

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)

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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 Verburg	First Ben	MI	Organization/ Business Name Arcadis
Mailing Address 126 N Jefferson Street, Suite 400		City Milwaukee	State WI
		ZIP Code 53202	
Phone # (include area code) (414) 276-7742	Fax # (include area code)	Email Ben.Verburg@arcadis.com	

Environmental Consultant (if applicable)

Contact Last Name Verburg	First Ben	MI	Organization/ Business Name Arcadis
Mailing Address 126 N Jefferson Street, Suite 400		City Milwaukee	State WI
		ZIP Code 53202	
Phone # (include area code) (414) 276-7742	Fax # (include area code)	Email Ben.Verburg@arcadis.com	

Section 2. Property Information

Property Name Tyco Fire Technology Center - PFCs	FID No. (if known) 438005590
BRRTS No. (if known) 0238580694	Parcel Identification Number
Street Address 2700 Industrial Parkway South	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 checked="" type="radio"/> Multiple tax parcels
	Property Size Acres 380

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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 form 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: _____

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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: Revised Long-Term Potable Well Sampling Plan, v.7

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



4/3/2023

Date Signed

Project Environmental Specialist

Title

(414) 277-6233

Telephone Number (include area code)

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

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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

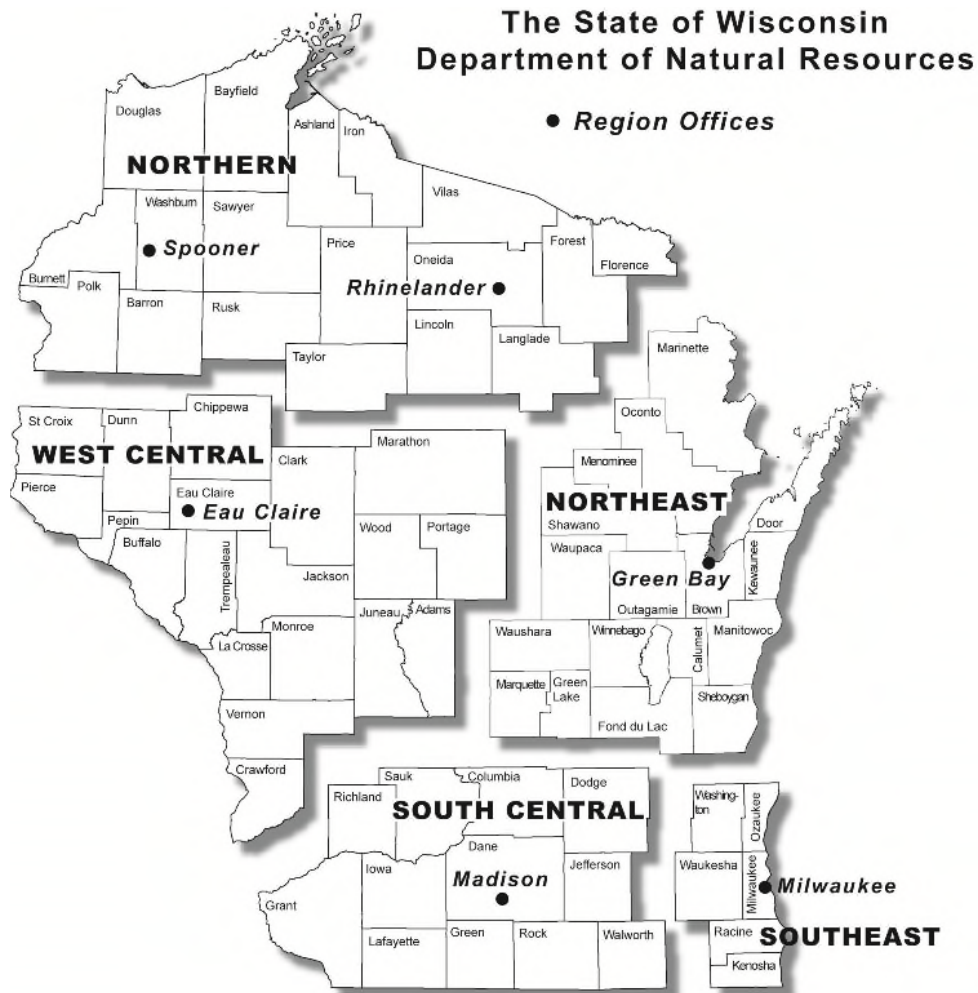
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

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



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

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		

Tyco Fire Products LP

REVISED LONG-TERM POTABLE WELL SAMPLING PLAN

**Tyco Fire Technology Center
2700 Industrial Parkway South
Marinette, Wisconsin 54143
BRRTS# 02-38-580694**

April 3, 2023

REVISED LONG-TERM POTABLE WELL SAMPLING PLAN

**Tyco Fire Technology Center, 2700 Industrial Parkway South
Marinette, Wisconsin 54143 BRRTS# 02-38-580694**

April 3, 2023

Prepared By:

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

Prepared For:

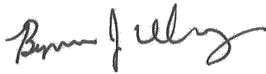
Tyco Fire Products LP
2700 Industrial Parkway South
Marinette, Wisconsin 54143

Our Ref:

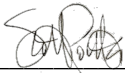
30168806



Lisa M. Rutkowski
Project Environmental Scientist



Ben Verburg, P.E.
Certified Project Manager



Scott T. Potter, PhD
Chief Hydrogeologist

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Version Control

Revision No.	Date Issued	Page No.	Description
0	3/8/2018	All	Initial Release
1	4/20/2018	All	Revisions based on WDNR comment letter dated March 30, 2018
2	4/1/2020	All	Regular update as requested by WDNR
3	3/16/2021	All	Revisions based on WDNR letter dated November 16, 2020
4	10/1/2021	All	Revisions based on WDNR comment letter dated June 18, 2021
5	5/17/2022	All	Revisions based on WDNR comment letters dated December 16, 2021
6	10/3/2022	All	Revisions reflecting potential drinking water source changes within PWSA
7	4/3/2023	All	Revisions based on WDNR comment letter dated 11/18/2022

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Acronyms and Abbreviations

Arcadis	Arcadis U.S., Inc.
COC	chain-of-custody
FTC	Fire Technology Center
GAC	Granular Activated Carbon
HDPE	high-density polyethylene
ID	identification
ng/L	nanograms per liter
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
POET	point of entry treatment
PTFE	polytetrafluoroethylene
PWSA	potable well sampling area
RL	reporting limit
TOC	total organic carbon
Tyco	Tyco Fire Products LP
WDHS	Wisconsin Department of Health Services
WDNR	Wisconsin Department of Natural Resources

Executive Summary

Arcadis U.S., Inc (Arcadis) on behalf of Tyco Fire Products LP (Tyco) has prepared this Revised Long-Term Potable Well Sampling Plan (sampling plan) for the Tyco Fire Technology Center (FTC) site located at 2700 Industrial Parkway South in Marinette, Wisconsin (Site).¹ This sampling plan outlines the activities that Tyco is performing to eliminate the primary potential exposure pathway (drinking water) for per- and polyfluoroalkyl substances (PFAS) in the potable well sampling area (PWSA) as defined by Tyco.

Tyco is addressing potentially impacted drinking water in the PWSA in three ways. First, Tyco has offered free bottled water to every parcel with a potable well within the PWSA. The bottled water is offered, regardless of the results of any sampling results from the potable well. Tyco will continue to offer and provide free bottled water to a parcel until the private replacement deep bedrock drinking water wells (Replacement Wells) are installed for that parcel.

Second, Tyco offered a Point-of-Entry Treatment (POET) system for every residential drinking water well within the PWSA that had confirmed detections of PFAS. This report details the POET Monitoring Program that Tyco will continue to provide for each installed POET, until the Replacement Wells are installed for that parcel. After the Replacement Well is installed for a parcel and test results confirm that the drinking water meets drinking water limits that apply to municipal drinking water in Marinette, the property owners will be allowed to keep the POET and maintain it at their own cost and expense, or Tyco will pay to remove the POET.

Third, Tyco will continue to sample the previously existing potable wells that have been sampled in the PWSA, at the frequency previously used, until the Replacement Wells are installed for a parcel.² At the time of installation, Tyco will sample the Replacement Well to confirm that the drinking water meets drinking water limits that apply to municipal drinking water in Marinette. Thereafter, Tyco will sample the Replacement Wells quarterly for 1 year to continue to confirm that there is no PFAS above recommended standards and that the systems installed are successfully treating naturally occurring elements in the water. Tyco will also continue to conduct sampling of groundwater wells in the PWSA pursuant to an approved Groundwater Monitoring Plan. If one of the deep bedrock long-term groundwater monitoring wells located near a Replacement Well detects PFAS above certain levels (addressed in more detail herein), Tyco will work in cooperation with the property owner and the Wisconsin Department of Natural Resources (WDNR) to determine appropriate next steps for ensuring safe drinking water.

