

Notice: Use this form to request a **written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This form should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do **not** use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 2 of 5

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name Nelson	First Denice	MI	Organization/ Business Name Tyco Fire Products LP
Mailing Address 2700 Industrial Parkway South		City Marinette	State WI
		ZIP Code 54143	
Phone # (include area code)	Fax # (include area code)	Email	

The requester listed above: (select all that apply)

- Is currently the owner
 Is considering selling the Property
 Is renting or leasing the Property
 Is considering acquiring the Property
 Is a lender with a mortgagee interest in the Property
 Other. Explain the status of the Property with respect to the applicant:

Contact Information (to be contacted with questions about this request)

Select if same as requester

Contact Last Name Milionis	First Peter	MI	Organization/ Business Name Arcadis
Mailing Address 126 N Jefferson Street, Suite 400		City Milwaukee	State WI
		ZIP Code 53202	
Phone # (include area code) (267) 285-1815	Fax # (include area code)	Email peter.milionis@arcadis.com	

Environmental Consultant (if applicable)

Contact Last Name Milionis	First Peter	MI	Organization/ Business Name Arcadis
Mailing Address 126 N Jefferson Street, Suite 400		City Milwaukee	State WI
		ZIP Code 53202	
Phone # (include area code) (267) 285-1815	Fax # (include area code)	Email peter.milionis@arcadis.com	

Section 2. Property Information

Property Name Tyco Stanton Street Facility		FID No. (if known) 438005590	
BRRTS No. (if known) 0238581955		Parcel Identification Number	
Street Address 1 Stanton Street		City Marinette	State WI
		ZIP Code 54143	
County Marinette	Municipality where the Property is located <input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village of Marinette	Property is composed of: <input type="radio"/> Single tax parcel <input type="radio"/> Multiple tax parcels	Property Size Acres 66

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 3 of 5

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

No Yes

Date requested by: _____

Reason: _____

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

No. **Include the fee that is required for your request in Section 3, 4 or 5.**

Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:

Section 3. Technical Assistance or Post-Closure Modifications;

Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: [Numbers in brackets are for WI DNR Use]

- No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of \$350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.
- Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of \$700.**
- Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of \$1050.**
- Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of \$1050.**
- Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of \$1050.**
- Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of \$1050.**
- Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of \$350**
- Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of \$425.**
- Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of \$425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

- Schedule a Technical Assistance Meeting - **Include a fee of \$700.**
- Hazardous Waste Determination - **Include a fee of \$700.**
- Other Technical Assistance - **Include a fee of \$700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

- Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of \$1050, and:**
 - Include a fee of \$300 for sites with residual soil contamination; and
 - Include a fee of \$350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this fo

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

Phase I Environmental Site Assessment Report - Date: _____

Phase II Environmental Site Assessment Report - Date: _____

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 4 of 5

Legal Description of Property (required for all liability requests and specialized agreements)

Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

Groundwater Soil Sediment Other medium - Describe: _____

Date of Collection: _____

A copy of the closure letter and submittal materials

Draft tax cancellation agreement

Draft agreement for assignment of tax foreclosure judgment

Other report(s) or information - Describe: May 2024 Additional Site Investigation Work Plan

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

Yes - Date (if known): _____

No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at:

dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

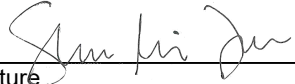
Section 7. Certification by the Person who completed this form

I am the person submitting this request (requester)

I prepared this request for: Denice Nelson

Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.


Signature

5/20/2024
Date Signed

Senior Environmental Specialist
Title

(312) 575-3732
Telephone Number (include area code)

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Page 5 of 5

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a [DNR regional brownfields specialist](#) with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>.

DNR NORTHERN REGION

Attn: RR Program Assistant
 Department of Natural Resources
 223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION

Attn: RR Program Assistant
 Department of Natural Resources
 2984 Shawano Avenue
 Green Bay WI 54313

DNR SOUTH CENTRAL REGION

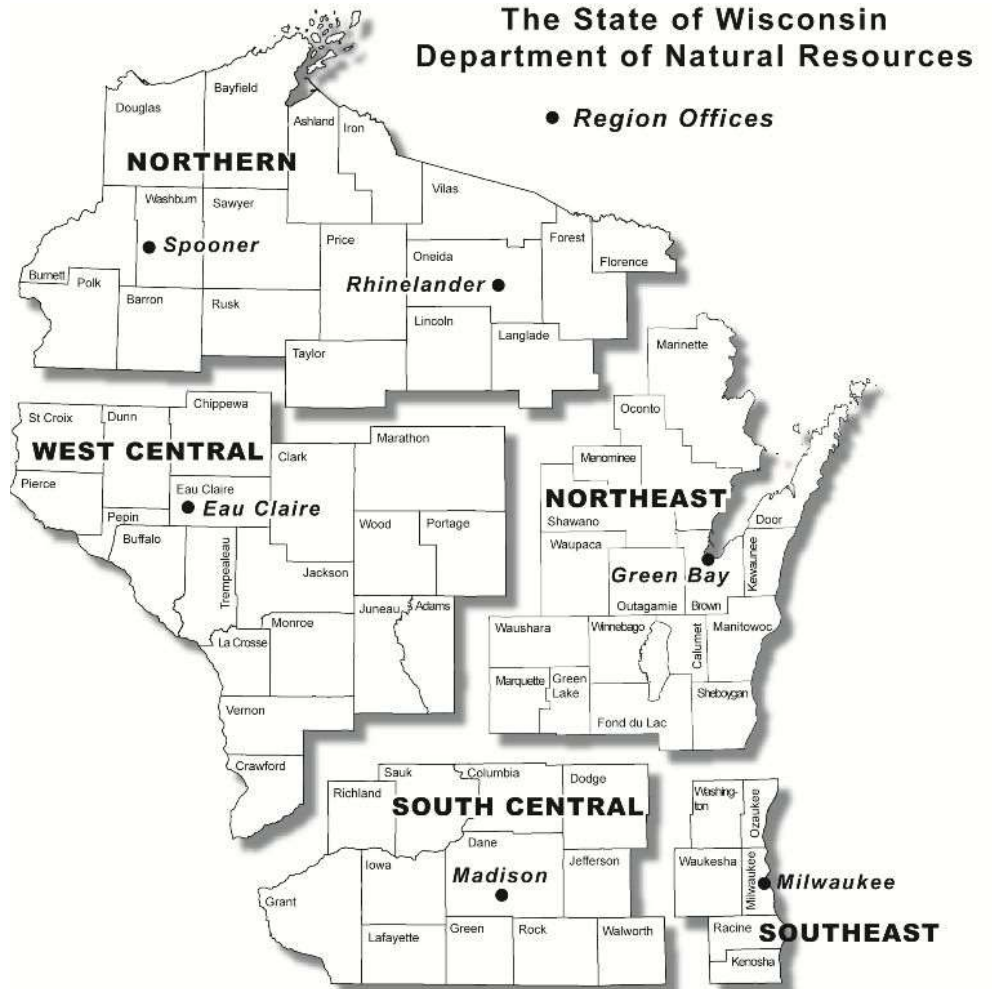
Attn: RR Program Assistant
 Department of Natural Resources
 3911 Fish Hatchery Road
 Fitchburg WI 53711

DNR SOUTHEAST REGION

Attn: RR Program Assistant
 Department of Natural Resources
 2300 North Martin Luther King Drive
 Milwaukee WI 53212

DNR WEST CENTRAL REGION

Attn: RR Program Assistant
 Department of Natural Resources
 1300 Clairemont Ave.
 Eau Claire WI 54702



DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer		Comments	
Fee Enclosed? <input type="radio"/> Yes <input type="radio"/> No	Fee Amount \$	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

Ms. Alyssa Sellwood, P.E.
Complex Sites Project Manager, Remediation and Redevelopment Program
State of Wisconsin Department of Natural Resources
101 South Webster Street
Box 7921
Madison, WI 53707-7921

Arcadis U.S., Inc.
126 North Jefferson
Street
Suite 400
Milwaukee
Wisconsin 53202
Phone: 414 276 7742
Fax: 414 276 7603
www.arcadis.com

Date: May 20, 2024
BRRTS No. 02-38-581955 (Tyco Fire Products LP)
BRRTS No. 02-38-583852 (ChemDesign Products, Inc.)
Our Ref: 30168592
Subject: May 2024 Additional Site Investigation Work Plan, Tyco Stanton
Street (PFAS), 1 Stanton Street, Marinette, Wisconsin

Dear Ms. Sellwood,

On behalf of Tyco Fire Products LP (Tyco), Arcadis U.S., Inc. (Arcadis) prepared this *Additional Site Investigation Work Plan* (work plan) for continued investigations relating to the presence of per- and poly-fluorinated alkyl substances (PFAS) at and near the Tyco Stanton Street Facility, located at 1 Stanton Street in Marinette, Wisconsin (the Site; **Figure 1**). This work plan has been prepared concurrently with Tyco's response to the comments received from Wisconsin Department of Natural Resources (WDNR) in a March 21, 2024 letter (WDNR 2024), relating to the February 2024 Site Investigation Status Report (Arcadis, 2024a). The response-to-comment letter is included as **Attachment 1**.

This work plan comprises five principal tasks:

- Installation and sampling of a new monitoring well near a previously completed vertical aquifer profile boring, VAP-66, to refine delineation of the upgradient extent of site-related PFAS in shallow overburden groundwater.
- Installation and sampling of two monitoring wells on the eastern side of the 6th Street Slip, to demonstrate side-gradient delineation of site-related PFAS in overburden groundwater.
- Installation of a new groundwater extraction well near existing well MW003S for future integration with the Site's groundwater hydraulic containment system.
- Completion of groundwater gauging and sampling at approximately 41 monitoring wells to assess current groundwater conditions.
- Completion of two additional rounds of surface water samples in the Menominee River at eight previously sampled locations to confirm that PFAS concentrations remain below Wisconsin surface water standards.

