



April 11, 2022

MS. DENICE NELSON
JOHNSON CONTROLS, INC
5757 N. GREEN BAY AVENUE
MILWAUKEE, WI 53209

Via Email Only to denice.karen.nelson@jci.com

SUBJECT: Response to *Additional Site Investigation Work Plan*
JCI/Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI
BRRTS #02-38-580694

Dear Ms. Nelson:

On February 11, 2022, the Wisconsin Department of Natural Resources (DNR) received the *Additional Site Investigation Work Plan* (the "SI Work Plan") for the above-referenced site (the "Site") that was submitted by Arcadis U.S., Inc. (Arcadis), on behalf of Johnson Controls, Inc. and Tyco Fire Products LP (JCI/Tyco). The *Air Pathway Site Investigation Report* (the "Air SIR") was included as Appendix A of the SI Work Plan. The SI Work Plan was accompanied by the appropriate fee of \$700, required under Wisconsin Administrative Code (Wis. Admin. Code) § NR 749.04(1) for formal DNR review and response.¹ A technical meeting held on March 1, 2022, with representatives from the DNR and JCI/Tyco was included with the DNR's fee-based review.

The DNR reviewed the SI Work Plan and also considered Tyco's December 23, 2021, letter responding to actions required for drinking water receptors in the expanded site investigation area (ESIA). The DNR does not agree with JCI/Tyco's opinion that it provided sufficient information in the site investigation to be able to conclude it is not responsible for per and polyfluoroalkyl substances (PFAS) contamination detected in the ESIA. However, the DNR agrees that the groundwater and surface water monitoring JCI/Tyco proposed in the SI Work Plan will further the understanding of the degree and extent of the PFAS contamination for the Site, including testing to evaluate PFAS in the groundwater along potential migration pathways to the ESIA.

In this letter, the DNR approves the SI Work Plan and provides JCI/Tyco with recommendations for additional monitoring for the field investigation and evaluations to include in the status report following the field work.

Background

JCI/Tyco is investigating and responding to the discharge of PFAS to the environment at the JCI/Tyco Fire Technology Center (FTC), located at 2700 Industrial Parkway South in Marinette, Wisconsin. The discharge occurred as the result of fire suppressant training, testing, research and development of PFAS-containing aqueous film forming foams (AFFF) at the Site starting in the early 1960s.

On October 27, 2021, the DNR sent a letter to JCI/Tyco advising that additional actions are required to advance and complete the site investigation (SI) according to Wis. Admin. Code ch. NR 716. Categorical deficiencies noted in the current investigation included but were not limited to: lack of an NR 141 monitoring well network, incomplete isoconcentration maps and cross-sections, limited evaluation of potential migration pathways (e.g., surface water, stormwater, wetlands and air) and refusal to address potential receptors in the ESIA.

¹ The Air SIR was reviewed as part of the evaluation of the field investigation proposed in the SI Work Plan, but this letter does not include a separate technical review of the Air SIR.

Summary of the ESIA Response Letter

On December 23, 2021, Tyco sent a letter to the DNR stating that it will not provide alternative water to impacted residents, nor will it sample private drinking water wells in the ESIA because Tyco believes it is not responsible for the PFAS contamination. Tyco further stated that *“we will design the forthcoming site investigation work plan to enhance this understanding [of the hydrogeology in and around the ESIA]. The work plan includes additional investigative activities that focus on transport pathways away from FTC in order to further demonstrate, with a robust dataset, that groundwater and surface water emanating from FTC does not reach the ESIA.”*

Summary of the SI Work Plan

On February 11, 2022, JCI/Tyco submitted the SI Work Plan to perform additional actions; namely, establishing an NR 141 groundwater monitoring well network and evaluating concentrations and migration of PFAS in the five surface water ditches at the Site. The specific data objectives were summarized in Section 4 of the SI Work Plan, and generally included:

- Evaluate the extent of the PFAS contamination in the overburden aquifer using new and existing NR 141 monitoring wells and some supplemental data from vertical aquifer profiles (VAPs).
- Evaluate the extent and potential migration of PFAS in groundwater in the weathered and shallow bedrock using new and existing NR 141 monitoring wells.
- Evaluate surface water as a transport pathway (historical and current), with a focus on Ditch A.
- Evaluate seasonal variability and other potential sources of PFAS in surface water in Ditches A - E.

Evaluation of migration of PFAS into the ESIA was limited to groundwater monitoring points that extend into the fringes of the ESIA from JCI/Tyco’s current testing area and additional characterization of gaining and losing conditions of Ditch A between the FTC and the Little River.

Groundwater Monitoring: The locations proposed for groundwater monitoring in the SI Work Plan were shown on Figures 4 and 5 and the proposed groundwater monitoring program was summarized in Section 6 and Tables 2 and 3. For the groundwater monitoring, JCI/Tyco proposed to measure water levels and sample groundwater for PFAS in accordance with the Quality Assurance Project Plan (QAPP). Two groundwater monitoring events are planned to occur between the spring and fall of 2022:

- A preliminary groundwater monitoring event is planned for 40 existing NR 141 wells and is expected to coincide with the baseline groundwater monitoring for the Groundwater Extraction and Treatment System (GETS). The GETS baseline monitoring includes 31 additional wells (nine extraction wells and 22 monitoring wells). Of the 71 wells included in this combined monitoring event, samples from 59 will be tested for the first time for PFAS.
- A second, larger groundwater monitoring event is planned to characterize an area covering over 5 square miles and to depths over 60 feet below ground surface (bgs). This event will include a combination of 85 existing NR 141 monitoring wells, approximately 40 new NR 141 monitoring wells and four standalone VAPs to be located on the western half of the FTC property. JCI/Tyco plans to install the new wells in the summer of 2022, and to use the results from the preliminary sampling and exploratory VAP sampling to select the specific locations for the wells. In general, the NR 141 monitoring wells proposed for this comprehensive monitoring event are located and screened as follows:

