 01:45	1
d-N-EtFOSA-M	79		10 - 150	08/10/22 12:20	08/13/22 01:45	1
d7-N-MeFOSE-M	86		10 - 150	08/10/22 12:20	08/13/22 01:45	1
d9-N-EtFOSE-M	90		10 - 150	08/10/22 12:20	08/13/22 01:45	1
M2-4:2 FTS	114		25 - 150	08/10/22 12:20	08/13/22 01:45	1
M2-6:2 FTS	107		25 - 150	08/10/22 12:20	08/13/22 01:45	1
M2-8:2 FTS	105		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C3 HFPO-DA	85		25 - 150	08/10/22 12:20	08/13/22 01:45	1
13C2 10:2 FTS	112		25 - 150	08/10/22 12:20	08/13/22 01:45	1

Lab Sample ID: LCS 320-608635/2-A
Matrix: Water
Analysis Batch: 609222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanoic acid (PFPeA)	40.0	43.7		ng/L		109	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	37.8		ng/L		95	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	42.7		ng/L		107	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	44.8		ng/L		112	60 - 135
Perfluorononanoic acid (PFNA)	40.0	41.9		ng/L		105	60 - 135
Perfluorodecanoic acid (PFDA)	40.0	34.6		ng/L		86	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	38.9		ng/L		97	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	41.6		ng/L		104	60 - 135
Perfluorotridecanoic acid (PFTriA)	40.0	40.2		ng/L		100	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	41.4		ng/L		104	60 - 135
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	43.7		ng/L		109	60 - 135
Perfluoro-n-octadecanoic acid (PFODA)	40.0	42.1		ng/L		105	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.5	38.8		ng/L		109	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.5	38.6		ng/L		103	60 - 135

Eurofins Chicago

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

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

Lab Sample ID: LCS 320-608635/2-A
Matrix: Water
Analysis Batch: 609222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	36.5	36.6		ng/L		100	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	38.2	46.5		ng/L		122	60 - 135
Perfluorooctanesulfonic acid (PFOS)	37.2	42.2		ng/L		114	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.5	42.7		ng/L		111	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	44.3		ng/L		115	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.8	41.1		ng/L		106	60 - 135
Perfluorooctanesulfonamide (FOSA)	40.0	42.7		ng/L		107	60 - 135
NEtFOSA	40.0	42.1		ng/L		105	60 - 135
NMeFOSA	40.0	44.8		ng/L		112	60 - 135
NMeFOSAA	40.0	43.7		ng/L		109	60 - 135
NEtFOSAA	40.0	42.8		ng/L		107	60 - 135
NMeFOSE	40.0	44.3		ng/L		111	60 - 135
NEtFOSE	40.0	39.1		ng/L		98	60 - 135
4:2 FTS	37.5	42.3		ng/L		113	60 - 135
6:2 FTS	38.1	41.2		ng/L		108	60 - 135
8:2 FTS	38.4	38.7		ng/L		101	60 - 135
10:2 FTS	38.6	42.4		ng/L		110	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	43.0		ng/L		114	60 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	43.4		ng/L		109	60 - 135
F-53B Major	37.4	40.6		ng/L		109	60 - 135
F-53B Minor	37.8	41.4		ng/L		110	60 - 135

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	89		25 - 150
13C5 PFPeA	94		25 - 150
13C2 PFHxA	104		25 - 150
13C4 PFHpA	94		25 - 150
13C4 PFOA	95		25 - 150
13C5 PFNA	96		25 - 150
13C2 PFDA	94		25 - 150
13C2 PFUnA	106		25 - 150
13C2 PFDoA	96		25 - 150
13C2 PFTeDA	86		25 - 150
13C2 PFHxDA	94		25 - 150
13C3 PFBS	98		25 - 150
18O2 PFHxS	100		25 - 150
13C4 PFOS	93		25 - 150
13C8 FOSA	90		10 - 150
d3-NMeFOSAA	114		25 - 150
d5-NEtFOSAA	116		25 - 150
d-N-MeFOSA-M	72		10 - 150
d-N-EtFOSA-M	78		10 - 150