Tyco has eliminated the primary potential exposure pathway for PFAS associated with the FTC groundwater plume to enter the body. In addition, Tyco has been advancing long-term drinking water solutions preferred by PWSA residents based on direct outreach by: (1) Offering to pay to expand the municipal water system of the

¹ WDNR has incorrectly identified Johnson Controls, Inc. (JCI) as a “responsible party” for this property under the Wisconsin Spills Law. The WDNR is in error. JCI does not own or operate the property at issue. In addition, JCI is not the corporate parent of Tyco.

² Tyco believes that continuing sampling at the frequency previously used will result in less disruption and confusion to the well owners and citizens of Marinette County. However, by continuing this activity, Tyco is not acknowledging the authority of the WDNR to require an investigation or remediation of PFAS, or to require the provision of alternate water supplies. Tyco is also not acknowledging or confirming the validity, enforceability, accuracy, or scientific basis for, the use of any proposed or final enforcement standards for PFAS enforced by Wisconsin Department of Health Services (WDHS), Wisconsin Department of Natural Resources (WDNR), or other state or federal agency.

Revised Long-Term Potable Well Sampling Plan

City of Marinette for any area of the PWSA that requests and achieves annexation to the City of Marinette; and (2) for any parcel that is not annexed to the City of Marinette, offering to install a Replacement Well.

1 Introduction

On behalf of Tyco Fire Products LP (Tyco), Arcadis U.S., Inc. (Arcadis) has prepared this *Revised Long-Term Potable Well Sampling Plan* (sampling plan) for the Tyco Fire Technology Center (FTC) located at 2700 Industrial Parkway South in Marinette, Wisconsin (the Site). Tyco and Arcadis are conducting Site investigation and monitoring activities under the oversight of the Wisconsin Department of Natural Resources (WDNR). As requested by WDNR, this document provides an update to the Revised Long-Term Potable Well Sampling Plan (Arcadis 2022d). This sampling plan and future versions, to be submitted every 6 months, will be applicable as described herein while existing potable wells are in operation. This sampling plan does not apply to any Replacement Wells because they will be subject to the provisions of the Groundwater Monitoring Program.

2 Potable Well Sampling Plan Summary

The PWSA is roughly defined to the north by University Drive, to the west by County Road B, to the south by Rader Road and to the east by the Bay of Green Bay. The extent of groundwater contamination in the PWSA will be monitored through a network of monitoring wells and piezometers already in place or planned. In the PWSA, Tyco provides bottled water, conducts a potable well sampling program that was initiated in December 2017 and continues quarterly, and also conducts a separate POET Monitoring Program. The PWSA is illustrated on **Figure 1**.

2.1 Bottled Water

Bottled water is offered by Tyco to users of the private wells that are within the PWSA regardless of sampling participation or results. The only criteria for being eligible for bottled water within the PWSA is that the tenant has a potable well plumbed to the building that is a primary source of drinking water. Bottled water is managed per the Comprehensive Alternative Water Management Plan submitted to WDNR in March 2020.

2.2 Potable Well Sampling Program

A list of wells within the Potable Well Sampling Program is presented in **Table 1**.

The winter 2023 quarterly potable well sampling event extended through March 31, 2023. During the previous events, Arcadis sampled a total of 173 potable wells located generally to the southeast of the Site where residents rely on private wells for drinking water. A summary of the most conservative results from the previous sampling events is included in the following list:

- Potable wells sampled through December 2022: 173
- Potable wells analyzed for 36 PFAS compound list: 152
- Potable wells with results above the reporting limit (RL) for compounds in **Table 3**: 102
- Potable wells with results between the method detection limit (MDL) and reporting limit (RL) for compounds in **Table 3**: 41
- Potable wells with no detected results for compounds in **Table 3**: 30

2.3 POET Monitoring Program

POETs were offered to every parcel owner in the PWSA where the potable well results detected PFAS. Forty-seven POET systems have been installed to date to treat groundwater used as drinking water under this program. One POET was subsequently removed from service after a parcel was sold and the new owner did not require a second POET for an outer building.

As Replacement Wells are installed the POETs are no longer necessary. At that time, Tyco will allow the parcel owners to continue to own and maintain the POETs, or Tyco will remove the POET at Tyco's expense. To date, two POETs were removed following installation of the Replacement Wells.

Revised Long-Term Potable Well Sampling Plan

A list of POET systems and associated status is included in **Table 2**. Arcadis has collected POET system samples on a regular basis to confirm the effectiveness of PFAS removal and system operations.

Routine maintenance is conducted on each POET system. Sediment filters are typically replaced every 3 months; UV lights and the quartz sleeves are replaced once every year; and granular activated carbon (GAC) tanks are replaced when initial breakthrough is observed or as appropriate based on a conservative analysis of previous results for the specific POET system over the course of at least 12 months. Those analyses indicated breakthrough varied based on water usage, concentrations of PFAS for each well, and concentration of total organic carbon (TOC). The water available or yield from a driven point well also causes variability in when breakthrough is observed. POET system PFAS monitoring data has been provided to WDNR.

3 Long-Term Sampling Plan for Existing Potable Wells

3.1 Existing Potable Wells

The frequency of sampling for existing potable wells will be consistent with those proposed in the *Sixth Revised Long Term Potable Well Sampling Plan* (Arcadis 2022d). This approach is consistent with that previously approved in the *Fifth Revised Long Term Potable Well Sampling Plan* (dated May 19, 2022), although there is no enforceable groundwater standard for PFOA or PFOS in the state of Wisconsin.

The potable well sampling plan criteria were established based on data collected to date that indicate most wells in the PWSA do not have detections above the reporting limit and all wells were offered bottled water to eliminate the drinking water exposure pathway regardless of sampling results. Results from potable wells are used to inform residents of their specific groundwater conditions relative to PFAS and are not a source of remedial decision-making data. Instead, borings, piezometers, and wells installed for monitoring purposes are used to monitor groundwater quality over time.

As noted in **Section 1**, this sampling plan will be updated every six months. The next update will be provided October 2, 2023.

3.2 POET Systems

3.2.1 Proposed POET Maintenance Schedule for Existing POET Systems

Existing POET systems installed for less than one year will continue to be sampled on a quarterly basis to determine POET system efficiency. After a minimum of one year of monitoring, POET systems will be transitioned to the maintenance program described below. The POET system maintenance program uses sampling data from each POET over the course of at least one year to determine a conservative GAC vessel change out schedule. POET users are offered bottled water service too.

The conservative sampling schedule that was established for the POET program when systems were first installed starting in early 2018 resulted in a large amount of data available to help predict when POET systems would show breakthrough. In addition to analyzing inlet, mid-carbon and outlet samples for PFAS, TOC was collected from the well prior to POET system installation and flow meter readings were collected during each sampling event to determine weekly or monthly water usage. This information as well as the inlet concentrations and regular sampling to identify when initial breakthrough occurred resulted in the ability to reduce the sampling frequency for well-established POET systems and move them to a maintenance-only program.

The GAC change schedule was established by looking at all data relevant to each system. The GAC will be changed in every system at least once per year, even if breakthrough was observed two years or more after installation. Systems where breakthrough was observed earlier than 12 months will be changed out more frequently. Section 3.2.1 describes the various scenarios that are relevant to determining the GAC changeout schedule. The observed breakthrough and GAC change frequency for each POET is included in **Table 2**. The

Revised Long-Term Potable Well Sampling Plan

GAC changeout schedule is based on when initial breakthrough was observed, not when detections of PFAS exceeded the concentrations set forth on **Table 3**. This conservative approach to establishing the GAC changeout schedule in conjunction with the offer of bottled water to users of the potable wells, eliminates any potential drinking water exposure pathway.

Any POET systems with original GAC tanks that have been in operation for a year or more without exhibiting any signs of PFAS break-through will be maintained by replacing the GAC tanks once per year. POET systems with historic influent results below concentrations set forth in **Table 3** will be sampled at the effluent approximately every other year to confirm the efficacy of the selected maintenance program. POET systems with historic influent results above concentrations set forth in **Table 3** will be sampled at the effluent approximately annually to confirm the efficacy of the selected maintenance program.