Summary of the Proposed Comprehensive Groundwater Monitoring Well Network

Location	Shallow Overburden (~ 0-20 ft bgs)	Deep Overburden (~ 20-40 ft bgs)	Deep Overburden (~ 40-60 ft bgs)	Deep Overburden (~ 60+ ft bgs)	Bedrock (depth varies)	TOTAL
Existing NR 141 Wells Previously Tested for PFAS						
FTC	5	7	1	n/a	1	14
Off-site	9	5	3	2	5	24
Existing NR 141 Wells Not Yet Tested for PFAS *						
FTC	3	1	0	n/a	0	4
Off-site	18	6	6	11	2	43
New NR 141 Wells (TBD, estimated)						
FTC	5	5	0	n/a	2	12
Off-site	7	10	4	1	6	28
TOTAL	47	34	14	14	16	125

n/a = not applicable (The depth to bedrock on the FTC property occurs near this depth interval.)

* Note: JCI/Tyco plans to sample 34 of these wells for first time in the preliminary groundwater monitoring event.

Surface Water Monitoring: The locations proposed for surface water monitoring in the SI Work Plan were shown on Figure 6 and the proposed evaluation and monitoring program was summarized in Section 7. In the SI Work Plan, JCI/Tyco proposed to evaluate historical flow paths, current and historical groundwater-surface water interactions and the concentration of PFAS in the surface water at selected locations along Ditches A, C, D, and E. All sampling is planned to be conducted in accordance with the QAPP and is planned to occur when ditches are flowing (i.e., not frozen) between the spring and fall of 2022.

- Bi-monthly (every 2 months) water level measurements will be collected from 12 mini piezometers to be installed in Ditches A and D. The measurements will be collected manually and used to evaluate the *current* gaining and losing conditions of these two ditches.
- Five VAPs will be installed into the overburden groundwater adjacent to Ditch A and sampled for PFAS. These samples will be used to evaluate if *historically*, Ditch A was a losing stream and contributed to PFAS contamination in the groundwater.
- Two seasonal surface water sampling events will occur in Ditches A, C, D, and E. Surface water samples will be collected from 22 locations during each event and analyzed for PFAS and total suspended solids (TSS). Stream flow will be measured/estimated at each sample point during each event.
- Additional samples and stream flow measurements will be collected bi-monthly (every 2 months) at eight of the 22 sample surface water locations that are near outlets and junctions in Ditches A, C, D, and E.
- JCI/Tyco also plans to review historical records, maps and aerial photographs to evaluate past flow paths for the surface water drainage ditches.

Reporting: JCI/Tyco proposed to submit a status report to the DNR at completion of the field investigation to document the results and make recommendations for next steps in the SI based on the findings and conclusions.

Supplement Site Investigation Information: In the SI Work Plan, JCI/Tyco provided new and updated information to supplement the on-going site investigation, which included the following:

- **Air SIR:** In November 2021, JCI/Tyco sampled the shallow soil on the FTC property at 52 locations to further evaluate deposition of PFAS from potential air migration at the Site. The Air SIR, which summarized the testing results and evaluation of that work, was provided in Appendix A of the SI Work Plan. JCI/Tyco concluded from this work that the PFAS detected in soil outside the AFFF testing areas are not a threat to groundwater and that off-site aerial transport and deposition is not a plausible pathway.

- **Isoconcentration Maps:** JCI/Tyco updated the isoconcentration plume maps and cross-sections in response to the DNR's comments from the October 2021 letter. The updated isoconcentration plume maps and cross-sections were included in Appendix B of the SI Work Plan.

DNR Review

The DNR reviewed the SI Work Plan and Tyco's December 23, 2021, letter regarding the ESIA. The DNR understands from statements made in these documents and in the March 1, 2022, meeting that JCI/Tyco did not intend the activities within SI Work Plan to result in a complete SI and the JCI/Tyco intends to use the data collected in the upcoming field investigation to inform next steps and to support determinations about responsibility for the PFAS detected in drinking water wells in the ESIA. Based on this understanding, the DNR approves the groundwater and surface water monitoring JCI/Tyco proposed to complete in 2022 and JCI/Tyco's iterative approach to advance the SI.

The DNR's approval of the SI Work Plan for groundwater and surface water does not constitute agreement with JCI/Tyco's opinion that it has provided sufficient data to date to conclude it is not responsible for PFAS contamination detected in drinking water in the ESIA.

The DNR provides the following review comments for JCI/Tyco's consideration when implementing the work proposed in the SI Work Plan:

Additional Monitoring Locations: The DNR identified additional monitoring locations that may help JCI/Tyco more efficiently achieve some of its stated data objectives during the next step in the iterative SI process. The DNR recommends that JCI/Tyco include these locations into the 2022 field investigation to the extent practicable. Locations that are not addressed in field investigation activities proposed for 2022 may persist as data gaps in the site investigation that require future action. The additional recommended monitoring locations are summarized and illustrated in **Attachment A**; they include additional groundwater monitoring wells, surface water sampling points near outlet of Ditch B and surface water sampling location near the shoreline of the Bay of Green Bay.

Continuous Stream Monitoring: It may be beneficial to include continuous flow and head measurements at a few surface water monitoring locations along Ditch A to continuously track gaining and losing conditions and correlate to flow for an extended period rather than a few discrete days.