Locations of proposed wells and surface water samples are shown on **Figure 2**. Proposed groundwater sampling locations are shown in **Figure 3**. The work will be conducted in accordance with the requirements of Chapter Natural Resources (NR) 716 of the Wisconsin Administrative Code (Wis. Adm. Code), consistent with the standard operating procedures provided in the Quality Assurance Project Plan (QAPP Arcadis 2024b). Additional

site and project background is available in the February 2024 Site Investigation Status Report (Arcadis 2024a) and the March 2022 Site Investigation Status Report (Arcadis 2022).

Groundwater Investigation Scope of Work

Access and Permitting

Investigations are planned on Tyco property, private properties, City-of-Marinette property and rights-of-way. Prior to mobilization, permission for access to investigation locations will be obtained from the appropriate parties (i.e., City of Marinette and additional property owners).

Utility Clearance

Prior to drill-rig mobilization, Wisconsin One Call (i.e., Diggers Hotline) will be contacted. In accordance with Arcadis standard policies, a minimum of three lines of evidence will be utilized for locating subsurface utilities. The anticipated lines of evidence include (1) contracting a private utility locating service, (2) conducting an inspection of each location, and (3) reviewing available utility drawings and/or interviewing knowledgeable personnel. An air knife or hand auger may also be used to clear boring areas, if needed.

Monitoring Well Installation and Development

Three overburden monitoring wells will be installed at two locations (**Figure 2**):

- MW130S, near the location of previously completed boring VAP-66, with the planned screen interval targeting shallow groundwater near the water table.
- MW131S and MW131M, a two-well cluster located on the eastern site of the 6th Street Slip, with planned screen intervals targeting shallow groundwater near the water table and the intermediate zone in the overburden above the till unit.

The new monitoring wells will be drilled and installed by a Wisconsin-licensed driller in accordance with NR 141 guidelines. Anticipated well construction details are as follows:

- Shallow “S” Wells (MW130S and MW131S): a 10-foot-long by 2-inch-diameter schedule 40 polyvinyl chloride (PVC) 0.010-inch slotted screen from 5 to 15 ft bgs. Filter pack sand emplaced to ½ foot above the screen, followed by ½ foot of fine “choker” sand and then an annular space seal of bentonite granules.
- Intermediate “M” Well (MW131M): a 5-foot-long by 2-inch-diameter schedule 40 PVC 0.010-inch slotted screen above the top of till (estimated depth 30 to 35 ft bgs). Filter pack sand emplaced to 2 foot above the screen, followed by 2 foot of fine “choker” sand, 5 feet of bentonite chips, and an annular space seal of cement grout or bentonite chips, depending on final well depth.

Preliminary well screen depths are based on existing boring log for VAP-66 and MW022M, included in **Attachment B**. Final well screen intervals may be adjusted based on observed geology.

After completion, the monitoring wells will be developed using a combination of surging and pumping to remove fine sediment from the well and filter pack and improve hydraulic communication between the well and the formation. Static and pumping water-level measurements, purge rates, and purge volumes will be recorded. Groundwater field parameters (pH, specific conductivity, temperature, and turbidity) will be measured periodically.

Well development will continue until up to 10 well volumes have been purged or the turbidity has stabilized below 50 nephelometric turbidity units.

Extraction Well Installation and Development

One overburden groundwater extraction well (EW-15) will be installed near the existing MW003 well cluster, on the Site's northern property boundary outside the hydraulic barrier wall (**Figure 2**). The well is planned as a potential expansion of the existing hydraulic containment system, which includes several vertical extraction wells, two horizontal extraction wells and a groundwater treatment system located within the hydraulic barrier wall. The purpose of the new extraction well is to capture groundwater containing site-related constituents, including PFAS, potentially migrating toward the Menominee River immediately outside the barrier wall.

The well design is based on the existing geologic log for well MW003M (included in **Attachment B**). Preliminary well design will include a 15-foot long by 6-inch diameter stainless steel 0.010-inch slotted wire-wrapped screen from 6 to 21 feet bgs. The well will have a 3-foot PVC sump and a PVC riser. The surface completion will be left with a temporary stickup cover, allowing for expected modifications for deployment of a permanent pump and connections to the existing treatment system.

After construction, the well will be developed by the driller using standard development techniques (e.g., double surge block with air lift pumping). Well development will include specific capacity tests to assess well performance and assess development effectiveness. Development will continue until testing shows that further development will not improve well yield.

Details related to hydraulic testing and integration of the well into the Site's containment system will be provided as part of ongoing RCRA activities and associated reporting being performed under EPA and WDNR oversight.

Groundwater Monitoring

After completion and development of the new monitoring well near VAP-66, Arcadis will complete a monitoring event comprising 41 monitoring wells, including:

- The new monitoring wells MW130S, MW131S and MW131M.
- 38 existing site monitoring wells.

The proposed monitoring wells to be sampled are identified in **Table 2** and on **Figure 2**.

Prior to sampling, a comprehensive round of water-level gauging will be completed with an electronic water-level meter. Sampling will be conducted following low-flow sampling procedures in accordance with the QAPP (Arcadis 2024b). Sampling will be performed using a peristaltic pump with dedicated down-well disposable tubing, and a flow-through multi-parameter field meter to monitor temperature, dissolved oxygen, pH, specific conductivity, oxidation-reduction potential, and turbidity. While sampling, water levels will be recorded with an electronic water-level meter, and purge rate will be estimated using a graduated vessel. Samples will be collected for PFAS analysis following the QAPP (Arcadis 2024b) and as described in the Quality Assurance and Quality Control (QA/QC) section below.

Surveying

The newly completed wells will be surveyed by a Wisconsin-licensed surveyor. Surveyed elevations will be referenced to the North American Vertical Datum of 1988 (NAVD 88) and surveyed horizontal coordinates will be

referenced to the State Plane North American Datum of 1983 (NAD 83) – Wisconsin Central (4802) Zone. Locations will be surveyed to the nearest 0.01 foot (horizontal and vertical).

Investigation Derived Waste Management

Purge water, soil, and drilling fluid generated during investigation activities will be containerized (e.g., in 55-gallon steel drums, poly tanks, and/or lined roll-off boxes) and staged in a centralized and secured location on Tyco property, pending characterization and disposal at approved facilities.

Surface Water Sampling

Two seasonal surface water sampling events will be conducted during spring and fall to confirm that PFOS and PFOA remain below the current Wisconsin surface water standards. During each event, samples will be collected from eight locations (**Figure 2**) within the Menominee River as summarized below:

- Two locations upstream of the Site
- Four locations adjacent to the Site
- Two locations downstream of the Site

One to two surface water samples will be collected at each location depending on river depth. If the depth is 10 feet or greater, one shallow sample will be collected at 0.2 (20 percent) of the water depth, and a second deeper sample will be collected at 0.8 (80 percent) of the water depth. If the water depth is less than 10 feet, only one sample will be collected at 0.5 (50 percent) of the water depth. At each sampling location, samples will be collected at the bow or side of the boat using a stainless-steel Kemmerer water sampler. All surface water samples will be analyzed for PFAS and total suspended solids (TSS) following the QAPP (Arcadis 2024b) and as described in the QA/QC section below.

At each sample depth, surface water quality field parameters, including pH, specific conductivity, and temperature, will be measured. At each sample location, additional sample volume will be collected, a multi-parameter water quality meter will be allowed to stabilize, and the parameter results will be recorded.

Quality Assurance and Quality Control

Samples will be collected, handled, and shipped in accordance with the QA/QC process described in the QAPP (Arcadis 2024b). QA/QC samples will include matrix spike/matrix spike duplicates, field duplicates, field reagent blanks, and equipment rinsate blanks as listed in the table below.

Laboratory Methods and QA/QC Frequency

Matrix	Parameter	Laboratory Method	Matrix Spike/ Matrix Spike Duplicate Frequency	Field Duplicate Frequency	Field Reagent Blank Frequency	Equipment Rinsate Blank Frequency
Groundwater and Surface Water	PFAS	Modified USEPA 537 (36 compounds)	1/20	1/10	1/day	1/20; min. 1/day
Surface Water	TSS	USEPA 160.2	None	1/10	None	None

Ms. Alyssa Sellwood, P.E.
Wisconsin Department of Natural Resources
May 20, 2024

Anticipated Schedule

The anticipated schedule for field investigation and reporting is as follows:

- Monitoring well and extraction well installations: Fall 2024
- Groundwater monitoring: Summer/Fall 2024
- Surface water investigation: Fall 2024 and Spring 2025
- Reporting: A Site Investigation Status Report will be provided to WDNR approximately 60 days after receiving all analytical data.

In the event the schedule is affected by weather, access, or other factors, WDNR will be provided with an updated schedule for the activities.

Sincerely,
Arcadis U.S., Inc.



Scott Potter
Project Lead / Technical Expert



Matthew Coleman
Project Scientist



Tim Molitor, PG
Project Geologist

CC. D. Nelson, Tyco
S. Wahl, Tyco
H. Ziegelbauer, Jacobs
P. Milionis, Arcadis

Enclosures

Table 1 Groundwater Monitoring Locations

Figure 1 Site Location

Figure 2 Proposed New Well and Surface Water Sampling Locations

Figure 3 Proposed Groundwater Monitoring Locations

Attachment 1 Response to WDNR Comments on the February 2024 Site Investigation Status Report

Attachment 2 Select Geologic Logs

References

Arcadis. 2022. Site Investigation Status Report. Tyco Stanton Street Facility, Marinette, Wisconsin, BRRTS No. 02-38-581955 (Tyco Fire Products LP) & 02-38-583852 (ChemDesign Products, Inc.). March 22.

Arcadis. 2024a. Site Investigation Status Report, Tyco Stanton Street Facility, Marinette, Wisconsin, BRRTS No. 02-38-581955 (Tyco Fire Products LP) & 02-38-583852 (ChemDesign Products, Inc.). February 16.