GAC Change Frequency	Rationale	POET Systems
Annual	POET systems had non-detect concentrations at the mid-carbon and post-carbon sampling locations for more than a year.	10, 13, 14, 15, 16, 18, 20, 21, 22, 24, 25, 26, 27, 28, 29, 31, 34, 35, 38, 39, 40, 41, 42, 43, 45, 46, 47
9 months	POET systems that have shown PFAS breakthrough between 9 months and 1 year.	1, 2
6 months	POET systems that have shown PFAS breakthrough between six months and nine months.	3, 17, 30
As-needed	POET systems that have shown varying influent or PFAS breakthrough before six months will continue to be monitored on a quarterly basis and the GAC tanks will be replaced when breakthrough is observed. The sampling frequency may be increased or decreased based on future sampling results.	4, 6, 8, 12, 37, 44
2-3 months	POET systems that have shown PFAS breakthrough before three months.	5, 7, 19

Any POET systems that have not operated for at least a year will be monitored quarterly for at least 12 months to determine the future GAC maintenance schedule, at which point sampling will be discontinued. This does not apply to any systems currently. All systems in place have operated for a minimum of 12 months.

Any POET system that is in operation for less than 12 months because of planned service disruption due to extended vacations or absence for the winter will be winterized and then reinstalled with new GAC upon the homeowner's return without the collection of additional samples. This applies to POET Systems 11, 23, and 36.

Any POET system that has an unplanned service disruption due to vacancy, death, or home for sale will be winterized and reinstalled when needed. Winterization consists of bypassing the system, removing the GAC tanks and filters, and removing residual water from the system.

POET system 9 has been removed as requested by the owner.

As noted previously, POET systems 32 and 33 have been removed from the POET program because a Replacement Well has been installed.

Sediment filters and UV/Quartz maintenance will continue to be changed out based on the schedule defined in Section 3.2.2.

After the Replacement Well is installed for a parcel and test results confirm that the drinking water meets drinking water limits that apply to municipal drinking water in Marinette, the property owners will be allowed to keep the POET and maintain it at their own cost and expense, or Tyco will pay to remove the POET.

3.2.2 Proposed POET Maintenance Schedule for New POET Systems

Tyco is now installing Replacement Wells in the PWSA. As a result, it is unlikely that any new POET systems will be installed. If they are, new POET systems will be monitored quarterly for one year to determine the GAC maintenance schedule and monitor any fluctuation of potable well results. Sediment filters will continue to be changed out every three months and the UV light and quartz sleeves will continue to be changed out once per year. These timeframes are based on evaluation of data from more than two years of performance monitoring data collected from POET systems within the PWSA.

POET system performance monitoring samples will be collected at the inlet, mid-carbon and outlet locations according to the following schedule:

- Initial Sampling – Upon system installation and start-up
- Month 3 (Week 12) – After 3 months or 12 weeks of system operation
- Month 6 – After 6 months of system operation
- Month 9 – After 9 months of system operation
- Month 12 – After 12 months of system operation.

The future GAC change schedule will be determined based on the data obtained from the sampling activities described in this section. The POET systems will be scheduled for GAC changes and subject to additional sampling as described in **Section 3.2.1**.

4 Sample Procedure for Existing Potable Wells and POET Systems

The sections that follow provide an overview of the potable well and POET system sample procedures.

4.1 Prior to Sample Collection

Arcadis staff will coordinate a sample date and time with each well's contact person. Upon arrival, Arcadis will provide introductions and let the resident/property owner know the purpose is to collect a potable well sample for PFAS analysis in accordance with previous correspondence provided to them regarding the sampling. Arcadis will request information from the property owner regarding the water system at each property. Information that will be recorded includes presence of water softeners, sediment traps, filters, etc., and the location of these items.

Additional activities to be performed and procedures to be followed by the sampling team prior to potable well sample collection include:

- Put on a new set of nitrile gloves immediately prior to sampling.
- Do not use gloved hands to subsequently handle papers, pens, clothes, etc., before collecting samples.
- Use the 2-250 milliliter high-density polyethylene (HDPE) bottles that are supplied by the laboratory for each sample location.
- Samples bottle caps must remain on the bottle until immediately prior to sample collection, and the bottle must be sealed immediately after sample collection.

Additional COVID-related precautions may be implemented as appropriate based on Federal, State, or County guidance to protect homeowners and the sampling team. Those precautions may include but are not limited to:

- Sampling team personnel will practice established social distancing protocols when interacting with homeowners.
- Sampling team personnel will wear individual protective masks.
- Sampling team personnel will request verbal sampling permission from each of the homeowners and sign the homeowner acceptance, on behalf of the homeowner, of such verbal agreement on the electronic tablet.
- Sampling locations will be prioritized to outdoor spigots, instead of indoor locations, when possible, weather permitting.

4.2 During Sample Collection

Potable water outfalls and taps are likely to vary. If possible, the team will avoid sampling from any taps fitted with Teflon tape or other potential PFAS-containing materials. Stainless steel and polyvinyl chloride materials are acceptable. The sampling team will collect unfiltered samples from a tap or port, as follows:

- Initiate flow from the water source and allow the system to flush for at least three minutes.
- Collect the sample into the HDPE bottle until the sample bottle is full (leaving slight headspace in the bottle is acceptable).

- Tightly screw on the polypropylene or HDPE cap.

4.3 After Sample Collection

Upon collection, the sample bottles will be placed in a sealed Ziploc® or similar bag. Sample collection information will be recorded including the sample identification (ID) and time of sampling on the sample bottle label, in the field notes, and on the chain-of-custody (COC) form. The COC form will be marked for analysis with a standard turnaround time (approximately two weeks). Samples will be placed in coolers, with enough ice to keep the sample temperature between 0 and 4°C until delivered to the laboratory. Only “wet” ice will be used, with no use of “blue ice” or similar cold storage packets. PFAS sample coolers will be shipped via Federal Express Priority Overnight delivery to:

Sample Receiving
Eurofins TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, California 95605-1500

Samples will be analyzed for the 36 PFAS compounds reportable using Method 537 Modified.

All disposable sampling materials will be treated as single use and disposed appropriately after sampling at each location. Samples from each residence will be kept in their own dedicated cooler with the appropriate quality assurance samples.

4.4 Quality Assurance/Quality Control

Avoiding cross-contamination from PFAS-containing materials during this sampling will be of utmost importance given the very low detection limits for the analyses that will be conducted for these compounds. As such, materials with the potential to contain PFAS will not be used during the sampling (including polytetrafluoroethylene [PTFE] pipe tape, pipe thread pastes that contain PTFE, PTFE sample tubing, food wrappers, water resistant/proof clothing, waterproof field books, etc.)

Sample information, including sample ID and date/time collected, will be recorded on the provided bottle labels and attached to the sample bottles immediately after sealing the bottles. This information also will be recorded on the COC form provided by the laboratory, in a Potable Water Supply Sample Log, and in the sampling team’s field notes. A signed copy of the COC form will be provided to the laboratory whenever a sample cooler is delivered to the laboratory. A copy of each COC form will be kept with the field notes and sample logs.

After receipt from the laboratory, Arcadis will conduct a preliminary data quality review (Level 2 data validation). The sample results will be communicated to well owners/users after completion of the preliminary data quality review, as outlined in the “Project Communication” section below. After completion of the preliminary data quality review, Arcadis will conduct a more comprehensive validation of the data (Level 4 data validation). The timeframe for the Level 4 validation may vary based on the amount of time required for the laboratory to send additional Quality Assurance/Quality Control information to Arcadis, and the number of samples under review. The anticipated timeframe for completion of Level 4 validation is approximately four weeks after receipt of the complete Level 4 data package from the laboratory. If any changes to the reported sampling results become necessary after completion of the Level 4 validation, the well owners/users and WDNR will be notified of those changes.

5 Project Communication

Results letters will be provided to the applicable well owners/users and WDNR within 10 business days of Arcadis receiving results from the laboratory. If the PFAS concentrations at a well were below the concentrations set forth on **Table 3** based on data available for past sampling events but are above those concentrations for the current sampling event, then a phone call will be placed to the well owner/user within two days of completing the preliminary data quality review for the laboratory results for that sample to inform the owner or tenant of their results and confirm their bottled water status or offer bottled water as appropriate.

Tyco will provide WDNR copies of the letters provided to well owners/users within 10 business days of Arcadis receiving results from the laboratory. Validated results have been and will continue to be included in the bi-weekly database submission.

Tyco will submit an Annual Summary Report to document the results of the potable well and POET programs for the previous year. The next Annual Summary Report summarizing the drinking water results from April 1, 2022 through March 31, 2023 will be submitted by July 31, 2023.

6 Closing

This sampling plan presents the approach for bottled water service, sampling and maintenance of POET systems, and sampling of existing potable wells. Tyco is advancing long-term drinking water solutions by offering and installing private, deep bedrock replacement drinking water wells to any property owners in the PWSA who are not considering annexation to the City of Marinette. If any areas of the PWSA are annexed to the City of Marinette, Tyco will pay to expand the municipal water system.