Migration Pathway vs. Source: The DNR reminds JCI/Tyco if it is looking to demonstrate "that groundwater and surface water emanating from FTC does not reach the ESIA," it must consider all current and historical potential migration pathways when interpreting the results of the upcoming groundwater and surface water field investigation (Wis. Admin. Code § NR 716.11(5)(a)). Ultimately, JCI/Tyco must provide data to distinguish between other primary source(s) vs. possible migration pathway(s) when explaining the PFAS detected in private drinking water in the ESIA or other locations near the FTC, which are outside a simple groundwater flow path from the Outdoor Testing Area (OTA). Further evaluation of wetlands and utility corridors as potential migration pathways will likely be needed in future field investigations during this iterative SI process.

Air SIR: The DNR concurs that the concentrations of PFAS detected in the shallow soil samples collected from undisturbed (non-wetland) areas on the FTC property do not pose a direct contact risk and are *currently* below concentrations calculated by JCI/Tyco to pose a threat to groundwater. (The current concentrations of PFAS in the soil may not reflect historical concentrations because PFAS may have transformed or migrated since the time of deposition.)

Until an air monitoring analysis is done surrounding a source, an air pathway cannot be fully ruled out. In the absence of an approved air monitoring method, a quantitative air analysis in the area cannot be completed;

therefore, additional field investigation to evaluate air as a migration pathway for PFAS from the FTC is not recommended at this time.

Qualitative information available to the DNR indicate that air should remain a possible migration pathway to consider when interpreting data collected from other media during the site investigation. For one, residents in the area have reported that plumes of smoke occasionally migrated from the FTC onto their property. Secondly, qualitative sampling of precipitation collected and analyzed by the DNR within the area indicated a unique signature when compared with data from other Wisconsin sites in more remote locations.²

Isoconcentration Maps: The isoconcentration maps and cross-sections provided in the SI Work Plan were revised to address the DNR's comments. These visual aids should be updated with the results from the upcoming field investigation; these updated versions are needed to communicate with stakeholders, identify areas with data gaps or uncertainty and to develop scopes of work to complete the SI (Wis. Admin. Code § NR 716.17(1)).

Next Steps

The next steps related to this SI Work Plan are as follows:

- 1) *Field Investigation:* JCI/Tyco to complete the field investigation according to the SI Work Plan. The DNR recommends that JCI/Tyco include the additional monitoring elements summarized in **Attachment A**. JCI/Tyco may implement these recommendations without further review and approval by the DNR.
- 2) *Status Report:* JCI/Tyco should submit the site investigation status report within **60 days** after completion of the field investigation and receipt of the laboratory data (Wis. Admin. Code § NR 716.15(1)(a)). The status report should, at a minimum, include the items summarized at the end of the DNR's October 27, 2021, letter, plus the following items:
 - a. The historical records and interpretation of historical surface water flow paths near the FTC (Wis. Admin. Code § NR 716.09(2)(e)).
 - b. Updated isoconcentration maps and cross-sections that incorporate the new groundwater data (Wis. Admin. Code §§ NR 716.15(4)(c) and (d)).
 - c. Updated evaluation of groundwater flow patterns and gradients (vertical and horizontal) based on the new groundwater and surface water data (Wis. Admin. Code §§ NR 716.15(3)(e) and NR 716.15 (4)(b)).
 - d. Evaluation of PFAS flux into the Bay of Green Bay through surface water and groundwater flow from the Site based on the new field investigation data (Wis. Admin. Code § NR 716.15(3)(h)).
 - e. Evaluation of data that consider current and historical potential migration pathways and inclusion of plans to collect additional field investigation data, if needed, to support a distinction between other sources and other migration pathways into the ESIA. (A simple groundwater flow path from the OTA may not address all potential migration pathways; data are needed to rule out other potential migration pathways and sources.) (Wis. Admin. Code § NR 716.11(5)(a)).

As a reminder, this Site is subject to an enforcement action and therefore all submittals to the DNR under Wis. Admin. Code chs. NR 700-799 and submittals directed by the DNR must be accompanied by an Wis. Admin. Code ch. NR 749 fee per Wis. Stat. § 292.94. These fees are not pro-ratable or refundable per Wis. Admin. Code

² Submitted for publication in March 2022 to Atmospheric Environment Journal. Pfothenauer, D., Sellers, A., Olson, M., Praedel, K., and Shafer, M. PFAS Concentrations and Deposition in Precipitation: An Intensive 5-Month Study at National Atmospheric Deposition Program – National Trends Sites (NADP-NTN) across Wisconsin, USA. Manuscript in review.

§ NR 749.04(1). If you have any questions about whether to include a fee with a submittal, please contact DNR staff prior to submitting a document without a fee.

If you have any questions about this letter, please contact me, the DNR Project Manager, at (608) 622-8606 or Alyssa.Sellwood@wisconsin.gov.

Sincerely,

A handwritten signature in cursive script that reads "Alyssa Sellwood".

Alyssa Sellwood, PE
Complex Sites Project Manager
Remediation & Redevelopment Program

Attachments: Attachment A: Recommendations for Additional Monitoring Locations

cc: Scott Potter, Arcadis (via email: Scott.Potter@arcadis.com)
Jodie Peotter, DNR (via email: Jodie.Peotter@wisconsin.gov)