Ms. Alyssa Sellwood, P.E.
Wisconsin Department of Natural Resources
May 20, 2024

Arcadis. 2024b. Quality Assurance Project Plan Addendum, Tyco Per- and Polyfluoroalkyl Substances (PFAS) Site Investigation and Private Well Sampling Activities, Marinette, Wisconsin. March.

WDNR. 2024. Response to Site Investigation Status Report, Tyco Stanton Street (PFAS), 1 Stanton Street, Marinette, WI, BRRTS #02-38-581955; ChemDesign (PFAS), 2 Stanton Street, Marinette WI, BRRTS #02-38-583852. March 21.

Table

Table 1
Monitoring Well Construction and Proposed Sampling Plan
Additional Site Investigation Work Plan
Tyco Stanton Street Facility
Marinette, Wisconsin

Well ID	Area	Northing	Easting	Top of Casing Elevation (NAVD 88)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Additional SIWP Proposed PFAS Sampling Plan
MW001S	SV	469520.20	2585017.04	587.19	5.5	15.5	
MW001M	SV	469506.81	2585016.33	587.09	25	30	
MW002S-R	SV	469546.27	2585234.66	590.27	5	15	
MW002M-R	SV	469540.82	2585231.20	590.26	25	30	
MW003S	Outside - West	470584.24	2584070.46	586.60	10	20	X
MW003M	Outside - West	470588.48	2584074.12	587.44	30	35	X
MW003D	Outside - West	470591.90	2584078.40	587.50	45	50	X
MW004S	MP	469258.85	2585159.14	588.73	3.7	13.7	
MW004M	MP	469250.31	2585153.31	587.15	22.6	27.6	
MW008M	MP	470173.57	2584677.82	583.12	25	30	
MW009S	MP	470254.66	2583951.90	583.11	5	15	
MW009M	MP	470256.24	2583952.05	583.06	25	30	
MW011S	MP	469678.42	2584472.60	586.59	10	20	
MW011M	MP	469673.62	2584471.65	586.94	30	35	
MW012S	MP	469555.59	2584859.68	588.05	10	20	
MW012M	MP	469555.48	2584859.42	587.55	30	35	
MW013S-R	Outside - Upgradient	469102.59	2583254.96	589.35	9	19	X
MW013M-R	Outside - Upgradient	469092.91	2583271.22	589.26	30	35	X
MW013D-R	Outside - Upgradient	469097.89	2583262.63	589.60	41	46	X
MW019S	Outside - Wetlands	469195.56	2585718.10	584.47	NA	NA	
MW021S-R	Outside - Wetlands	469057.15	2585288.15	586.37	6	16	X
MW021M	Outside - Wetlands	469059.16	2585281.14	587.06	30	35	X
MW022S	Outside - Wetlands	468779.28	2585881.62	584.59	10	20	X
MW022M	Outside - Wetlands	468780.34	2585875.25	584.53	30	35	X
MW031S	SV	469713.26	2584980.38	588.87	4	14	
MW031M	SV	469708.48	2584978.06	587.86	25	30	
MW032S	MP	469719.86	2584967.17	588.47	7	17	
MW032M	MP	469717.16	2584963.75	588.22	28	33	
MW033S	MP	469484.40	2585029.17	587.31	7.3	17.3	
MW033M	MP	469486.84	2585023.06	587.25	27.8	32.8	
MW034S	8SS	469532.38	2585381.33	588.17	5	15	
MW034M	8SS	469536.92	2585383.12	588.21	26	31	
MW035S	WA	469531.61	2585384.97	587.64	5	15	
MW035M	WA	469535.36	2585386.78	587.70	26	31	
MW036S	8SS	469295.47	2585307.11	588.25	4	14	
MW036M	8SS	469299.81	2585308.13	588.18	25	30	
MW037S	WA	469289.83	2585312.19	587.06	4	14	
MW037M	WA	469296.12	2585314.11	587.03	25	30	
MW038S	8SS	469136.67	2585178.34	587.82	4	14	
MW038M	8SS	469132.30	2585177.01	586.14	25	30	
MW039S	MP	469137.67	2585172.21	586.19	7	17	
MW039M	MP	469131.80	2585171.45	586.16	28	33	
MW040S	Outside - West	470087.19	2583738.89	582.58	5	15	X
MW040M-R	Outside - West	470097.58	2583744.46	582.57	20	25	X
MW040D	Outside - West	470107.78	2583749.69	582.71	38	43	
MW041S	MP	470428.42	2584572.83	583.11	5	15	

Table 1
Monitoring Well Construction and Proposed Sampling Plan
Additional Site Investigation Work Plan
Tyco Stanton Street Facility
Marinette, Wisconsin

Well ID	Area	Northing	Easting	Top of Casing Elevation (NAVD 88)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Additional SIWP Proposed PFAS Sampling Plan
MW041M	MP	470423.84	2584570.41	583.12	25	30	
MW042S	MP	469837.55	2584158.55	587.06	10	20	
MW042M	MP	469841.97	2584160.73	587.17	30	35	
MW042D	MP	469846.56	2584162.15	587.24	50	55	X
MW044S-R	MP	469797.75	2584645.82	584.08	5	15	
MW044M-R	MP	469803.70	2584648.37	583.85	15	20	
MW045S	MP	470508.99	2584498.46	582.84	5	15	
MW045M	MP	470510.85	2584493.61	582.86	25	30	
MW046S	WA	469475.71	2585477.85	584.17	7	17	
MW046M	WA	469470.90	2585485.99	584.78	27.6	32.6	
MW046D	WA	469473.31	2585481.92	584.96	53.5	58.5	X
MW047S	WA	469327.11	2585657.95	583.97	10	20	
MW047M	WA	469325.03	2585649.50	584.19	30	35	
MW047D	WA	469320.91	2585655.22	584.38	53	58	
MW048S	Outside - Wetlands	469177.00	2586030.00	584.20	10	20	
MW048M	Outside - Wetlands	469173.03	2586035.75	584.47	30	35	
MW049S	Outside - Wetlands	468897.80	2585623.98	584.51	10	20	
MW049M	Outside - Wetlands	468895.32	2585632.22	584.13	30	35	
MW050S	MP	469359.20	2584808.00	588.86	5	15	
MW050M	MP	469359.20	2584808.00	589.10	25	30	
MW052S	MP	469604.11	2584819.43	584.90	5	15	
MW053S	MP	469644.65	2584752.42	584.54	10	20	
MW054S	MP	469613.34	2584617.41	587.66	10	20	
MW059S	MP	469575.77	2584607.88	588.35	5	15	
MW059M	MP	469578.79	2584609.65	587.96	20	25	
MW060S	MP	469528.87	2584638.90	587.51	5	15	
MW060M	MP	469528.13	2584636.73	587.62	20	25	
MW061S	MP	469508.80	2584683.92	587.17	5	15	
MW061M	MP	469510.24	2584681.15	587.31	20	25	
MW062S	MP	469546.87	2584516.03	589.54	5	15	
MW062M	MP	469544.45	2584517.88	589.36	25	30	
MW063S	MP	469494.61	2584570.01	589.47	5	15	
MW063M	MP	469497.59	2584568.34	589.46	25	30	
MW064S	MP	469426.82	2584603.93	588.59	7.7	12.7	
MW064M	MP	469429.19	2584605.81	588.07	17.4	22.4	
MW064D	MP	469426.29	2584598.38	588.83	51.7	56.7	X
MW066S	MP	469468.31	2584719.26	584.50	5	15	
MW066M	MP	469469.60	2584717.46	587.12	20	25	
MW067S	MP	470569.49	2584274.15	585.50	NA	NA	
MW068S	MP	470207.53	2584825.76	586.34	NA	NA	
MW100S	Outside - Wetlands	469234.06	2585775.46	584.52	8	18	X
MW100M	Outside - Wetlands	469235.15	2585781.17	584.19	28	33	X
MW100D	Outside - Wetlands	469232.12	2585769.83	584.12	52	57	X
MW101S	WA	469110.49	2585320.46	585.45	8.1	18.1	
MW101M	WA	469113.60	2585320.48	585.40	28.1	33.1	
MW102S	Outside - South	469386.04	2584523.00	588.80	7.7	17.7	X

Table 1
Monitoring Well Construction and Proposed Sampling Plan
Additional Site Investigation Work Plan
Tyco Stanton Street Facility
Marinette, Wisconsin