Tyco has eliminated the primary potential exposure pathway for PFAS and will continue to work with the DNR and affected property owners.

7 References

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- Arcadis 2021c. Response to Comments – Response to 3rd Revised Long-Term Potable Well Sampling Plan. Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI. BRRTS# 02-38-580694. July 16, 2021.
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- Arcadis 2022d. Revised Long-Term Potable Well Sampling Plan. Tyco Fire Technology Center, 2700 Industrial Parkway South, Marinette, Wisconsin 54143. BRRTS# 02-38-580694. September 28, 2022.
- Wisconsin Department of Natural Resources. 2020. Response to Revised Long-Term Potable Well Sampling Plan. JCI/TYCO FTC (PFAS), 2700 Industrial Parkway, Marinette, WI. BRRTS Activity #02-38-580694. November 16, 2020.
- Wisconsin Department of Natural Resources. 2021a. Response to 3rd Revised Long-Term Potable Well Sampling Plan. JCI/TYCO FTC (PFAS), 2700 Industrial Parkway South, Marinette, WI. BRRTS #02-38-580694. June 18, 2021.

Revised Long-Term Potable Well Sampling Plan

Wisconsin Department of Natural Resources. 2021b. Response to 4th Revised Long-Term Potable Well Sampling Plan. JCI/Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI. BRRTS #02-38-580694. December 16, 2021.

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Tables

Table 1
Potable Well Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well ID	# of Quarterly Samples Collected ⁽³⁾	Category	Sampling Frequency	Next Sampling Event	Comments
WS-001	9	MDL<RL	Biennially	Winter 2023	
WS-002	2	ND	N/A	Well no longer in use	
WS-004	1	ND	N/A	Well no longer in use	
WS-005	11	RL<T3	Biennially	Winter 2024	
WS-005B	2	MDL<RL	N/A	Not a drinking water well	
WS-006	4	RL<T3	Biennially	Spring 2023	
WS-007B ⁽¹⁾	2	>T3	Annually	Winter 2023	
WS-010	7	RL<T3	Biennially	Spring 2024	
WS-011	8	MDL<RL	Biennially	Winter 2023	Deep well installation pending
WS-012	7	ND	Biennially	Winter 2023	
WS-014	11	MDL<RL	Biennially	Winter 2024	
WS-015	5	RL<T3	Biennially	Winter 2023	
WS-016	7	MDL<RL	Biennially	Winter 2023	
WS-020	8	MDL<RL	Biennially	Winter 2023	
WS-021	2	ND	Biennially	Winter 2023	Accepted deep well
WS-022	8	ND	Biennially	Winter 2023	
WS-026	9	MDL<RL	Biennially	Winter 2023	
WS-027	6	MDL<RL	Biennially	Winter 2023	
WS-028	5	RL<T3	Biennially	Winter 2024	
WS-029	8	ND	Biennially	Winter 2023	
WS-031	10	RL<T3	Biennially	Winter 2023	
WS-033	10	MDL<RL	Biennially	Winter 2023	
WS-034	10	MDL<RL	Biennially	Winter 2023	Deep well installation pending
WS-035	6	RL<T3	Biennially	Winter 2023	
WS-039	8	ND	Biennially	Winter 2023	
WS-040	8	RL<T3	Biennially	Winter 2023	
WS-043	7	ND	Biennially	Winter 2023	
WS-044	10	RL<T3	Biennially	Winter 2023	
WS-045	10	ND	Biennially	Winter 2023	
WS-046	5	RL<T3	Biennially	Winter 2023	
WS-047	2	ND	Biennially	Winter 2023	
WS-048 ⁽¹⁾	10	>T3	Annually	Spring 2023	
WS-050	10	MDL<RL	Biennially	Winter 2023	
WS-051	10	RL<T3	Biennially	Spring 2023	
WS-055	7	RL<T3	Biennially	Winter 2023	
WS-056	5	MDL<RL	Biennially	Spring 2023	
WS-059	6	RL<T3	Biennially	Summer 2024	
WS-061A	3	ND	Biennially	Winter 2023	
WS-063	10	MDL<RL	Biennially	Winter 2023	Deep well installation pending
WS-064	8	RL<T3	Biennially	Winter 2023	Accepted deep well
WS-065	10	MDL<RL	Biennially	Winter 2023	Deep well installation pending
WS-066	9	RL<T3	Biennially	Winter 2024	Deep well installation pending
WS-069A	9	RL<T3	Biennially	Spring 2024	
WS-069B ⁽¹⁾	9	>T3	Annually	Spring 2023	
WS-070 ⁽¹⁾	1	>T3	Annually	Winter 2023	
WS-071	7	RL<T3	Biennially	Winter 2023	
WS-072	10	ND	N/A	Well abandoned	Deep well installed
WS-073	10	MDL<RL	Biennially	Winter 2025	Deep well installation pending

Notes on Page 3.

Table 1
Potable Well Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well ID	# of Quarterly Samples Collected ⁽³⁾	Category	Sampling Frequency	Next Sampling Event	Comments
WS-074	2	RL<T3	Biennially	Winter 2023	
WS-075	10	ND	Biennially	Winter 2023	
WS-076	3	ND	Biennially	Winter 2023	Accepted deep well
WS-077	6	RL<T3	Biennially	Winter 2023	
WS-078	12	ND	Biennially	Fall 2024	
WS-079	12	RL<T3	Biennially	Fall 2024	
WS-080	4	MDL<RL	Biennially	Winter 2023	
WS-081	3	MDL<RL	Biennially	Winter 2023	
WS-082	3	MDL<RL	Biennially	Winter 2023	
WS-082B	2	>T3	N/A	Not a drinking water well	
WS-082C	2	>T3	N/A	Not a drinking water well	
WS-082D ⁽¹⁾	3	>T3	N/A	Not a drinking water well	
WS-083	7	MDL<RL	Biennially	Winter 2023	Accepted deep well
WS-084	12	ND	Biennially	Summer 2024	
WS-085	8	ND	Biennially	Winter 2023	
WS-086	7	RL<T3	Biennially	Winter 2024	
WS-087	11	RL<T3	Biennially	Fall 2023	Deep well installation pending
WS-088	9	MDL<RL	Biennially	Winter 2023	Deep well installation pending
WS-089	5	ND	Biennially	Winter 2024	
WS-091	4	ND	Biennially	Winter 2023	
WS-093	6	RL<T3	Biennially	Winter 2023	
WS-094 ⁽¹⁾	7	RL<T3	Biennially	Winter 2023	Accepted deep well
WS-095	3	ND	Biennially	Winter 2023	Deep well installation pending
WS-098	6	RL<T3	Biennially	Spring 2023	
WS-101 ⁽²⁾	3	>T3	Annually	Winter 2023	
WS-102	9	RL<T3	Biennially	Winter 2023	Accepted deep well
WS-103	6	RL<T3	Biennially	Winter 2023	
WS-104	9	MDL<RL	Biennially	Winter 2023	
WS-105	1	ND	Biennially	Winter 2023	
WS-107	7	RL<T3	Biennially	Winter 2023	
WS-108	9	MDL<RL	Biennially	Winter 2023	
WS-110A	10	MDL<RL	Biennially	Winter 2023	
WS-112	9	MDL<RL	Biennially	Winter 2023	
WS-113	10	ND	Biennially	Winter 2025	
WS-114	6	MDL<RL	Biennially	Spring 2023	Accepted deep well
WS-116	8	MDL<RL	Biennially	Summer 2023	
WS-117	8	MDL<RL	Biennially	Winter 2023	
WS-118A	6	ND	Biennially	Winter 2023	
WS-118B	5	ND	Biennially	Winter 2023	
WS-119	10	MDL<RL	Biennially	Winter 2023	
WS-120	7	RL<T3	N/A	Well abandoned	Deep well installed
WS-122	10	MDL<RL	Biennially	Winter 2023	
WS-123	6	RL<T3	Biennially	Winter 2023	Accepted deep well
WS-124 ⁽¹⁾	6	RL<T3	Biennially	Winter 2023	Accepted deep well
WS-125	7	MDL<RL	Biennially	Winter 2023	
WS-127	4	RL<T3	Biennially	Spring 2024	
WS-128	4	ND	Biennially	Winter 2023	Accepted deep well
WS-130	11	MDL<RL	Biennially	Spring 2024	