Appendix A – Recommendations for Additional Monitoring Locations

Recommended Actions	Data Objective(s)	Basis of Recommendation
Install and sample additional NR 141 well(s) in overburden at A to E .	<p>Assess plume stability and attenuation.</p> <p>Delineate the eastern and vertical extent of the plume.</p>	<p>Much of the off-site groundwater plume was interpreted from the results of a one-time sampling event from VAPs. NR 141 monitoring wells are recommended in additional locations in the interior and eastern/southeastern portions of the plume to assess stability and attenuation and to define the extent of the contamination. The eastern extent of the groundwater plume is needed to characterize the flux of PFAS from groundwater to Bay of Green Bay.</p> <p>Because the overburden thickens to over 75 feet to the south and east of the FTC, and because the highest concentrations detected on-site were detected at a depth of approximate 50 feet bgs, wells nested at various depths are needed to characterize the plume.</p>
Install and sample additional NR 141 well(s) in overburden and shallow bedrock wells at F and G	<p>Delineate the southwestern portions of the plume</p> <p>Assess if losing conditions in Ditch A resulted in impacts to groundwater</p>	<p>Previous exploratory sampling at VAP-01 and VAP-09 identified PFAS in groundwater near sections of Ditch A that were observed to have losing stream conditions. These areas also align with the steep bedrock ridge slope running southwest from the site. Additional NR 141 well(s) at F can be used to evaluate if losing conditions of Ditch A contributed to PFAS in groundwater detected at VAP-09 and wells paired at F and G can be used to evaluate potential for PFAS migration along the bedrock slope.</p>
Measure the depth of HWM wells located near Building 115 and sample select wells for PFAS (Area “ H ”).	<p>Delineate the PFAS concentrations in the overburden.</p> <p>groundwater on-site west of the OTA</p>	<p>The groundwater to the west and south of Building 115 has not been tested for PFAS, and existing monitoring wells present in this area provide an opportunity to characterize this area. Sampling a few of these wells (e.g., HWM-2-3S, -2-3D, and -5) during the preliminary groundwater monitoring event could supplement and strengthen the conclusions from the proposed VAP sampling in this area. If HMW wells are not sampled, additional VAP sampling is recommended in this area to the west of the OTA.</p>
Include bi-monthly surface water sampling and stream gaging in Ditch B near SW-15 .	<p>Identify areas where surface water in ditches exceed standards.</p> <p>Evaluate seasonal range in conditions.</p>	<p>The DNR understands that surface water conditions in Ditch B will be evaluated during the long-term monitoring programs for the GETS and the Ditch B treatment system; however, it was also understood that portions of Ditch B downstream of SW-39 were not included in these remedial monitoring programs and would be included the SI field investigation. Direct measurements of the surface water quality at the outlet of Ditch B to Green Bay, collected at the same time as for the other ditches, is a key parameter in the characterization of the Site.</p>
Include seasonal surface water sampling (<i>and pore water</i>) at six near-shore locations in Green Bay (GB-a to GB-f).	<p>Show seasonal concentration range in surface water quality.</p> <p><i>(Evaluate PFAS flux to Bay of Green Bay)</i></p>	<p>Previous surface water testing in Green Bay near the outlet of Ditch B detected concentrations of PFAS at concentrations that would exceed current recommended standards. Additional testing is recommended to characterize PFAS in surface water along the shoreline of Green Bay that spans the outlets of the ditches and groundwater contaminated with PFAS from the FTC. <i>(Pore water sampling along the shoreline area may help to characterize the flux of PFAS to Green Bay from the groundwater).</i></p>

Notes:

Italic = Suggested data objective, not included in the SI Work Plan

The Following Set of figures are from JCI/Tyco's SI Work Plan and were modified by the DNR for illustration purposes.

The DNR inserted the following points onto the figures:






-  New NR 141 Monitoring Well(s): Recommended by the DNR as additions to the groundwater monitoring plan
-  Surface Water Monitoring Location: Recommended by DNR as additions to the surface water monitoring plan
-  Existing NR 141 Monitoring Well(s): Previously tested for PFAS, and proposed for PFAS sampling in the SI Work Plan
-  Existing NR 141 Monitoring Well(s): NOT previously tested for PFAS, but proposed for PFAS sampling in the SI Work Plan
-  New NR 141 Monitoring Well(s): Proposed for installation and PFAS sampling in the SI Work Plan

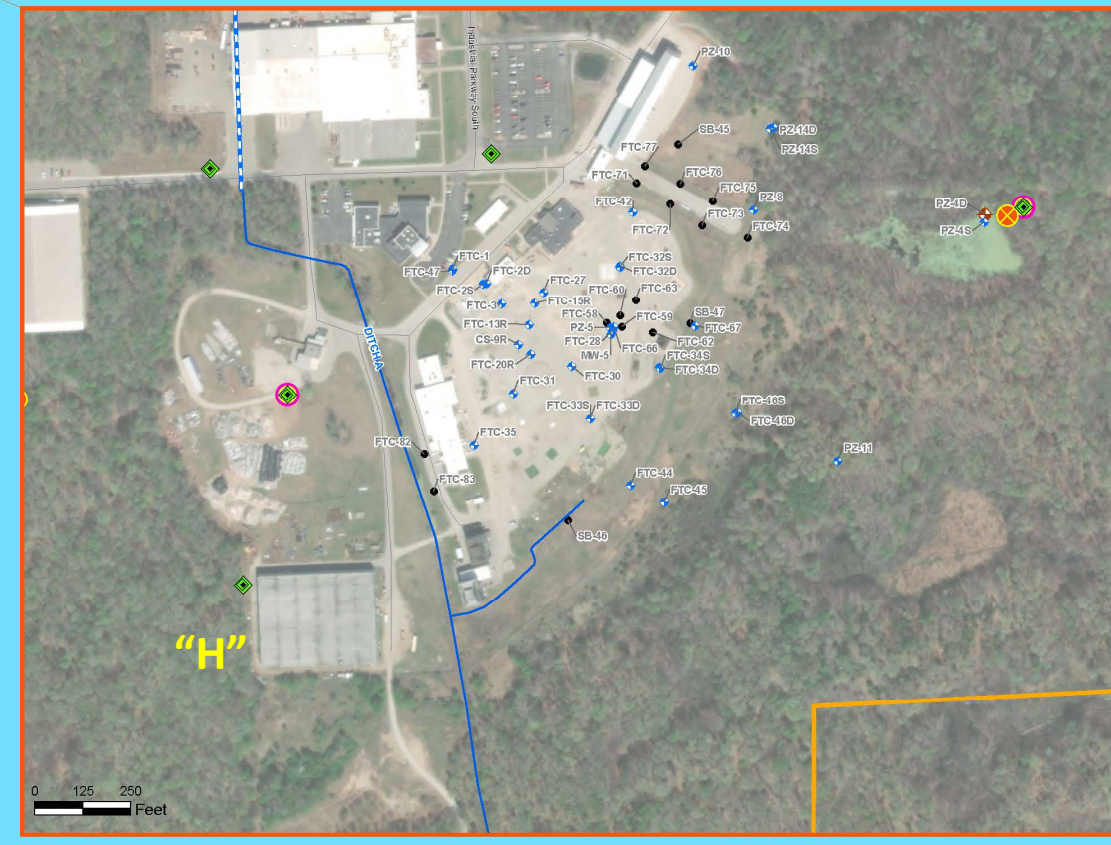
Figure 5 from SI Work Plan
Groundwater Monitoring Locations
DNR Recommendations A to H Added to Figure