Eurofins Chicago

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

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

Lab Sample ID: LCS 320-608635/2-A
Matrix: Water
Analysis Batch: 609222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608635

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
d7-N-MeFOSE-M	79		10 - 150
d9-N-EtFOSE-M	88		10 - 150
M2-4:2 FTS	109		25 - 150
M2-6:2 FTS	99		25 - 150
M2-8:2 FTS	99		25 - 150
13C3 HFPO-DA	88		25 - 150
13C2 10:2 FTS	101		25 - 150

Lab Sample ID: LCSD 320-608635/3-A
Matrix: Water
Analysis Batch: 609222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 608635

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Perfluorobutanoic acid (PFBA)	40.0	43.5		ng/L		109	60 - 135	4	30	
Perfluoropentanoic acid (PFPeA)	40.0	46.0		ng/L		115	60 - 135	5	30	
Perfluorohexanoic acid (PFHxA)	40.0	41.5		ng/L		104	60 - 135	9	30	
Perfluoroheptanoic acid (PFHpA)	40.0	46.4		ng/L		116	60 - 135	8	30	
Perfluorooctanoic acid (PFOA)	40.0	43.5		ng/L		109	60 - 135	3	30	
Perfluorononanoic acid (PFNA)	40.0	43.3		ng/L		108	60 - 135	3	30	
Perfluorodecanoic acid (PFDA)	40.0	36.6		ng/L		91	60 - 135	6	30	
Perfluoroundecanoic acid (PFUnA)	40.0	42.0		ng/L		105	60 - 135	8	30	
Perfluorododecanoic acid (PFDoA)	40.0	41.3		ng/L		103	60 - 135	1	30	
Perfluorotridecanoic acid (PFTriA)	40.0	41.1		ng/L		103	60 - 135	2	30	
Perfluorotetradecanoic acid (PFTeA)	40.0	43.4		ng/L		109	60 - 135	5	30	
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	47.8		ng/L		120	60 - 135	9	30	
Perfluoro-n-octadecanoic acid (PFODA)	40.0	39.8		ng/L		100	60 - 135	6	30	
Perfluorobutanesulfonic acid (PFBS)	35.5	41.1		ng/L		116	60 - 135	6	30	
Perfluoropentanesulfonic acid (PFPeS)	37.5	39.9		ng/L		106	60 - 135	3	30	
Perfluorohexanesulfonic acid (PFHxS)	36.5	37.7		ng/L		103	60 - 135	3	30	
Perfluoroheptanesulfonic acid (PFHpS)	38.2	45.1		ng/L		118	60 - 135	3	30	
Perfluorooctanesulfonic acid (PFOS)	37.2	41.1		ng/L		110	60 - 135	3	30	
Perfluorononanesulfonic acid (PFNS)	38.5	42.9		ng/L		111	60 - 135	0	30	
Perfluorodecanesulfonic acid (PFDS)	38.6	42.6		ng/L		111	60 - 135	4	30	
Perfluorododecanesulfonic acid (PFDoS)	38.8	43.5		ng/L		112	60 - 135	6	30	
Perfluorooctanesulfonamide (FOSA)	40.0	41.9		ng/L		105	60 - 135	2	30	
NEtFOSA	40.0	42.6		ng/L		106	60 - 135	1	30	
NMeFOSA	40.0	42.9		ng/L		107	60 - 135	4	30	
NMeFOSAA	40.0	43.1		ng/L		108	60 - 135	1	30	

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QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

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

Lab Sample ID: LCSD 320-608635/3-A
Matrix: Water
Analysis Batch: 609222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 608635