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Table 1
Potable Well Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well ID	# of Quarterly Samples Collected ⁽³⁾	Category	Sampling Frequency	Next Sampling Event	Comments
WS-131	7	MDL<RL	Biennially	Winter 2023	Deep well installation pending
WS-132	9	RL<T3	N/A	Well abandoned	Deep well installed
WS-134	6	MDL<RL	Biennially	Spring 2024	
WS-135	4	RL<T3	Biennially	Winter 2023	
WS-136	6	RL<T3	Biennially	Winter 2023	
WS-137	8	RL<T3	Biennially	Spring 2024	
WS-138	8	ND	Biennially	Winter 2023	
WS-139	8	MDL<RL	Biennially	Winter 2023	
WS-140	5	RL<T3	Biennially	Fall 2023	Accepted deep well
WS-141	8	MDL<RL	Biennially	Winter 2023	
WS-142	4	RL<T3	Biennially	Winter 2023	Accepted deep well
WS-143	6	RL<T3	Biennially	Spring 2023	
WS-144	6	RL<T3	Biennially	Spring 2023	
WS-145	5	RL<T3	Biennially	Spring 2023	
WS-146B	4	>T3	N/A	Not a drinking water well	
WS-147 ⁽²⁾	3	>T3	Annually	Winter 2023	
WS-148	2	ND	N/A	Abandoned by owner	
WS-149	3	RL<T3	Biennially	Winter 2023	
WS-150	3	RL<T3	Biennially	Winter 2023	
WS-151	5	RL<T3	Biennially	Spring 2023	
WS-153	7	ND	Biennially	Winter 2023	Accepted deep well
WS-154	5	ND	Biennially	Spring 2023	Accepted deep well
WS-155	3	MDL<RL	Biennially	Winter 2023	
WS-156	7	ND	Biennially	Winter 2023	
WS-157	6	RL<T3	Biennially	Winter 2023	
WS-158	3	>T3	Annually	Winter 2023	Deep well installation pending
WS-159 ⁽¹⁾	4	>T3	Annually	Winter 2023	Accepted deep well
WS-160	4	MDL<RL	Biennially	Winter 2023	Accepted deep well
WS-161	4	RL<T3	Biennially	Spring 2024	
WS-162	2	RL<T3	Biennially	Winter 2023	
WS-164	1	MDL<RL	Biennially	Winter 2023	

Notes:

⁽¹⁾ = POET offer extended

⁽²⁾ = POET offer declined

⁽³⁾ = Number of quarterly samples collected through Fall 2022 sampling event

ID = Identification

ND = not detected above the laboratory MDL

MDL = method detection limit

RL = reporting limit

T3 = Table 3 values

N/A = not applicable

Wells abandoned due to deep well replacement are removed from this sampling program

Table 2
Potable Wells in POET OM&M Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well Sample ID	POET ID	Category	GAC Change Frequency	Residency Status	Next Maintenance or Sampling Event ⁽¹⁾	Date POET System Removed From Home	Comments
WS-007A	POET-43	> T3	12 months		Maintenance, April 2023		
WS-008	POET-7	> T3	2-3 months		Maintenance, May 2023		
WS-009	POET-26	RL < T3	12 months		Maintenance, June 2023		
WS-013	POET-10	RL < T3	12 months	Occasionally winterized	Maintenance, June 2023		
WS-017	POET-40	RL < T3	12 months		Maintenance, April 2023		
WS-018	POET-29	> T3	12 months		Maintenance, May 2023		
WS-019	POET-5	> T3	2-3 months		Maintenance, June 2023		Deep well installation pending
WS-023	POET-14	RL < T3	12 months		Maintenance, June 2023		
WS-024	POET-11	> T3	TBD	Winterized 4 months each year	Maintenance, June 2023		
WS-025	POET-28	> T3	12 months		Maintenance, June 2023		
WS-030	POET-31	> T3	12 months		Maintenance, May 2023		Deep well installation pending
WS-032	POET-25	MDL < RL	12 months		Maintenance, June 2023		
WS-036	POET-3	> T3	6 months		Maintenance, June 2023		
WS-037	POET-32	> T3	12 months		Deep Well Installed	1/30/2023	
WS-038	POET-19	> T3	2-3 months		Maintenance, June 2023		
WS-041	POET-46	RL < T3	12 months		Maintenance, June 2023		
WS-042	POET-45	RL < T3	12 months		Maintenance, June 2023		
WS-049	POET-35	RL < T3	12 months		Maintenance, June 2023		
WS-052	POET-2	> T3	9 months		Maintenance, April 2023		Deep well accepted
WS-053	POET-21	RL < T3	12 months		Maintenance, June 2023		Deep well installation pending
WS-054	POET-30	> T3	6 months		Maintenance, May 2023		Deep well installation pending
WS-057	POET-34	> T3	12 months		Maintenance, June 2023		Deep well installation pending
WS-058	POET-1	> T3	9 months		Maintenance, April 2023		Deep well installation pending
WS-060	POET-47	> T3	12 months		Maintenance, April 2023		
WS-061B	POET-27	> T3	12 months		Maintenance, June 2023		
WS-062	POET-44	> T3	Observed breakthrough		Maintenance and Sampling, June 2023		
WS-067	POET-39	RL < T3	12 months		Maintenance, May 2023		
WS-068	POET-12	> T3	Observed breakthrough		Maintenance and Sampling, May 2023		Deep well installation pending
WS-090	POET-4	> T3	Observed breakthrough		Maintenance and Sampling, June 2023		Deep well installation pending
WS-092	POET-22	RL < T3	12 months	Occasionally winterized	Maintenance, June 2023		Deep well installation pending
WS-096	POET-6	> T3	Observed breakthrough		Maintenance and Sampling, June 2023		
WS-097	POET-13	RL < T3	12 months		Maintenance, May 2023		Deep well installation pending
WS-099	POET-15	RL < T3	12 months		Maintenance, June 2023		Deep well accepted
WS-100	POET-24	RL < T3	12 months		Maintenance, June 2023		Deep well installation pending
WS-106R	POET-37	> T3	Observed breakthrough		Maintenance and Sampling, April 2023		
WS-109	POET-17	> T3	6 months		Maintenance, June 2023		
WS-111	POET-18	RL < T3	12 months		Maintenance, April 2023		
WS-115	POET-20	MDL < RL	12 months		Maintenance, June 2023		
WS-121A	POET-16	> T3	12 months		Maintenance, June 2023		
WS-121B	POET-36	RL < T3	12 months	Occasionally winterized	TBD		Currently winterized
WS-126	POET-23	MDL < RL	12 months	Occasionally winterized	TBD		Deep well accepted; currently winterized
WS-129	POET-38	RL < T3	12 months		Maintenance, June 2023		

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Table 2
Potable Wells in POET OM&M Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well Sample ID	POET ID	Category	GAC Change Frequency	Residency Status	Next Maintenance or Sampling Event ⁽¹⁾	Date POET System Removed From Home	Comments
WS-133	POET-33	RL < T3	12 months		Deep Well Installed	2/6/2023	
WS-146AR	POET-8	> T3	Observed breakthrough		Maintenance and Sampling, May 2023		
WS-152	POET-42	RL < T3	12 months		Maintenance, June 2023		
WS-163	POET-41	> T3	12 months		Maintenance, June 2023		

Notes:

- ⁽¹⁾ = This program is operated independent of the private drinking water well sampling program and deep well program
- Effluent from POETs not sampled for 12 months are still eligible for quarterly sampling until 12 months of data has been collected
- GAC = Granular Activated Carbon
- ID = Identification
- OM&M = Operations, Maintenance and Monitoring
- POET = Point of Entry Treatment
- TBD = To be determined based on additional sampling
- Wells abandoned due to deep well replacement are removed from this sampling program

Table 3
List of Compounds
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Analyte	June 2019 WDHS (Not Adopted by WDNR Board) ⁽¹⁾	November 2020 WDHS (Not Yet Proposed for Rulemaking by WDNR) ⁽²⁾	Units
PFBA	--	10,000	ng/L
PFPeA	--	--	ng/L
PFHxA	--	150,000	ng/L
PFHpA	--	--	ng/L
PFOA	20	--	ng/L
PFNA	--	30	ng/L
PFDA	--	300	ng/L
PFUnA	--	3,000	ng/L
PFDaA	--	500	ng/L
PFTriA	--	--	ng/L
PFTeA	--	10,000	ng/L
PFHxDA	--	--	ng/L
PFODA	--	400,000	ng/L
PFBS	--	450,000	ng/L
PFPeS	--	--	ng/L
PFHxS	--	40	ng/L
PFHpS	--	--	ng/L
PFOS	20	--	ng/L
PFNS	--	--	ng/L
PFDS	--	--	ng/L
PFDOS	--	--	ng/L
4:2 FTS	--	--	ng/L
6:2 FTS	--	--	ng/L
8:2 FTS	--	--	ng/L
10:2 FTS	--	--	ng/L
FOSA	--	20	ng/L
NMeFOSA	--	--	ng/L
NEtFOSA	--	20	ng/L
NMeFOSAA	--	--	ng/L
NEtFOSAA	--	20	ng/L
NMeFOSE	--	--	ng/L
NEtFOSE	--	20	ng/L
GenX	--	300	ng/L
DONA	--	3,000	ng/L
F-53 Major	--	--	ng/L
F-53B Minor	--	--	ng/L

Notes:

-- = No standard

ng/L = nanograms per liter

(1) = In June 2019, WDHS recommended individual groundwater standards of 20 ng/L for PFOA and PFOS. The WDNR proposed those standards through the state rulemaking process. In February 2022, the Wisconsin Natural Resource Board did not approve the proposed rulemaking for groundwater. In August 2022, WDNR promulgated a drinking water standard of 70 ng/L for PFOA and PFOS, individually and combined, for public water systems. This standard does not apply to private drinking water wells.