Well ID	Area	Northing	Easting	Top of Casing Elevation (NAVD 88)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Additional SIWP Proposed PFAS Sampling Plan
MW102M	Outside - South	469384.95	2584528.43	588.52	27.7	32.7	X
MW102D	Outside - South	469381.82	2584532.14	588.58	49.8	54.8	X
MW103S	MP	469694.25	2584054.18	588.82	8	18	
MW103M	MP	469697.72	2584050.12	589.00	28	33	
MW104S	Outside - South	469663.22	2584030.25	589.27	8	18	X
MW104M	Outside - South	469660.78	2584034.50	589.39	28	33	X
MW105S-R	MP	470077.09	2583770.81	582.88	5	15	
MW105M-R	MP	470080.87	2583772.74	582.86	25	30	
MW105D-R	MP	470085.15	2583775.12	582.89	37	42	X
MW106S	MP	470522.78	2584071.55	585.72	7	17	
MW106M	MP	470519.31	2584073.66	585.75	27	32	
MW106D	MP	470524.15	2584075.11	585.70	42	47	
MW107S	MP	470360.25	2584936.34	585.54	5	15	
MW107M	MP	470341.78	2584884.23	582.47	15	20	
MW107D	MP	470337.84	2584881.83	582.65	46	51	X
MW108S	MP	470007.10	2584862.10	586.65	8	18	
MW108M	MP	470009.34	2584865.73	586.50	28	33	
MW108D	MP	470011.85	2584869.08	586.43	48	53	
MW109S	WA	469547.30	2585556.76	584.15	7.6	17.6	
MW109M	WA	469542.17	2585558.29	584.32	27.1	32.1	
MW109D	WA	469536.91	2585559.08	584.73	48.3	53.3	
MW113S	SV	469400.29	2585228.67	590.26	14	19	
MW113M	SV	469402.47	2585224.84	590.22	32	43	
MW114S	MP	469752.83	2584601.13	583.90	13	18	
MW114M	MP	469751.24	2584603.88	583.89	30	35	
MW115S	SV	469762.47	2585109.44	588.94	13	23	
MW116S	SV	469707.72	2585234.55	589.82	13	18	
MW117S	MP	470633.97	2584304.02	585.17	5	15	
MW117M	MP	470635.40	2584299.89	584.93	19	24	
MW117D	MP	470636.55	2584295.56	585.16	45	50	
MW118S	MP	470465.39	2584808.38	586.06	4	14	
MW118M	MP	470466.94	2584803.95	585.80	17	22	
MW118D-R	MP	470462.07	2584806.98	585.62	47	52	X
MW119D	SV	469760.82	2585114.10	588.72	50	60	
MW120S	8SS	469737.87	2585389.29	588.51	5	15	
MW120M	8SS	469736.92	2585384.59	588.57	25	30	
MW120D	8SS	469735.92	2585379.62	588.50	51	56	
MW121S	MP	470581.86	2584464.30	585.68	5	15	
MW122S	MP	470515.59	2584652.53	585.59	5	15	
MW123S	MP	470172.39	2584921.81	586.11	5	15	
MW124S	MP	469893.61	2584986.20	585.52	5	15	
MW125S-20	Outside - Upgradient	468124.88	2582657.99	596.16	10	20	X
MW125M-35	Outside - Upgradient	468123.80	2582646.78	596.26	30	35	X
MW125D-60	Outside - Upgradient	468123.10	2582651.96	596.03	50	60	X
MW126S-20	Outside - Sidegradient	469387.07	2581781.29	598.06	10	20	X
MW126D-40	Outside - Sidegradient	469386.52	2581775.53	597.79	30	40	X

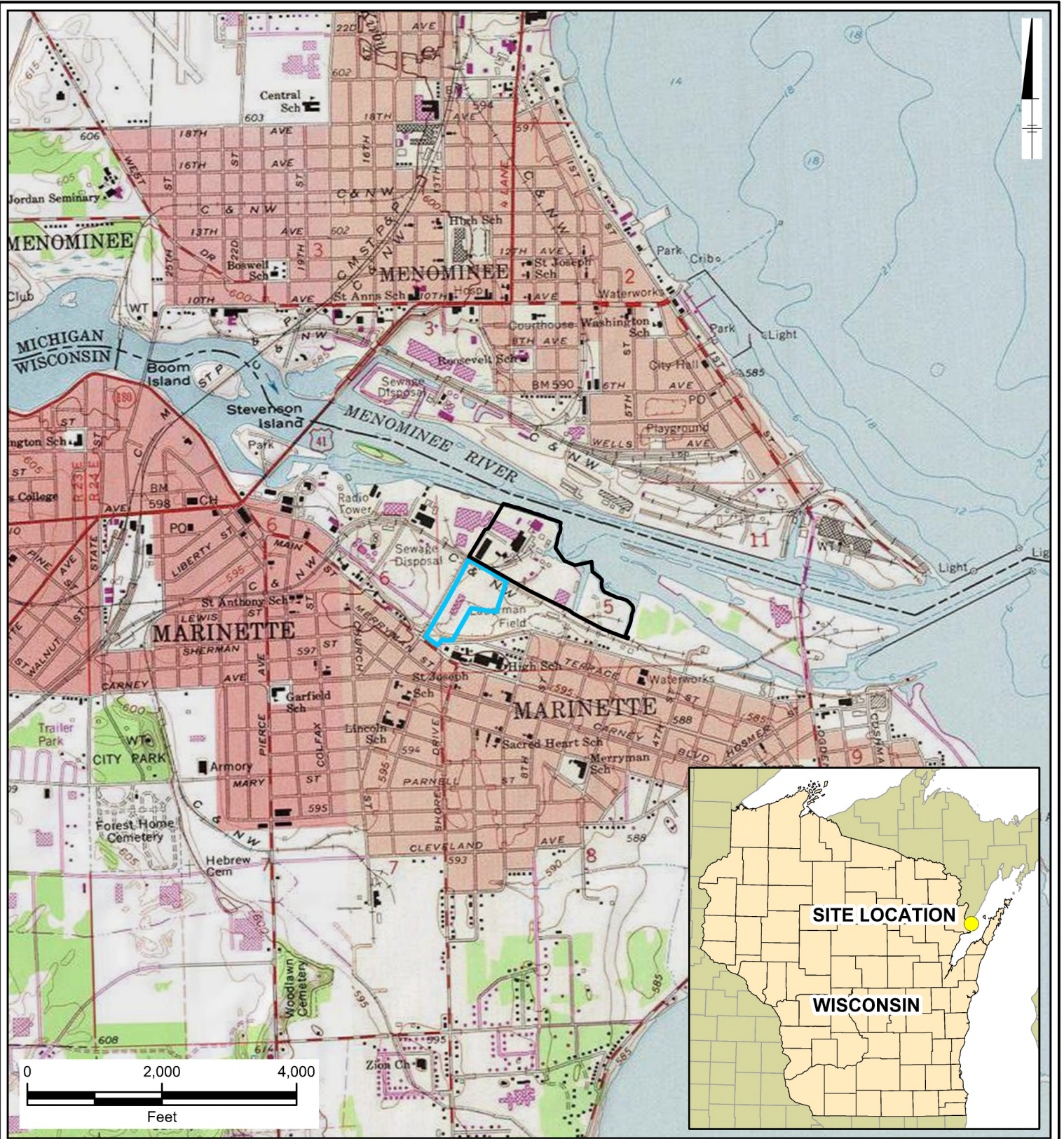
Table 1
Monitoring Well Construction and Proposed Sampling Plan
Additional Site Investigation Work Plan
Tyco Stanton Street Facility
Marinette, Wisconsin

Well ID	Area	Northing	Easting	Top of Casing Elevation (NAVD 88)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Additional SIWP Proposed PFAS Sampling Plan
MW128S-17	Outside - Upgradient	468745.59	2584546.06	595.14	7	17	X
MW128M-30	Outside - Upgradient	468739.58	2584544.32	595.16	25	30	X
MW129S-21	Outside - Upgradient	468500.08	2585920.59	585.33	11	21	X
MW129M-45	Outside - Upgradient	468493.99	2585918.89	585.57	40	45	X
PZ-28-14	Outside - Upgradient	467125.0	2583162.7	594.76	9	14	X
PZ-28-54	Outside - Upgradient	467123.2	2583168.6	594.81	49	54	X
PZ-28-75	Outside - Upgradient	467127.73	2583152.31	594.29	65	75	X
MW130S (Proposed)	Outside - Upgradient (Near VAP-66)	TBD	TBD	TBD	5	15	X
MW131S (Proposed)	Outside - Sidegradient (Near 6th St Slip)	TBD	TBD	TBD	5	15	X
MW131M (Proposed)	Outside - Sidegradient (Near 6th St Slip)	TBD	TBD	TBD	30	35	X



Notes:

1. Bolded monitoring wells (also identified as being located "Outside") are outside of the hydraulic barrier wall surrounding the Stanton Street Facility.
2. Vertical Datum: North American Vertical Datum (NAVD) 1988
3. Acronyms and Abbreviations:
 - 8SS = former 8th Street Slip
 - bgs = below ground surface
 - MP = Main Plant
 - SIWP = Site Investigation Work Plan
 - SV = former Salt Vault
 - PFAS = per-and polyfluoroalkyl substances
 - WA = Wetlands Area

Figures



LEGEND:

-  APPROXIMATE SITE PROPERTY BOUNDARY
-  FORMER TYCO ADMINISTRATIVE BUILDING/PROPERTY (SOLD)

NOTES:

1. TOPOGRAPHIC MAP SOURCE: USA TOPO MAPS: COPYRIGHT:© 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED, ACCESSED MAY 2024.

TYCO STANTON STREET FACILITY
 MARINETTE, WISCONSIN
 MAY 2024 ADDITIONAL SITE INVESTIGATION WORK PLAN

SITE LOCATION





LEGEND:

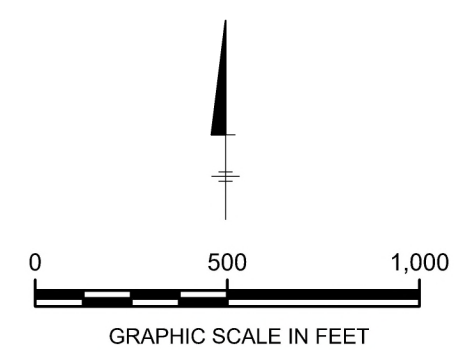
- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- APPROXIMATE FORMER FIRE TRAINING AREA
- FORMER TYCO ADMINISTRATIVE BUILDING/PROPERTY (SOLD)
- STANTON STREET HYDRAULIC BARRIER WALL
- ROAD
- STATE BOUNDARY
- + OVERBURDEN MONITORING WELL
- + BEDROCK MONITORING WELL
- + FORMER MARINETTE MGP SITE MONITORING WELL OR PIEZOMETER
- + FINCANTIERI MARINETTE MARINE MONITORING WELL
- BORING LOCATION
- ▲ SURFACE WATER SAMPLE

PROPOSED INVESTIGATION LOCATIONS

- ⊕ POTENTIAL EXTRACTION WELL
- PROPOSED MONITORING WELL

NOTES:

1. MGP = MANUFACTURED GAS PLANT
2. FORMER MARINETTE MGP MONITORING WELL LOCATIONS DATA SOURCE: WISCONSIN PUBLIC SERVICE CORPORATION, NOVEMBER 2022 MONTHLY PROGRESS REPORT, MARINETTE FORMER MANUFACTURED GAS PLANT, MARINETTE, WISCONSIN, DECEMBER 14, 2022.
3. FINCANTIERI MARINETTE MARINE MONITORING WELL LOCATIONS DATA SOURCE: AECOM, 2022 ENVIRONMENTAL SITE INVESTIGATION REPORT, DECEMBER 1, 2023 (BRRTS NO. 02-38-587281).
4. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
5. SOURCE: 30 CM RESOLUTION OF AERIAL IMAGERY FROM 05/17/2023 AND 06/07/2023 WAS PURCHASED FROM APOLLO MAPPING LLC ON 02/01/2024.