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
NEtFOSAA	40.0	45.0		ng/L		112	60 - 135	5	30
NMeFOSE	40.0	45.0		ng/L		113	60 - 135	2	30
NEtFOSE	40.0	40.0		ng/L		100	60 - 135	2	30
4:2 FTS	37.5	39.5		ng/L		105	60 - 135	7	30
6:2 FTS	38.1	43.5		ng/L		114	60 - 135	5	30
8:2 FTS	38.4	38.9		ng/L		101	60 - 135	0	30
10:2 FTS	38.6	43.4		ng/L		112	60 - 135	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	41.7		ng/L		111	60 - 135	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	46.1		ng/L		115	60 - 135	6	30
F-53B Major	37.4	36.2		ng/L		97	60 - 135	11	30
F-53B Minor	37.8	40.6		ng/L		108	60 - 135	2	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C4 PFBA	89		25 - 150
13C5 PFPeA	89		25 - 150
13C2 PFHxA	94		25 - 150
13C4 PFHpA	88		25 - 150
13C4 PFOA	95		25 - 150
13C5 PFNA	90		25 - 150
13C2 PFDA	89		25 - 150
13C2 PFUnA	101		25 - 150
13C2 PFDoA	97		25 - 150
13C2 PFTeDA	89		25 - 150
13C2 PFHxDA	93		25 - 150
13C3 PFBS	97		25 - 150
18O2 PFHxS	99		25 - 150
13C4 PFOS	93		25 - 150
13C8 FOSA	94		10 - 150
d3-NMeFOSAA	114		25 - 150
d5-NEtFOSAA	108		25 - 150
d-N-MeFOSA-M	71		10 - 150
d-N-EtFOSA-M	74		10 - 150
d7-N-MeFOSE-M	80		10 - 150
d9-N-EtFOSE-M	82		10 - 150
M2-4:2 FTS	107		25 - 150
M2-6:2 FTS	95		25 - 150
M2-8:2 FTS	98		25 - 150
13C3 HFPO-DA	80		25 - 150
13C2 10:2 FTS	93		25 - 150

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Client Sample ID: Collapsed SW Foam (7-20-22)

Lab Sample ID: 500-219762-1

Date Collected: 07/20/22 09:30

Matrix: Water

Date Received: 07/21/22 09:20

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	3535			608635	CAA	EET SAC	08/10/22 12:20
Total/NA	Analysis	537 (modified)		1	609222	K1S	EET SAC	08/13/22 02:15
Total/NA	Prep	3535	DL		608635	CAA	EET SAC	08/10/22 12:20
Total/NA	Analysis	537 (modified)	DL	50	609754	D1R	EET SAC	08/15/22 20:48

Laboratory References:

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



Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-22

- 1
- 2
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- 11
- 12
- 13
- 14

Chain of Custody Record




Environment Testing
TestAmerica

Regulatory Program: DW NPDES RCRA Other:

Client Contact
 Arcadis U.S., Inc.
 126 North Jefferson Street, Suite 400
 Milwaukee, WI 53202
 Phone _____ FAX _____
 Project Name: Marinette, WI
 Site: Marinette, WI
 P O # 30128077.04 (Collapsed Foam)

Project Manager: Lisa Rutkowski
 Email: N/A
 Tel/Fax: N/A

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

Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	EPA 537 Modified (36 Compounds)
7-20-22	9:30	G	W	3	N	N	X
Collapsed SW Foam (7-20-22)							
 500-219762 Chain of Custody							

Sample Identification
 Collapsed SW Foam (7-20-22)

Sample Specific Notes:

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

Special Instructions/QC Requirements & Comments:
 10 days Max IAT

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Client Contact
 Project Manager: Lisa Rutkowski
 Email: N/A
 Tel/Fax: N/A

Sampler: Jacob Rominger
 Date: 7-20-22
 Carrier: FedEx
 Lab Contact: Sandie Fredrick

COC No.: 1 of 1 COCs

For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Lab Project Number: 50018970

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Custody Seal No.: 1831836
 Company: Barley Excavating
 Date/Time: 7-20-22/10:06

Received by: Jacob Rominger
 Date/Time: 7-21-22 09:20



Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-219762-1

Login Number: 219762

List Number: 2

Creator: Her, David A

List Source: Eurofins Sacramento

List Creation: 07/22/22 10:18 AM

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	1831836
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	1.5 c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	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	