(2) = In November 2020 the Wisconsin DHS recommended a combined groundwater standard of 20 ng/L for: FOSA, NEtFOSE, NEtFOSA, NEtFOSAA, PFOS and PFOA. DHS also recommended individual standards for FOSA, NEtFOSE, NEtFOSA, NEtFOSAA, PFBS, PFHxS, PFNA, PFDA, PFDaA, PFHxA, PFTeA, PFUnA, PFBA, PFODA, DONA, and GenX. In June 2021, the Wisconsin Natural Resources Board approved a Statement of Scope to initiate a rulemaking for this recommendation. The WDNR has not yet proposed rules to initiate the rulemaking process to implement this recommendation; the agency's authority to do so under the Statement of Scope will expire in September 2023. In September 2022, the Governor approved a Statement of Scope to establish groundwater standards for PFOA, PFOS, PFBS and GenX (referred to as the "Four PFAS"). The Statement of Scope was approved by the Natural Resources Board in December 2022. The WDNR has not yet proposed rules to initiate the rulemaking process to implement the Statement of Scope; the agency's authority under the Statement of Scope will expire in March 2025.

Table 3
List of Compounds
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Chemical Abbreviations:

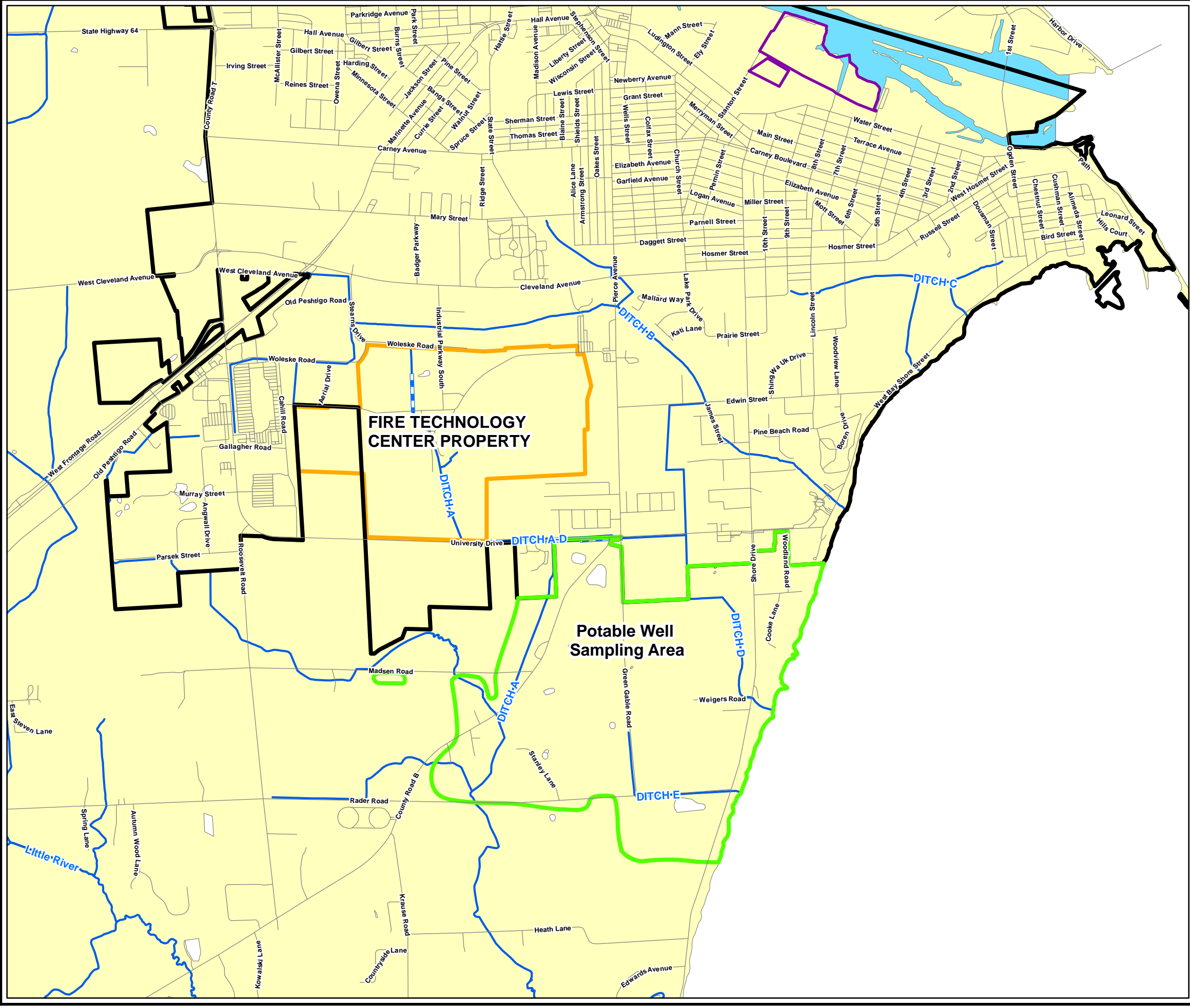
Perfluorobutanoic acid (PFBA)
Perfluoropentanoic acid (PFPeA)
Perfluorohexanoic acid (PFHxA)
Perfluoroheptanoic acid (PFHpA)
Perfluorooctanoic acid (PFOA)
Perfluorononanoic acid (PFNA)
Perfluorodecanoic acid (PFDA)
Perfluoroundecanoic acid (PFUnA)
Perfluorododecanoic acid (PFDoA)
Perfluorotridecanoic acid (PFTriA)
Perfluorotetradecanoic acid (PFTeA)
Perfluorohexadecanoic acid (PFHxDA)
Perfluorooctadecanoic acid (PFODA)
Perfluorobutane sulfonic acid (PFBS)
Perfluoropentane sulfonic acid (PFPeS)
Perfluorohexane sulfonic acid (PFHxS)
Perfluoroheptane sulfonic acid (PFHpS)
Perfluorooctane sulfonic acid (PFOS)
Perfluorononane sulfonic acid (PFNS)
Perfluorodecane sulfonic acid (PFDS)
Perfluorododecane sulfonic acid (PFDOS)
4:2 Fluorotelomer sulfonate (4:2 FTS)
6:2 Fluorotelomer sulfonate (6:2 FTS)
8:2 Fluorotelomer sulfonate (8:2 FTS)
10:2 Fluorotelomer sulfonate (10:2 FT)
Perfluorooctane sulfonamide (FOSA)
N-methylperfluorooctanesulfonamide (NMeFOSA)
N-ethylperfluorooctanesulfonamide (NEtFOSA)
N-methylperfluorooctanesulfonamidoacetic acid (MeFOSAA)
N-methylperfluorooctanesulfonamidoethanol (NEtFOSAA)
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)
Hexafluoropropylene oxide dimer acid (GenX)
4,8-Dioxa-3H-perfluorononanoic acid (DONA)
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (F-53 Major)
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)

Table 4
Potable Wells Not Sampled for 36 PFAS Compounds
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