TYCO STANTON STREET FACILITY
 MARINETTE, WISCONSIN
 MAY 2024 ADDITIONAL SITE INVESTIGATION WORK PLAN

INVESTIGATION LOCATIONS



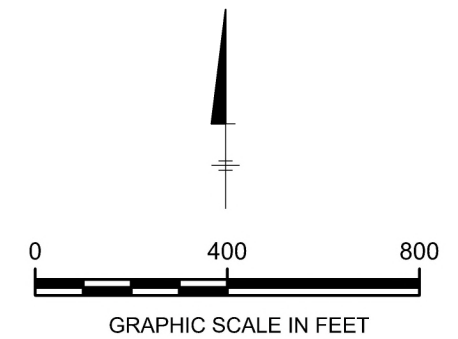
LEGEND:

- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- FORMER TYCO ADMINISTRATIVE BUILDING/PROPERTY (SOLD)
- STANTON STREET HYDRAULIC BARRIER WALL
- ROAD
- ◆ OVERBURDEN MONITORING WELL
- ◆ BEDROCK MONITORING WELL

PROPOSED INVESTIGATION LOCATIONS

- PROPOSED MONITORING WELL
- MW106M** PROPOSED GROUNDWATER MONITORING EVENT LOCATION

NOTES:
 1. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
 2. AERIAL IMAGERY SOURCE: 30 CM RESOLUTION OF AERIAL IMAGERY FROM 05/17/2023 AND 06/07/2023 WAS PURCHASED FROM APOLLO MAPPING LLC ON 02/01/2024.



TYCO STANTON STREET FACILITY
 MARINETTE, WISCONSIN
 MAY 2024 ADDITIONAL SITE INVESTIGATION WORK PLAN

PROPOSED GROUNDWATER SAMPLING LOCATIONS

Attachment 1

Response to WDNR Comments on the February 2024 Site Investigation Status Report

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

Arcadis U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee
Wisconsin 53202
Phone: 414 276 7742 276
7742
Fax: 414 276 7603

Date: May 20, 2024

Our Ref: 30168592

Subject: Response to March 21, 2024 Comments - Response to *Site Investigation Status Report*, Tyco Stanton Street (PFAS), 1 Stanton Street, Marinette, WI, BRRTS #02-38-581955; ChemDesign (PFAS), 2 Stanton Street, Marinette, WI, BRRTS #02-38-583852.

Dear Ms. Sellwood,

On behalf of Tyco Fire Products LP (Tyco)¹, Arcadis U.S., Inc. (Arcadis) has prepared these responses to March 21, 2024 comments made by the Wisconsin Department of Natural Resources (WDNR) on the February 16, 2024 Site Investigation Status Report (SISR) relating to per- and polyfluoroalkyl substances (PFAS) associated with the Tyco Stanton Street Facility located at 1 and 2 Stanton Street in Marinette, Wisconsin. As requested in the March 21 WDNR comment letter, Tyco has also prepared a work plan for additional investigations stemming from the comments. The *2024 Additional Site Investigation Work Plan* (2024 Work Plan) is being submitted concurrently with this letter.

WDNR Comments and Tyco Responses

Recommendation #1: *Present isoconcentration contours for 6:2 FTS (down to concentration of 10 ppt or similar) to help illustrate how the extent of PFAS contamination from the Stanton Site was delineated or differentiated from upgradient sources.*

The presence of 6:2 FTS can help to determine the extent of PFAS contamination attributable to the Stanton Site; 6:2 FTS is the PFAS with the highest concentration in shallow groundwater inside the barrier wall on the property, it is typically associated with AFFF and not with other PFAS sources and it is known to degrade to short-chained perfluorocarboxylic acids in aerobic environment. Thus, detections of 6:2 FTS in the unconsolidated aquifer around the barrier wall are most likely attributable to discharges from the Stanton Site and not to migration of PFAS from other upgradient sources.

¹ Reports associated with this Site are submitted to WDNR on behalf of Tyco Fire Products LP. The WDNR continues to address correspondence to both Tyco and Johnson Controls, Inc. ("JCI"); however, JCI is not an owner or operator of this Site and is not an appropriate "Responsible Party" under applicable law.

Tyco Response to Recommendation #1:

Per WDNR request, a figure illustrating 6:2 FTS concentrations at Tyco's monitoring wells, recent vertical aquifer profiling (VAP) locations, and Fincantieri Marinette Marine's monitoring wells is included as an attachment to this letter (**Figure 1**). The 6:2 FTS distribution shown on the figures is consistent with the patterns described in the SISR for PFOA and PFOS, which group into three zones:

- PFAS associated with the Site (including contributions from both Tyco and ChemDesign) located within and immediately outside of the barrier, identified by concentrations of PFOA and 6:2 FTS.
- A dispersed lower concentration PFAS plume dominated by short-chain carboxylic acids and sporadic low concentration of 6:2 FTS migrating from the southwest, upgradient of the Stanton Street PFAS zone.
- An independent source of PFAS upgradient and north of the Stanton Street Site's current and former operations areas. This source area has higher concentrations and a different mixture of PFAS (including 6:2 FTS) at levels greater than are observed adjacent groundwater upgradient and cross-gradient in the dispersed plume.

While 6:2 FTS is an acknowledged component of site-related PFAS present in groundwater both inside and immediately outside the site's hydraulic barrier, it is incorrect to imply that any detection of the compound is indicative of a site-related source. Like most PFAS, 6:2 FTS is a component of a wide range of products. While present in a number of AFFF formulations (Backe et al. 2013; Place et al. 2012), it has also been used as a substitute for longer chain perfluorinated sulfonic acids in a variety of products including paints, coatings, adhesives, waxes, polishes, industrial cleaning products, and mist suppressant products in chrome plating (Field et al. 2017).

The broader implication in Recommendation #1 that AFFF is uniquely a site-related concern is also incorrect. The adjacent Fincantieri's Marinette Marine acknowledges AFFF use (e.g., for ship fire-suppression systems), and multiple AFFF releases have been reported for the property (BRRTS No. 04-38-584650; BRRTS No. 04-38-588016; BRRTS No. 04-38-581865; BRRTS No. 04-38-582278; BRRTS No. 04-38-580082). The presence of 6:2 FTS in groundwater, or AFFF constituents generally, is therefore useful only as one line-of-evidence to distinguish PFAS sources. Without other corroborating information (e.g., distribution consistent with groundwater flow patterns), source attribution is not reliable.

With respect to degradation, 6:2 FTS is non-volatile (Field et al. 2017) and can transform to form trace levels of PFBA, PFPeA, and PFHxA in aerobic environment, however transformation in the environment could only occur in ideal conditions. The transformation in the environment slows down rapidly with time, gradually stopping due to inhibition as 6:2 FTS forms irreversible complex bonds with organic components (Wang et al. 2011). There is no evidence of the complete transformation of 6:2 FTS to other PFAS compounds in the natural environment.

Recommendation #2a: *Continue to include KKIL parcel in the CSM and include the boundary of this parcel on maps and figures for the Stanton Site. The KKIL parcel was previously part of JCI/Tyco's Stanton facility and is considered part of the Stanton Site. (A figure from JCI/Tyco's 2020 Site Investigation Work Plan that shows the former approximate property boundary is attached.*

The property immediately west of the Stanton Site is also a BRRTS site (BRRTS 02-38-587281 or "Marinette Marine"). In Section 4.5 of the SI Status Report, JCI/Tyco indicates that Marinette Marine is upgradient and side-

Ms. Alyssa Sellwood, P.E.
Wisconsin Department of Natural Resources
May 20, 2024

gradient of the Stanton Site. The DNR disagrees with this conclusion. When the KKIL parcel is included in the CSM, Marinette Marine is downgradient and side-gradient from the Stanton Site. The groundwater flow paths presented in the SI Status Report show that groundwater moves from the Stanton Site onto the Marinette Marine property, and not vice versa.

Tyco Response to Recommendation #2a:

The discussion in Section 4.5 of the SISR does not state that the entire Marinette Marine property is upgradient and side-gradient of the Site. The text clearly restricts that conclusion to the *Southern Area* of the Marinette Marine property, which was the focus area of the 2022 Environmental Site Investigation Report (AECOM 2023). The Southern Area, and in particular the most southern part of the Southern Area where separate PFAS sources appear to be located, is without question upgradient and side-gradient of the current operating areas of the Stanton Street Site, and all areas (current and historical) where PFAS releases associated with the Stanton Street Site may have occurred.

While the KKIL property, which is generally cross-gradient of the Marinette Marine Southern Area, was historically owned by Tyco, no portion of the property was ever used to handle or process AFFF, and sampling results from the parcel (including recent work assessing the early fire training area) show that the parcel contains no PFAS source areas.

The implication of Recommendation #2a that PFAS releases from the Stanton Street Site may be the source of the PFAS plume observed in the Southern Area of the Marinette Marine property has no technical basis. The inference is contrary to groundwater flow patterns and the known locations of the Stanton Street Site's PFAS source areas, which are all downgradient of the areas of highest concentrations on the Southern Area of the Marinette Marine property.

Because there is no evidence of a historical releases on the KKIL property and the property is no longer owned by Tyco, Tyco proposes to maintain the current Site boundary, which aligns with the Stanton Street property boundary. As Recommendation #2 demonstrates, including the parcel within the Site boundary fosters an incorrect impression that the parcel was an operating part of the facility and that it contains sources of PFAS. The KKIL property boundary will be identified on future figures as the Former Tyco Administrative Building/Property (sold).