Environment Testing America

Sacramento Sample Receiving Notes



500-219762 Field Sheet

Tracking #: S887 6287 7528

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

Job: _____

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

Therm. ID: <u>W6</u> Corr. Factor: (+/-) <u>N/A</u> °C	Notes: _____ <u>Coloration #1</u> <u>S 7-21-22</u>
Ice <input checked="" type="checkbox"/> Wet <input checked="" type="checkbox"/> Gel _____ Other _____	
Cooler Custody Seal: <u>1831836</u>	
Cooler ID: _____	
Temp Observed: <u>1.5</u> °C Corrected: <u>1.5</u> °C	
From: Temp Blank <input checked="" type="checkbox"/> Sample <input type="checkbox"/>	
Opening/Processing The Shipment Yes No NA	
Cooler compromised/tampered with? <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	
Cooler Temperature is acceptable? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Frozen samples show signs of thaw? <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Initials: <u>SO</u> Date: <u>7-21-22</u>	
Unpacking/Labeling The Samples Yes No NA	
COC is complete w/o discrepancies? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Samples compromised/tampered with? <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	
Containers are not broken or leaking? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Sample custody seal? <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Sample containers have legible labels? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Sample date/times are provided? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Appropriate containers are used? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Sample bottles are completely filled? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Sample preservatives verified? <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Is the Field Sampler's name on COC? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Samples require splitting/compositing? <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Samples w/o discrepancies? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Zero headspace?* <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Alkalinity has no headspace? <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Perchlorate has headspace? (Methods 314, 331, 6850) <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Multiphasic samples are not present? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Trizma Lot #(s): _____	
Login Completion Yes No NA	
Receipt Temperature on COC? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Samples received within hold time? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
NCM Filed? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Log Release checked in TALS? <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	
Initials: <u>SO</u> Date: <u>7-21-22</u>	

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Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Marinette, WI 30128077.04 Collapsed Foam

Job ID: 500-219762-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
500-219762-1	Collapsed SW Foam (7-20-22)	49	67	109	90	96	79	68	90
500-219762-1 - DL	Collapsed SW Foam (7-20-22)	85	82	82	86	96	85	88	73
LCS 320-608635/2-A	Lab Control Sample	89	94	104	94	95	96	94	106
LCSD 320-608635/3-A	Lab Control Sample Dup	89	89	94	88	95	90	89	101
MB 320-608635/1-A	Method Blank	98	99	98	93	104	100	104	106

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)
500-219762-1	Collapsed SW Foam (7-20-22)	52	20 *5-	17 *5-	87	99	75	74	83
500-219762-1 - DL	Collapsed SW Foam (7-20-22)	50	19 *5-	15 *5-	86	91	70	99	88
LCS 320-608635/2-A	Lab Control Sample	96	86	94	98	100	93	90	114
LCSD 320-608635/3-A	Lab Control Sample Dup	97	89	93	97	99	93	94	114
MB 320-608635/1-A	Method Blank	100	101	101	104	106	96	106	126

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)
500-219762-1	Collapsed SW Foam (7-20-22)	90	70	56	55	48	128	128	138
500-219762-1 - DL	Collapsed SW Foam (7-20-22)	93	65	57	40	43	70	100	151 *5+
LCS 320-608635/2-A	Lab Control Sample	116	72	78	79	88	109	99	99
LCSD 320-608635/3-A	Lab Control Sample Dup	108	71	74	80	82	107	95	98
MB 320-608635/1-A	Method Blank	118	75	79	86	90	114	107	105

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)	M102FTS (25-150)
500-219762-1	Collapsed SW Foam (7-20-22)	79	80
500-219762-1 - DL	Collapsed SW Foam (7-20-22)	78	45
LCS 320-608635/2-A	Lab Control Sample	88	101
LCSD 320-608635/3-A	Lab Control Sample Dup	80	93
MB 320-608635/1-A	Method Blank	85	112

Surrogate Legend

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

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.

Job ID: 500-219762-1

Project/Site: Marinette, WI 30128077.04 Collapsed Foam

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

M102FTS = 13C2 10:2 FTS

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