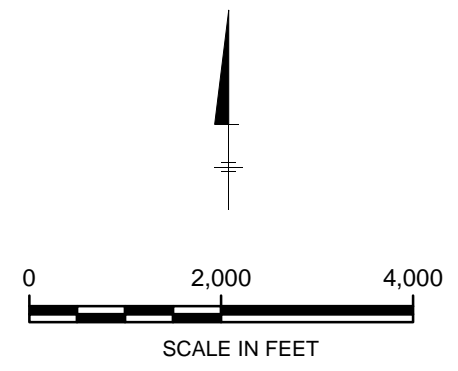
Well Sample ID	Comments
WS-002	Hospital well, not in use
WS-004	Hospital well, not in use
WS-005B	Not a drinking water well
WS-007B	Well not accessible
WS-021	Non-responsive to outreach
WS-043	Non-responsive to outreach
WS-047	Non-responsive to outreach
WS-061B	Only POET effluent sampled for 36 compounds
WS-070	Non-responsive to outreach
WS-076	Non-responsive to outreach
WS-080	Well not accessible
WS-081	Non-responsive to outreach
WS-088	House vacant and winterized
WS-091	Non-responsive to outreach
WS-095	Non-responsive to outreach
WS-105	Sample delayed by FedEx; non-responsive to rescheduling effort
WS-124	Non-responsive to outreach
WS-139	Non-responsive to outreach
WS-146B	Not a drinking water well
WS-148	Abandoned by owner
WS-155	Non-responsive to outreach

Figures

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- LEGEND:**
- POTABLE WELL SAMPLING AREA
 - STANTON STREET FACILITY BOUNDARY
 - APPROXIMATE SITE PROPERTY BOUNDARY
 - APPROXIMATE MARINETTE CITY BOUNDARY
 - WATERBODY
 - DITCH OR STREAM
 - ROAD

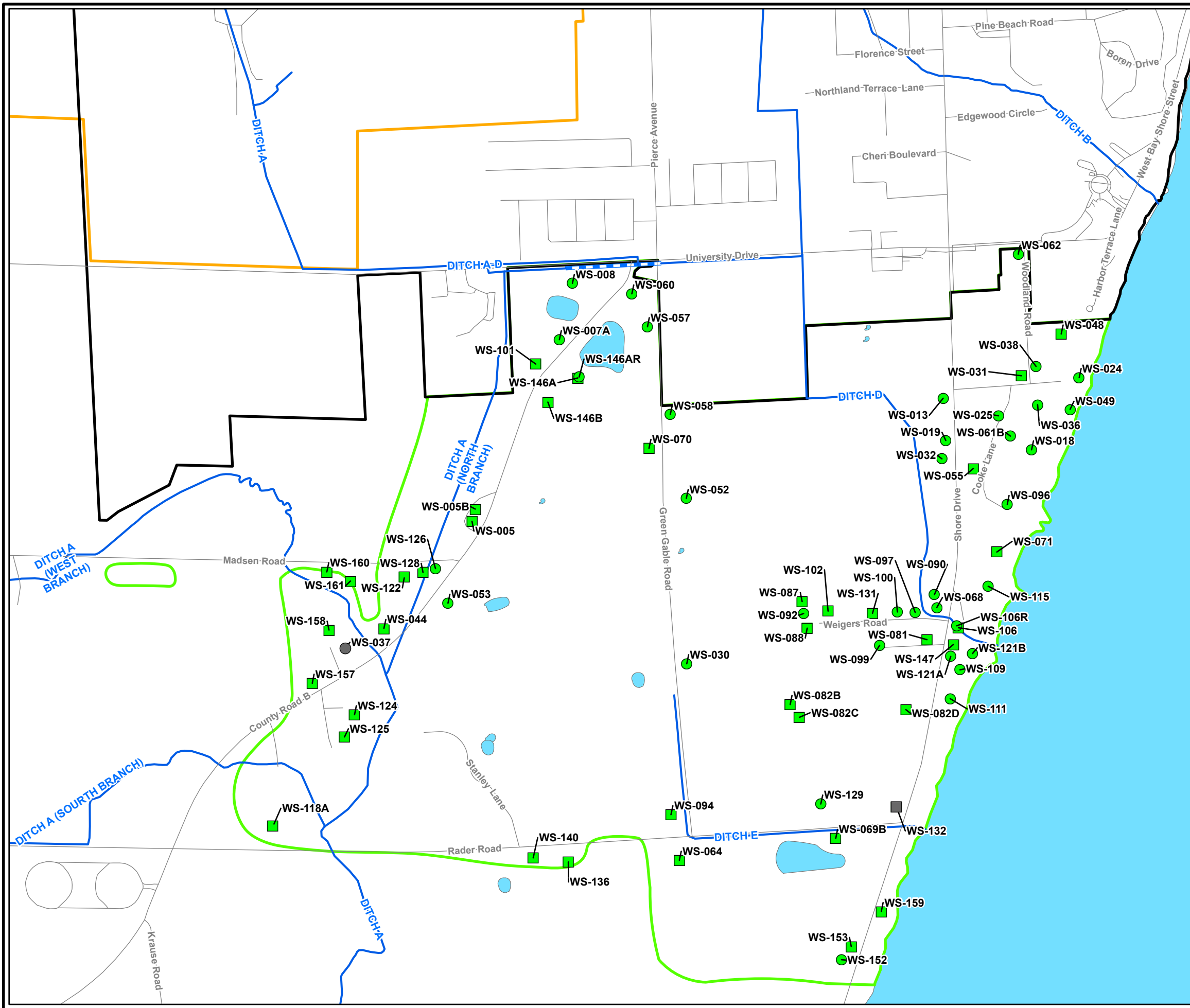


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POTABLE WELL SAMPLING AREA

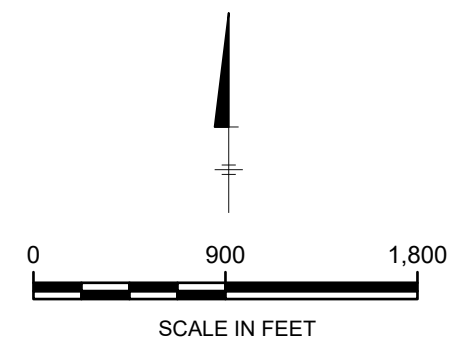
ARCADIS | **FIGURE 1**

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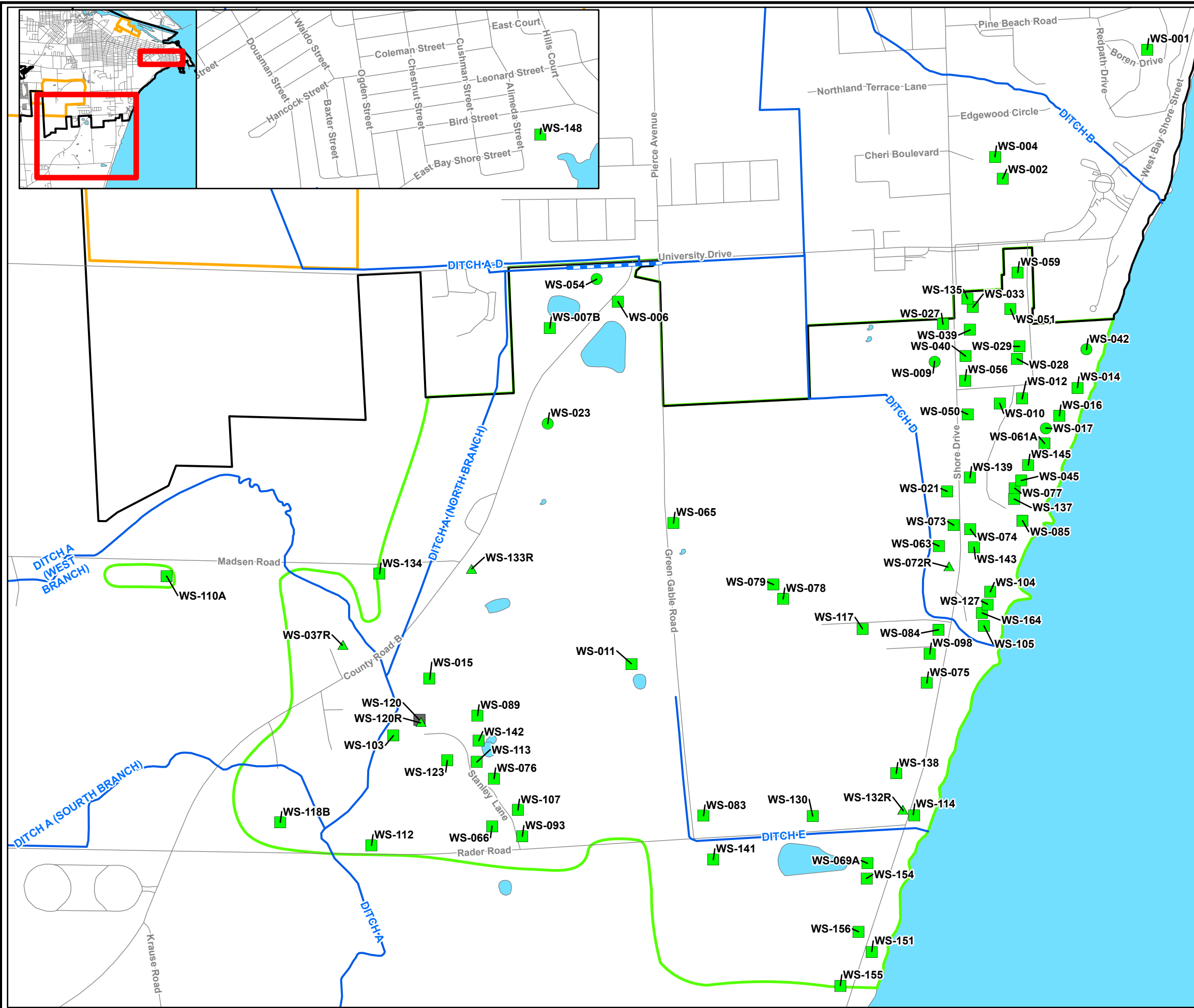
- LEGEND:**
- POTABLE WELL SAMPLING AREA
 - APPROXIMATE SITE PROPERTY BOUNDARY
 - APPROXIMATE MARINETTE CITY BOUNDARY
 - ROAD
 - DITCH OR STREAM
 - POTABLE WELL LOCATION WITH POET SYSTEM INSTALLED
 - POTABLE WELL LOCATION
 - ABANDONED POTABLE WELL LOCATION WITH POET SYSTEM REMOVED
 - ABANDONED POTABLE WELL LOCATION