LEGEND:

- APPROXIMATE MARINETTE CITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- ROAD
- WATERBODY
- CULVERT
- DITCH OR STREAM
- STANTON STREET HYDRAULIC BARRIER WALL
- ◆ OVERBURDEN MONITORING WELL OR PIEZOMETER
- ♦ BEDROCK MONITORING WELL OR PIEZOMETER
- GROUNDWATER SAMPLING BORING
- ◆ OVERBURDEN MONITORING WELL (STANTON STREET)
- ♦ BEDROCK MONITORING WELL (STANTON STREET)
- ◆ PROPOSED LOCATIONS
- ◆ VERTICAL AQUIFER PROFILING SAMPLING LOCATION
- ◆ OVERBURDEN MONITORING WELL
- ◆ SHALLOW BEDROCK MONITORING WELL
- ◆ DEEP BEDROCK MONITORING WELL
- ◆ SHALLOW BEDROCK MONITORING WELL (CONTINGENCY)

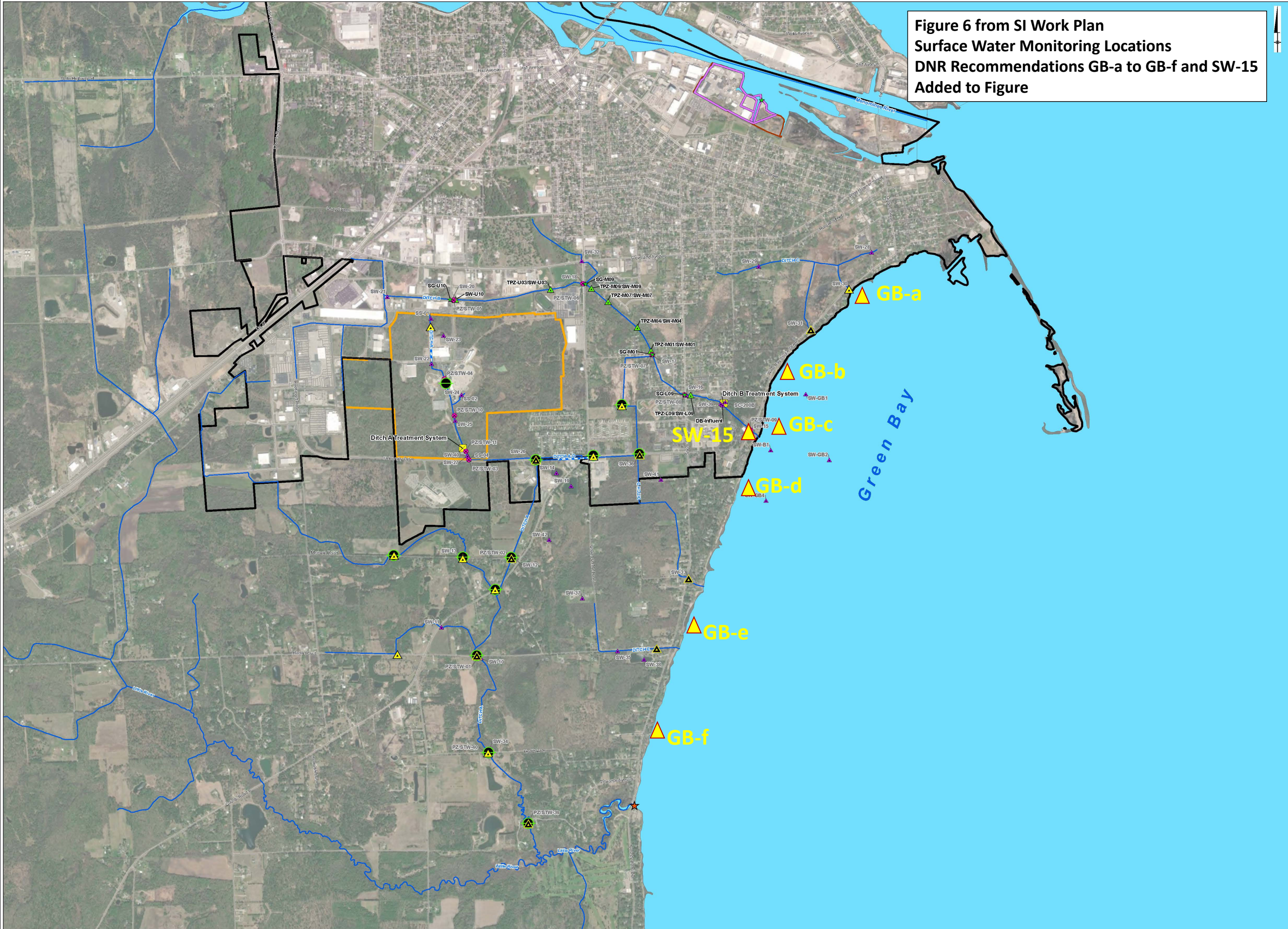
NOTES:

1. THE DEEP BEDROCK MONITORING WELL LOCATION SHOWN NEAR THE PZ-29 CLUSTER WILL BE INSTALLED WITH THE PZ-28 CLUSTER OR THE PZ-26 CLUSTER BASED ON THE RESULTS OF THE PRELIMINARY GROUNDWATER SAMPLING EVENT.
2. WELLS LOCATED WITHIN THE STANTON STREET HYDRAULIC BARRIER WALL ARE NOT SHOWN ON THIS FIGURE.
3. A LOCATION IDENTIFIED AS A GROUNDWATER SAMPLING BORING IS INCLUSIVE OF GROUNDWATER SAMPLES COLLECTED FROM VERTICAL AQUIFER PROFILING (VAP) BORINGS AND OTHER TEMPORARY SAMPLING LOCATIONS.
4. AERIAL IMAGERY SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AERODIG, IGN, AND THE GIS USER COMMUNITY.



City Administration/Planning Division/MD/VC. Created By: Last Saved By: MSH/MS
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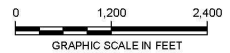
Figure 6 from SI Work Plan
Surface Water Monitoring Locations
DNR Recommendations GB-a to GB-f and SW-15
Added to Figure



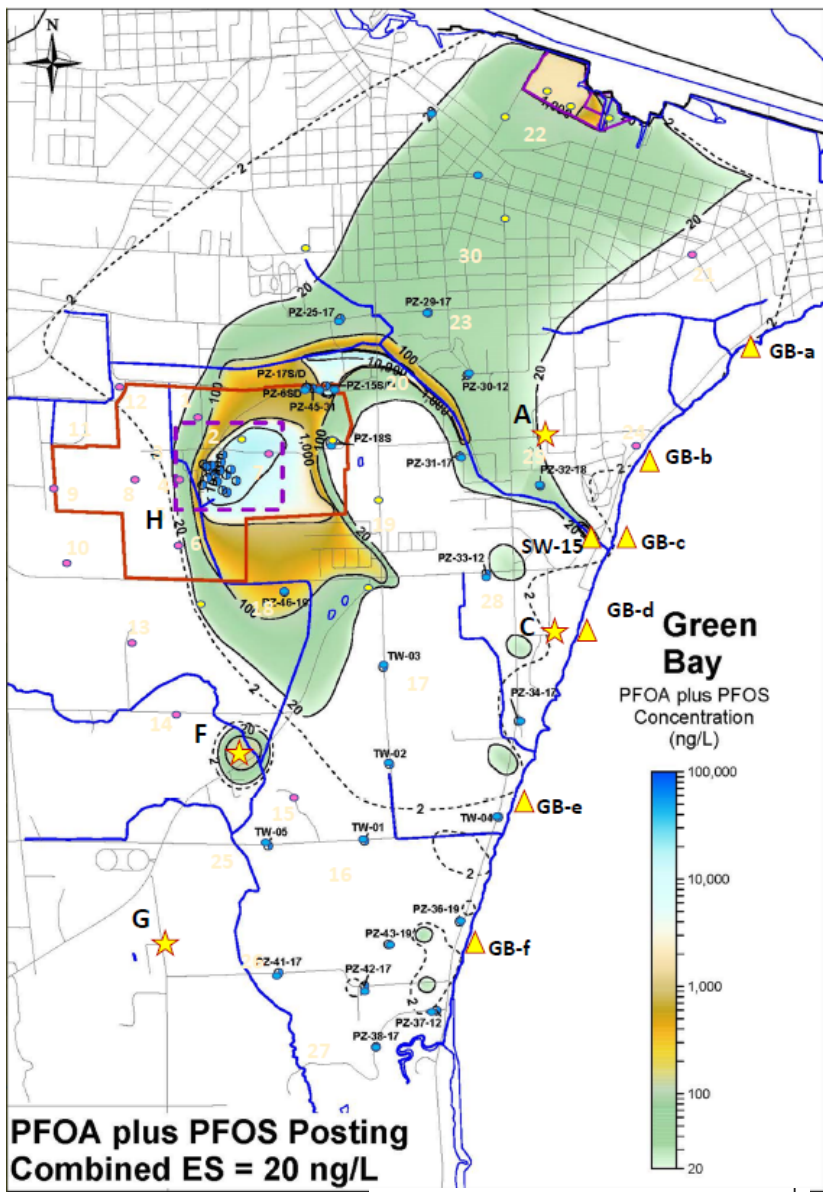
- LEGEND:**
- APPROXIMATE MARINETTE CITY BOUNDARY
 - APPROXIMATE SITE PROPERTY BOUNDARY
 - APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
 - ROAD
 - WATERBODY
 - SURFACE WATER TREATMENT SYSTEM
 - CULVERT
 - DITCH OR STREAM
 - STANTON STREET HYDRAULIC BARRIER WALL
 - DITCH MINI-PIEZOMETER / STILLING WELL PAIR
 - DITCH MINI-PIEZOMETER
 - SURFACE WATER SAMPLE
 - GETS LTM PRE-STARTUP SURFACE WATER SAMPLE
 - STAFF GAUGE
- PROPOSED LOCATIONS**
- DITCH MINI-PIEZOMETER
 - SURVEYED BENCHMARK (SURFACE WATER ELEVATION MEASUREMENT POINT)
 - WET-DRY SEASON SNAP-SHOT SURFACEWATER SAMPLE LOCATION
 - WET-DRY SEASON SNAP-SHOT + BI-MONTHLY SURFACEWATER SAMPLE LOCATION

NOTES:

1. BECAUSE MONITORING OF DITCH B SURFACE WATER IS ON-GOING (RELATED TO THE GETS LONG-TERM MONITORING PLAN), NO ADDITIONAL SURFACE WATER SAMPLE LOCATIONS ARE PROPOSED ON DITCH B IN THIS WORK PLAN.
2. AN ADDITIONAL 5 WET-DRY SEASON SNAP-SHOT SURFACE WATER SAMPLE LOCATIONS WILL BE IDENTIFIED TO THE WEST OF THE SITE FOLLOWING RECONNAISSANCE.
3. AERIAL IMAGERY SOURCE: ESRI, MAXAR, GEODEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AERGRID, IGN, AND THE GIS USER COMMUNITY.