Recommendation #2b: *Include PFAS detected on the KKIL property in the isoconcentration contours depicting the extent of contamination for the Stanton Site. PFAS was detected in the VAP samples JCI/Tyco collected on the KKIL parcel, and JCI/Tyco has attributed these, in part, to "fill." The PFAS detected in four of the five VAP groundwater samples include 6:2 FTS at concentrations greater than 100 ppt, indicating that the source of the PFAS is the Stanton Site. Even if the PFAS are attributable to "fill," it is most likely that this fill originated from and/or was impacted by discharges at the Stanton Site. As such, the isoconcentration contours used to define the extent of contamination should include the area characterized by vertical aquifer profiles VAP-66 to VAP-69. A permanent NR 141 monitoring well is recommended to better define the extent of contamination in this area.*

Tyco Response to Recommendation #2b:

The isoconcentration contours presented in the SISR were prepared using results only from permanent NR 141-compliant monitoring wells based on previous WDNR instruction that Tyco exclude VAP results from

plume maps. While Tyco remains convinced that VAP sampling is an appropriate tool for site characterization and delineation, mixing VAP and monitoring wells results to create isoconcentration contours at the KKIL property, as WDNR is currently recommending, is inconsistent with previous WDNR instruction.

Technically, monitoring wells and VAP sampling are used to evaluate groundwater for different objectives. For example, the pronounced differences in concentrations between the two VAP sample intervals at each location (both collected in shallow groundwater in the upper 20 ft) prevent direct comparison of groundwater quality against permanent shallow wells, which have longer screens and can be more thoroughly developed to reduce turbidity. Despite these data comparison issues, the VAP results are generally consistent with the observed patterns of PFAS distribution described in the SISR and above in Response to Recommendation #1. The three VAP locations located closest to the Site (i.e., VAP-67, -68 and -69) are within the "halo" of groundwater lying outside the hydraulic barrier wall where PFAS impacts associated with Stanton Street Site are recognized to be present. The presence of higher concentrations of PFOA and 6:2 FTS at those locations is not unexpected. As described in the SSIR, the relatively higher concentration of PFOS in the shallow sample from VAP-69 is anomalous (possibly associated with local fill), but the location falls within the halo of other Site-related PFAS directly outside the wall, and as such does not merit further evaluation.

The one VAP location on KKIL that does not readily fit the existing understanding of PFAS distribution is VAP-66. As recommended, Tyco will install a shallow monitoring well at that location to better assess groundwater quality using the consistent approach of NR 141 monitoring wells. When completed and sampled, Tyco will update isoconcentration contours incorporating the results from this new well.

To reiterate the discussion in Response to Recommendation #1, the presence in groundwater of 6:2 FTS (or AFFF constituents generally) cannot be used to conclude, as the Recommendation does, "*that the source of the PFAS is the Stanton Site.*" The compound 6:2 FTS is used in a variety of products, and other parties may use AFFF. Without other corroborating lines-of-evidence, the detection of any given PFAS compound does not identify its source.

Recommendation #2c: *Use groundwater flow paths and relative PFAS concentrations to refine interpretation of where PFAS from Stanton Site has migrated onto the Marinette Marine property. PFAS were detected in soil and groundwater on the Marinette Marine property. While these PFAS may be attributed in part to discharges that occurred on the Marinette Marine property, the relative concentrations of PFAS detected on Marinette Marine are similar to those detected in samples JCI/Tyco collected on the KKIL parcel. The flow paths for groundwater originating on the Stanton Site (including the KKIL parcel) extend onto the Marinette Marine property and indicate that the Stanton Site can contribute to the PFAS detected in the groundwater on this adjacent parcel.*

Tyco Response to Recommendation #2c:

As described in response to Recommendations #1, #2a and #2b, multiple lines of evidence show that a separate source or sources of PFAS exists within or near the Southern Area of the Marinette Marine property that cannot be explained by migration from the current Tyco property or the KKIL property, which does not contain a PFAS source area. Groundwater flow patterns dictate that this Southern Area PFAS plume must extend to the Menominee River, passing adjacent to the Tyco facility. In the area of the Marinette Marine property directly adjacent to the Stanton Street hydraulic barrier wall, the Southern Area plume will commingle with PFAS associated with the Stanton Street Site that is migrating along the outside

Ms. Alyssa Sellwood, P.E.
Wisconsin Department of Natural Resources
May 20, 2024

the hydraulic barrier to the river. This narrow band of comingled plume, following the property boundary from approximately the railroad easement toward the Menominee River, is the only portion of the Marinette Marine facility where PFAS from the Stanton Street Site are plausibly present.

Recommendation #3: *Sample groundwater east of the 6th Street Slip to define the extent of PFAS contamination to the southeast along the Menominee River. At monitoring well MW022M, 6:2 FTS was detected at 190 ppt, which suggests that the PFAS is from the Stanton Site and is not from migration of an upgradient source. The concentration of PFOA was also higher in monitoring well MW022M (71 ppt) as compared to the next upgradient monitoring well MW129M-45 (41 ppt), further supporting that PFAS from Stanton Site is contributing to the PFAS contamination detected at this location. Additional testing east of monitoring well MW022M may help to confirm if the 6th Street Slip represents the boundary of PFAS from the Stanton Site or if the PFAS contamination extends farther to the southeast.*

Tyco Response to Recommendation #3:

Tyco has previously acknowledged that Site-related PFAS are potentially contributing to the PFAS present in the MW022 well pair, which are located on the Stanton Street property (e.g., see Figure 19 in the 2022 SISR [Arcadis 2022]). Because the 6th Street Slip is an embayment to the Menominee River, a portion of the groundwater flowing around the outside of the hydraulic barrier to the east is interpreted to flow to and discharge into the slip. PFAS detected at the MW022 location is interpreted to reflect a mixture of residual Site-related PFAS migrating outside of the barrier wall comingled with PFAS migrating from upgradient sources.

Tyco will install up to two monitoring wells at one location in the parking lot for the 6th Street Slip (east of the slip) to confirm that the slip is acting as a hydraulic discharge boundary. The wells will be installed and sampled as described in the 2024 Work Plan. Results associated with these monitoring wells will be incorporated into the next Site Investigation Status Report.

Recommendation #4: *Provide a response as to whether the faulty well construction could be contributing to migration of PFAS into the shallow bedrock below the Site? If poor well construction is not a potential pathway for contaminant migration, please describe how and why.*

Tyco Response to Recommendation #4:

As described in the both the SISR (and previously in the 2022 SISR [Arcadis 2022]), the PFAS detected in bedrock at most monitoring locations beneath the Site is consistent in mixture and magnitude with the bedrock plume observed to be migrating northeast from the FTC to the Menominee River. The absence of a significant contribution of PFAS to bedrock from the Stanton Street Site can be deduced from the strikingly different PFAS mixtures found in the bedrock plume and shallow Stanton Street groundwater. Given that contrast (e.g., the relatively much higher concentrations of 6:2 FTS in Site-related PFAS), any significant leakage into bedrock would result in noticeably altered PFAS mixtures in bedrock groundwater beneath the Stanton Street Site relative to the upgradient portions of the FTC bedrock plume.

Though PFAS mixtures detected at most bedrock wells at the Site are consistent with the upgradient FTC bedrock plume, two wells (MW040D and MW108D) exhibit PFAS mixtures that resemble shallower Site-related PFAS. The mixtures in these wells suggests that localized downward migration of PFAS has occurred. Potential vertical migration pathways to those wells may include very slow diffuse downward groundwater migration through the till, historical supply wells that were known to be badly constructed and later abandoned (URS 2001), and/or more recently installed monitoring wells with potentially faulty well construction (EarthTech 2007). Both MW040D and MW108D have very slow recharge rates, which suggests they are not efficiently connected to the fracture network (i.e., the aquifer transport pathways through which the FTC plume is migrating). Wells such as these that are near the bedrock surface² and not connected to the broader fracture network have a greater likelihood of drawing groundwater downward from storage in the overlying till, either along natural pathways (e.g., hairline fractures) or through minor flaws in the well seal. Such sample results are often not representative of mobile groundwater in the bedrock aquifer.

For the 2022 SISR, Tyco had planned to sample two wells (MW105D and MW107D) located near MW040D and MW108D, to evaluate whether the groundwater results at MW040D and MW108D were anomalies localized to the wells or if they are representative of a broader area of groundwater in the bedrock aquifer. At the time of the November 2022 comprehensive groundwater sampling event, MW105D had been abandoned during on-going construction activities and had not yet been replaced; MW107D was buried beneath a gravel pile associated with the construction and could not be located during the sampling event. Since that time, MW105D has been replaced (MW105D-R). Both MW105D-R and MW107D are proposed to be included in the sampling event described in the 2024 Work Plan.

Recommendation #5: *Install another bedrock monitoring well along Carney Boulevard in the area between monitoring well MW125D-60 and Shore Drive. JCI/Tyco's conclusion that the Stanton Site does not have an appreciable contribution to the PFAS in the shallow bedrock, would be bolstered if a bedrock well upgradient of the Stanton Site in this area had concentrations of 6:2 FTS (and PFOA) that were similar to, or greater than, those detected in the shallow bedrock at the Stanton Site.*

Tyco Response to Recommendation #5:

Bedrock drilling completed for the FTC and Stanton Street projects has shown that the shallow bedrock aquifer is highly heterogeneous, that hydraulically active fractures are not present in all places, and that vertical connections between the overburden and bedrock can vary significantly from location to location. Despite these complexities, multiple lines of evidence have already conclusively shown that the FTC bedrock plume migrates along a path to the Menominee River that passes beneath the Stanton Street Site.