- NOTES:**
1. WELL LOCATIONS ARE APPROXIMATE.
 2. ALL WELLS ARE SAND POINTS.
 3. WS-106R IS A DRILLED WELL TO 37 FEET AND WS-146B IS A HAND DRILLED WELL TO 65 FEET.
 4. WS-106R IS A REPLACEMENT WELL FOR A SAND POINT WELL THAT WAS DRILLED TO 37 FEET.



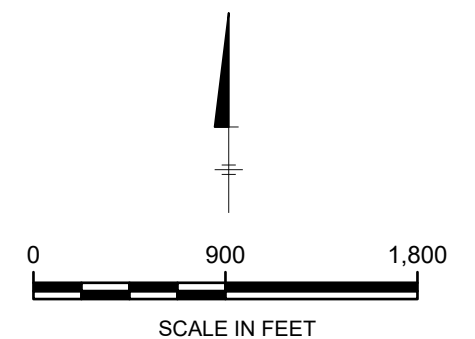
TYCO FIRE PRODUCTS LP MARINETTE, WISCONSIN	
POTABLE WELL LOCATIONS - SAND POINT WELLS < 37 FEET	
	FIGURE 2

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- LEGEND:**
- POTABLE WELL SAMPLING AREA
 - APPROXIMATE SITE PROPERTY BOUNDARY
 - APPROXIMATE MARINETTE CITY BOUNDARY
 - ROAD
 - DITCH OR STREAM
 - POTABLE WELL LOCATION WITH POET SYSTEM INSTALLED
 - POTABLE WELL LOCATION
 - ▲ DEEP REPLACEMENT POTABLE WELL LOCATION
 - ABANDONED POTABLE WELL LOCATION

- NOTES:**
1. WELL LOCATIONS ARE APPROXIMATE.
 2. ALL WELLS ARE DRILLED WELLS.

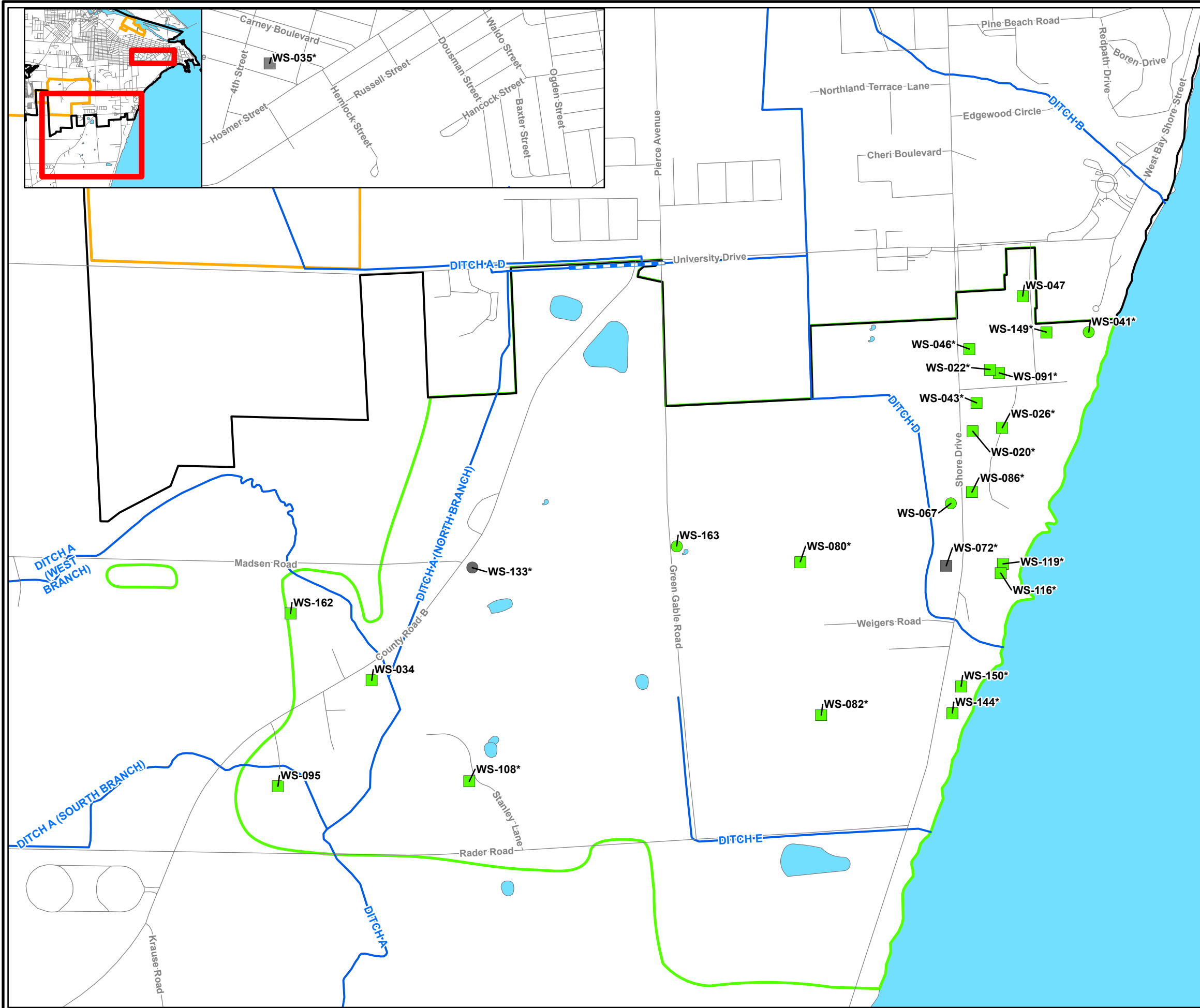


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MARINETTE, WISCONSIN

**POTABLE WELL LOCATIONS -
DRILLED WELLS > 37 FEET**

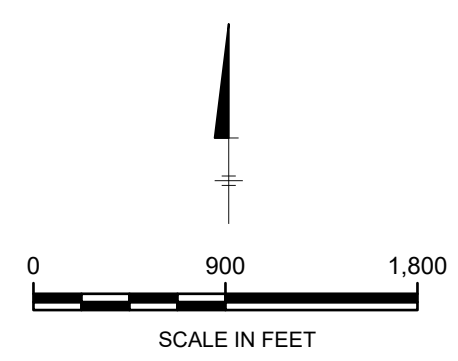
ARCADIS | **FIGURE 3**

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- LEGEND:**
- POTABLE WELL SAMPLING AREA
 - APPROXIMATE SITE PROPERTY BOUNDARY
 - APPROXIMATE MARINETTE CITY BOUNDARY
 - ROAD
 - DITCH OR STREAM
 - POTABLE WELL LOCATION WITH POET SYSTEM INSTALLED
 - POTABLE WELL LOCATION
 - ABANDONED POTABLE WELL LOCATION WITH POET SYSTEM REMOVED
 - ABANDONED POTABLE WELL LOCATION

- NOTES:**
1. WELL LOCATIONS ARE APPROXIMATE.
 2. * - INDICATES THE WELL IS DRILLED BUT THE DEPTH IS UNKNOWN.



TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

**POTABLE WELL LOCATIONS -
UNKNOWN WELL DEPTHS**

ARCADIS | **FIGURE 4**

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