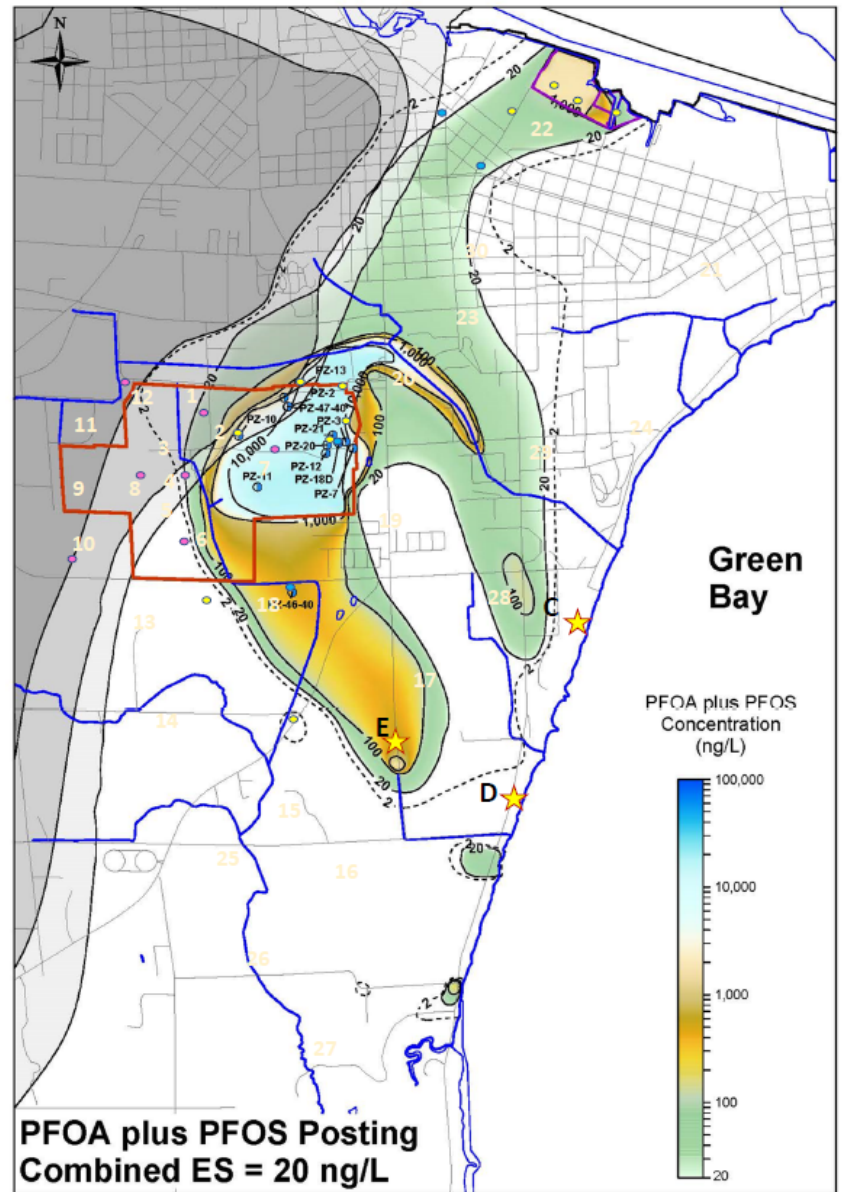


City of Marquette, WI, DuPont, Arcadis, and Tyco Fire Technology Center. All rights reserved.

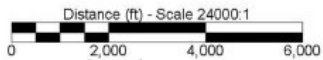
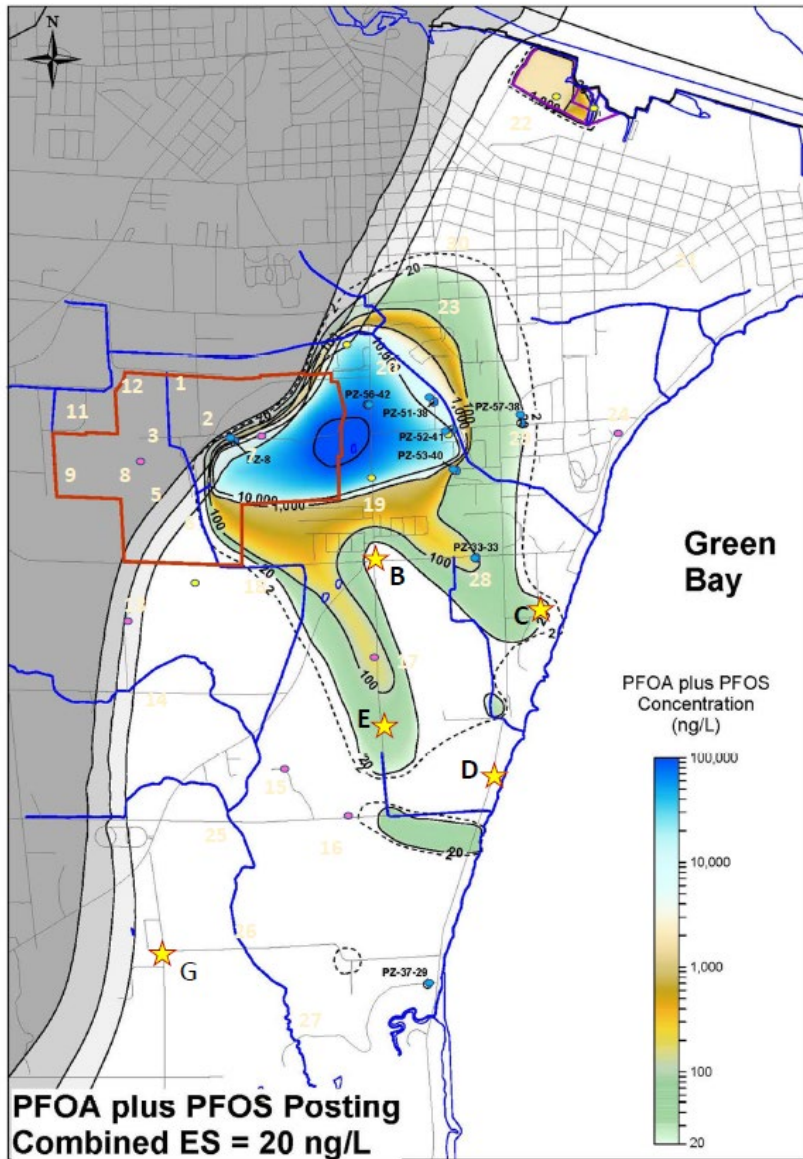