As described in the SISR and the 2022 SISR (Arcadis 2022), bedrock wells at the Stanton Street Site exhibit PFAS mixtures in two distinct classes. At most locations, the mixtures are PFOA-dominant, consistent with the FTC bedrock plume migrating from the southeast. Two wells (MW040D and MW108D); however, have mixtures predominated by 6:2 FTS which are interpreted to reflect Stanton Street Site sources. As noted in in Response to Recommendation #4, the results from MW040D and MW108D do not appear to be representative of widespread bedrock groundwater quality and are being evaluated further by

² Bedrock wells MW040D and MW108D are both uncased and have filter packs to within 3 and 4 ft of the rock surface. The top of the fine "choker" sand seal in each well is within 2 and 3 feet of the rock surface, respectively.

Ms. Alyssa Sellwood, P.E.
Wisconsin Department of Natural Resources
May 20, 2024

sampling additional wells on site. The recommended additional well upgradient of the Site would be within approximately two blocks (~750 ft) of existing MW125D and would not add value to that assessment. As a result, Tyco declines to install a well at this location.

Menominee River (Recommendation #6): *The PFAS-impacted groundwater in the unconsolidated aquifer that is not contained by the barrier wall, discharges to the Menominee River. The concentrations of PFAS measured in the surface water in the Menominee River have been below Wisconsin's current surface water standards for PFOA and PFOS. Sediment along the bed of the river has not been tested to evaluate if PFAS is present in this media.*

While the resulting concentrations of PFAS in the surface water of the river remain low, this outcome is primarily because of the dilution that occurs when the groundwater enters this large body of fast-moving surface water. JCI/Tyco should collect sufficient data in its investigation to evaluate the flux of PFAS to the Menominee River and select interim or remedial actions that may be needed to limit the discharge of PFAS from groundwater into the river.

Tyco Response to Recommendation #6:

As described in the 2024 Work Plan, Tyco will collect two additional rounds of surface water samples, one in the fall of 2024 and one in the spring of 2025, at the eight previously sampled locations in the Menominee River. These data are expected to confirm what all previous river sampling events have shown, that the total PFAS discharge to the river is de minimis – that the net contributions from all PFAS sources along the River (including Tyco, Marinette Marine, the Waupaca Foundry, ChemDesign, the City of Marinette wastewater treatment plant and likely others upstream, such as the paper mill) is insufficient to materially affect river PFAS concentrations. Estimating flux from just the Stanton Street Site's sources is not technically plausible given the comingling of multiple sources in groundwater, and the complex hydrodynamics and mixing within surface water.

However, while the Site's existing hydraulic barrier system is highly effective at preventing site-related PFAS discharge to the River, Tyco is planning to supplement the system with a single overburden extraction well. A single overburden extraction well will be installed near the existing MW003 well cluster, located outside of the barrier wall. As described in the 2024 Work Plan, the well is intended to capture groundwater carrying site-related PFAS that has been identified in wells immediately outside of the barrier. Once completed the well will be tied into the existing network of seven extraction wells and groundwater treatment system, located inside the barrier wall.

Soil and Unconsolidated Aquifer Inside Barrier Wall (Recommendation #7):

Sampling results for PFAS in the soil and unconsolidated aquifer inside the barrier wall were presented in JCI/Tyco's and ChemDesign's prior submittals, but further evaluation was not included in this SI Status Report. A complete site investigation will require having sufficient information to estimate the mass of contamination in the source area (Wis. Admin. Code § NR 716.11(3)(d)) and evaluate potential pathways for migration, including drainage improvements (Wis. Admin. Code § NR 716.11(5)(a)).

Ms. Alyssa Sellwood, P.E.
Wisconsin Department of Natural Resources
May 20, 2024

Maps and cross-sections with isoconcentrations to depict the degree of PFAS contamination in the soil and unconsolidated groundwater within the barrier wall are required (Wis. Admin. Code § NR 716.15(4)). These visual aids are needed to ensure that environmental media within the barrier wall is properly managed so as to prevent migration of PFAS to the environment outside of the barrier wall. This includes, but is not limited to, PFAS migration that can occur from excavation and movement of soil, from water discharged from dewatering and other groundwater management activities and from stormwater runoff.

In the case of stormwater, PFAS has been detected in the stormwater that discharges from the Stanton Site to the Menominee River at concentrations that exceed Wisconsin's current surface water standards. The DNR understands that JCI/Tyco recently completed upgrades to its stormwater management, with the goal of limiting contaminant migration in stormwater moving off the Stanton Site. Monitoring of the stormwater for PFAS is required as part of this site investigation, especially given that stormwater has been documented to be a contaminant migration pathway for PFAS at the Stanton Site (Wis. Admin. § NR 716.11(5)(a)). If PFAS concentrations in the stormwater remain over surface water standards, then additional characterization to evaluate the source of the PFAS in stormwater and to select interim or remedial actions will be required (Wis. Admin. Code § NR 716.17(3)).

Tyco Response to Recommendation #7:

As noted in the Recommendation, modifications were made to the stormwater system. The purpose of these modifications was to address concerns regarding potential infiltration of groundwater into stormwater infrastructure located below the groundwater table. These concerns were addressed by redirecting all stormwater to ground surface or to shallow trench drains located above the water table. Tyco is currently working with WDNR Storm Water Program staff to address PFAS associated with stormwater at the Site, separate from the Remediation and Redevelopment Program.

The Stanton Street Site PFAS source area is contained within the hydraulic barrier wall. Concentrations within that wall will be variable due to ongoing remediation system operation that addresses RCRA contaminants and PFAS. Given the limited footprint of the Site, it is more informative to monitor and present the sampling results as a posting map rather than develop cross sections or contour maps. This approach would be consistent with ongoing RCRA reporting procedures for the other Site contaminants, such as arsenic, salts and pesticides.

Sincerely,
Arcadis U.S., Inc.



Matthew Coleman
Project Scientist

CC. D. Nelson, Tyco
S. Wahl, Tyco
H. Ziegelbauer, Jacobs
S. Potter, Arcadis

Ms. Alyssa Sellwood, P.E.
Wisconsin Department of Natural Resources
May 20, 2024

Enclosure

Figure 1 6:2 FTS Results in Groundwater, 2022-2023

References

- AECOM. 2023. 2022 Environmental Site Investigation. Fincantieri Marinette Marine Facility, 1600 Ely Street, Marinette, Wisconsin, BRRTS No. 02-38-587381. December 1.
- Arcadis. 2022. Tyco Stanton Street Facility, Marinette, Wisconsin, BRRTS No. 02-38-581955 (Tyco Fire Products LP) & 02-38-583852 (ChemDesign Products, Inc.). March 22.
- Arcadis. 2023a. Site Investigation Status Report. Tyco Fire Technology Center, Marinette, Wisconsin, BRRTS No. 02-38-580-694. April 3.
- Arcadis. 2023b. GETS Short-Term Monitoring – May 15, 2023 through November 12, 2023. Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI. BRRTS No. 02-38-580694. November 15.
- Backe, Will. J., Thomas C. Day, and Jennifer. A. Field. 2013. Zwitterionic, cationic, and anionic fluorinated chemicals in aqueous film forming foam formulations and groundwater from U.S. military bases by nonaqueous large-volume injection HPLC-MS/MS. *Environmental Science and Technology*, 47(10), 5226-5234.
- EarthTech. 2007. Bedrock Well Abandonment and Replacement Report, Manufacturing and Wetlands Area, Tyco Safety Products – Ansul, Stanton Street Facility, Marinette, Wisconsin, EPA #WID 006 125 215. November 28.
- Field, Jennifer A. and Jimmy Seow. 2017. Properties, occurrence, and fate of fluorotelomer sulfonates. *Critical Reviews in Environmental Science and Technology*, 47(8), 643-691. doi: 10.1080/10643389.2017.1326276.
- Place, Benjamin J. and Jennifer A. Field. 2012. Identification of novel fluorochemicals in aqueous film-forming foams used by the US military. *Environmental Science and Technology*, 46(13), 7120-7127.
- URS Corporation (URS). 2001. Summary of Findings: 1974-2000, Tyco Suppression Systems-Ansul, EPA ID #WID 006 125 215. Prepared for Tyco Suppression Systems – Ansul, Stanton Street Facility, Marinette, Wisconsin. February 16.
- Wang, Ning, Jinxia Liu, Robert C. Buck, Stephen H. Korzeniowski, Barry W. Wolstenholme, Patrick W. Folsom, and Lisa M. Sulecki. 2011. 6:2 fluorotelomer sulfonate aerobic biotransformation in activated sludge of waste water treatment plants. *Chemosphere*, 82(6),853-858. doi: 10.1016/j.chemosphere.2010.11.003

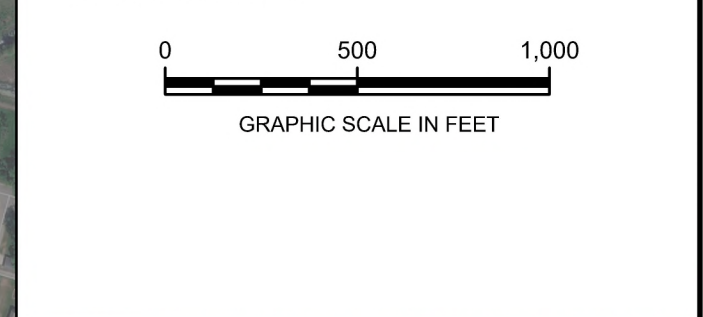


LEGEND:

- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- APPROXIMATE FORMER FIRE TRAINING AREA
- FORMER TYCO ADMINISTRATIVE BUILDING/PROPERTY (SOLD)
- STANTON STREET HYDRAULIC BARRIER WALL
- ROAD
- STATE BOUNDARY
- ◆ OVERBURDEN MONITORING WELL (MW003S/M)
- ◆ BEDROCK MONITORING WELL (MW003D)
- ◆ FINCANTIERI MARINETTE MARINE MONITORING WELL (MW-1)
- BORING LOCATION (VAP-65)

NOTES:

1. CONCENTRATIONS OF 6:2 FTS ARE PRESENTED IN UNITS OF NANOGRAMS PER LITER (NG/L).
2. AT LOCATIONS WHERE DUPLICATE SAMPLES WERE COLLECTED, THE HIGHEST CONCENTRATION IS SHOWN.
3. AT BORING LOCATIONS VAP-65 THROUGH VAP-70, SAMPLES WERE COLLECTED AT MULTIPLE DEPTH INTERVALS; THE HIGHEST CONCENTRATION FROM ALL INTERVALS IS SHOWN.
4. GROUNDWATER DATA FOR STANTON STREET INVESTIGATION WELLS WERE COLLECTED BY ARCADIS IN NOVEMBER 2022. GROUNDWATER DATA FOR STANTON STREET BORING LOCATION VAP-65 WAS COLLECTED BY ARCADIS IN SEPTEMBER 2022. GROUNDWATER DATA FOR STANTON STREET BORING LOCATIONS VAP-66 THROUGH VAP-70 WERE COLLECTED BY ARCADIS IN JUNE 2023.
5. GROUNDWATER DATA FOR FINCANTIERI MARINETTE MARINE LOCATIONS MW-1 THROUGH MW-16 WERE COLLECTED BY AECOM IN JUNE 2022. THE RESULTS SHOWN WERE REPORTED IN THE 2022 ENVIRONMENTAL SITE INVESTIGATION DATED DECEMBER 1, 2023 (BRRTS NO. 02-38-587281).
6. DATA VALIDATION QUALIFIERS:
 J = THE RESULT IS AN ESTIMATED QUANTITY. THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF ANALYTE IN THE SAMPLE.
 D = THE ANALYTE WAS ANALYZED AT DILUTION.
 < = THE ANALYTE WAS NOT DETECTED AT THE REPORTING LIMIT.
 U = THE ANALYTE WAS ANALYZED FOR BUT THE RESULTS WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT.
7. FINCANTIERI MARINETTE MARINE MONITORING WELL LOCATIONS DATA SOURCE: AECOM, 2022 ENVIRONMENTAL SITE INVESTIGATION REPORT, DECEMBER 1, 2023 (BRRTS NO. 02-38-587281).
8. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
9. SOURCE: 30 CM RESOLUTION OF AERIAL IMAGERY FROM 05/17/2023 AND 06/07/2023 WAS PURCHASED FROM APOLLO MAPPING LLC ON 02/01/2024.



Attachment &

GY'W'; Yc`c[]W@[g


Route To:
 Solid Waste Haz. Waste
 Emergency Response Underground Tanks
 Wastewater Water Resources
 Other

Facility/Project Name Ansul Fire Protection		License/Permit/Monitoring Number		Boring Number SB003	
Boring Drilled By (Firm name and name of crew chief) Environmental & Foundation Drillers		Date Drilling Started 7/17/98		Date Drilling Completed 7/17/98	
DNR Facility Well No.		WI Unique Well No.		Common Well Name MW003M	
Final Static Water Level Feet		Surface Elevation Feet		Borehole Diameter 6-1/4 Inches	
Boring Location State Plane 1/4 of NW 1/4 of Section 5		N, E S/C/N T 30 N, R 24 E		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	

County Marinette	DNR County Code 38	Civil Town/City/ or Village Marinette
----------------------------	------------------------------	---

Sample Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties						RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
14	12		0	Sand and gravel, brown, 7.5YR4/6, dry to moist, mud, medium stiffness.	SM										
6	19		1	Sand and gravel, brown, 7.5YR4/6, dry to moist, mud, medium stiffness.	SM										
14	6		3	Sand, brown, 10YR3/2, saturated, medium to fine grained, trace gravel, trace silt.	SP										
20	5		5	Sand, brown, 10YR3/2, saturated, medium to fine grained, trace gravel, trace silt.	SP										
12	15		7	Top 2": Sand, brown, 10YR3/2, saturated, medium to fine grained, trace gravel, trace silt. Bottom 10": Wood, little silt, much sand.	SP										
6	24		9	Top 2": Sand, dark brown, 10YR3/2, wet, medium to fine grained, trace gravel, silt. Bottom 4": Wood.	SP										
8	23		11	Top 6": Sand, dark brown, 10YR3/2, wet, medium grained, trace gravel, silt, few organics. Bottom 2": Wood.	SP										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm DAMES & MOORE 13255 West Bluemound Rd, Suite 202 Brookfield, WI 53005 Tel: (414)782-7281 Fax: (414)782-7289
--	--

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Route To:

- Solid Waste
- Emergency Response
- Wastewater
- Haz. Waste
- Underground Tanks
- Water Resources
- Other

Facility/Project Name Ansul Fire Protection			License/Permit/Monitoring Number		Boring Number SB022	
Boring Drilled By (Firm name and name of crew chief) Environmental & Foundation Drillers			Date Drilling Started 8/5/98		Date Drilling Completed 8/5/98	
DNR Facility Well No.			WI Unique Well No.		Common Well Name MW022M	
Boring Location State Plane 1/4 of NW 1/4 of Section 5			Final Static Water Level Feet		Surface Elevation Feet	
County Marinette			DNR County Code 38		Civil Town/City/ or Village Marinette	
Boring Location State Plane N, E S/C/N			Lat 0' "		Local Grid Location (If applicable)	
T 30 N,R 24 E			Long 0' "		<input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W	
Borehole Diameter 6-1/4 Inches						

Sample Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
	2	WT.		Peat material, 10YR3/2, moist, fibrous.	PT										
	12	4	1	Sand, 7.5YR4/2, wet, medium to coarse grained, well sorted.	SP										
	12	5	3	Sand, 7.5YR4/2, wet, medium to coarse grained, well sorted.	SP										
	16	6	5	Sand, 10YR4/2, wet, medium to coarse grained, trace gravel, well sorted.	SP										
	5	4	7	Sand, 10YR4/2, wet, medium to coarse grained, trace gravel, well sorted.	SP										
	7	4	9	Sand, 10YR4/2, wet, medium to coarse grained, well sorted.	SP										
	12	4	11	Sand, 10YR4/2, wet, medium to coarse grained, well sorted.	SP										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm DAMES & MOORE 13255 West Bluemound Rd, Suite 202 Brookfield, WI 53005 Tel: (414)782-7281 Fax: (414)782-7289
---------------	--

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other _____

Facility/Project Name Tyco Fire Products LP			License/Permit/Monitoring Number -		Boring Number SB-VAP-66	
Boring Drilled By: Name of crew chief (first,last) and Firm Cody, Dakota Technologies, Inc., Fargo, ND			Date Drilling Started 06/14/2023		Date Drilling Completed 06/14/2023	Drilling Method Geoprobe (GP)
WI Unique Well No. -	DNR Well ID No. -	Well Name -	Final Static Water Level ____ Feet MSL		Surface Elevation 556.59 Feet MSL	Borehole Diameter 2 inches
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/> State Plane _____ N, _____ E 1/4 of _____ 1/4 of Section _____, T _____ N, R _____			Lat 45.096396 Long -87.617920		Local Grid Location -	
Facility ID 438005590		County Marinette	County Code 38	Civil Town/City/ or Village 2700 Industrial Parkway South		

Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
	5' / 5'		5	(0.0-0.5 ft) NOTE: Grass and topsoil. (0.5-2.0 ft): Fine to medium SAND; little silt; trace small pebbles, angular; no plasticity; no dilatancy; dry; soft; 10YR 3/6 - dark yellowish brown.	SM									
	5' / 3'		5	(2.0-4.0 ft): Fine to coarse SAND, subangular to round; some small to large pebbles, subangular to subround; little silt; no plasticity; no dilatancy; poorly sorted; dry to moist, loose; 10YR 4/3 - brown.	SG									
	5' / 3'		10	(4.0-7.0 ft): Fine to coarse SAND, subangular to subround; some silt; trace small pebbles, subangular to subround; no plasticity; slow dilatancy; poorly sorted; wet; medium dense; 10YR 2/2 - very dark brown.	SM									
	5' / 3.5'		10	(7.0-7.5 ft): SILT; little clay; trace very fine sand; medium plasticity; no dilatancy; wet; soft; 10YR2/1 - black.	MLC									
	5' / 3.5'		15	(7.5-13.5 ft): Fine to medium SAND; little silt; no plasticity; slow dilatancy; wet; medium stiff; 10YR3/2 - very dark grayish brown.	SM									
	5' / 3.5'		20	(13.5-21.0 ft): Fine to coarse SAND, subangular to subround; trace silt; no plasticity; no dilatancy; poorly sorted; wet; loose; 10YR 3/2 - very dark grayish brown; no odor.	SP									
	5' / 4'		25	(21.0-26.0 ft): CLAY; some very fine to fine sand; little silt; medium plasticity; no dilatancy; moist to wet; soft; 10YR 6/2 - light brownish gray. NOTE: Trace pebbles 25-26.	CLM									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm Arcadis	126 N Jefferson St, Suite 400 Milwaukee, WI 53202
---------------	-----------------	--

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Sample		Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
	5' / 4'		30	(26.0-26.6 ft): Very fine SAND; some clay; little silt; low plasticity; no dilatancy; moist to wet; stiff; 10YR 6/2 - light brownish gray; no odor.	CLM									
				(26.6-29.0 ft): CLAY; little silt; medium plasticity; slow dilatancy; moist to wet; soft; 10YR 6/2 - light brownish gray; no odor.	CLM									
	5' / 5'			(29.0-32.0 ft): Very fine SAND; some clay; little silt; low plasticity; no dilatancy; moist to wet; medium stiff; 10YR 6/2 - light brownish gray; no odor.	SC									
				(32.0-34.0 ft): CLAY; some silt; medium plasticity; no dilatancy; moist to wet; soft; 10YR6/2 - light brownish gray; no odor.	CLM									
			35	(34.0-35.0 ft): CLAY; some fine to medium sand; little silt; trace small to medium pebbles, subangular to subround; medium plasticity; slow dilatancy; moist to wet; soft; 10YR 6/2 - light brownish gray.	CLG									

End of Boring at 35 ft bgs.