Figures are taken from SI Work Plan Appendix B and modified for illustration purposes.

TYCO FIRE PRODUCTS LP MARINETTE, WISCONSIN	
NR 141 Compliant Monitoring Well Locations not Sampled for PFAS overlying PFOA plus PFOS Plume Contours of Recent Sampling Results Between Land Surface and Elevation 575 ft	
	FIGURE 1S



TYCO FIRE PRODUCTS LP MARINETTE, WISCONSIN	
NR 141 Compliant Monitoring Well Locations not Sampled for PFAS overlying PFOA plus PFOS Plume Contours of Recent Sampling Results Between Elevation 575 and Elevation 565 ft	
	FIGURE 2S



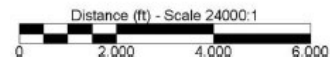
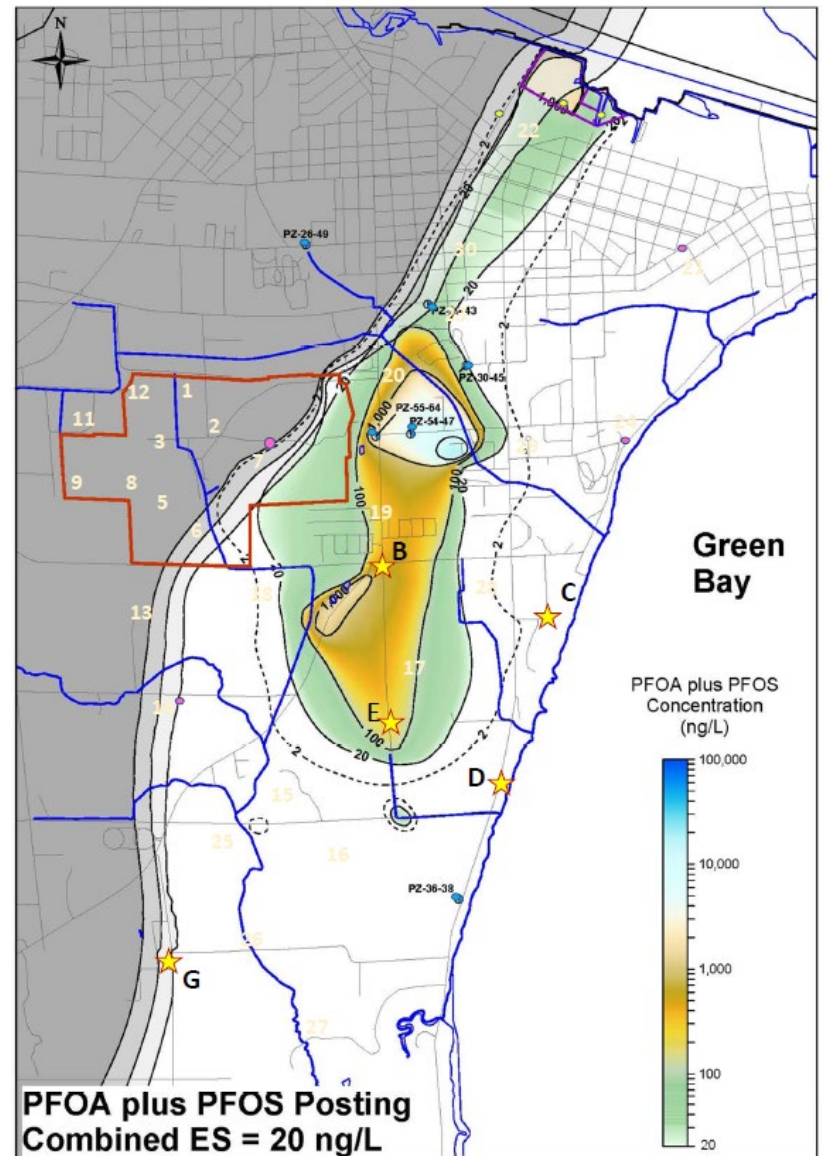
TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

NR 141 Compliant Monitoring Well Locations not
Sampled for PFAS overlying PFOA plus PFOS Plume
Contours of Recent Sampling Results Between
Elevation 565 and Elevation 555 ft

ARCADIS

FIGURE
3S

OR



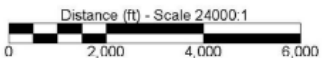
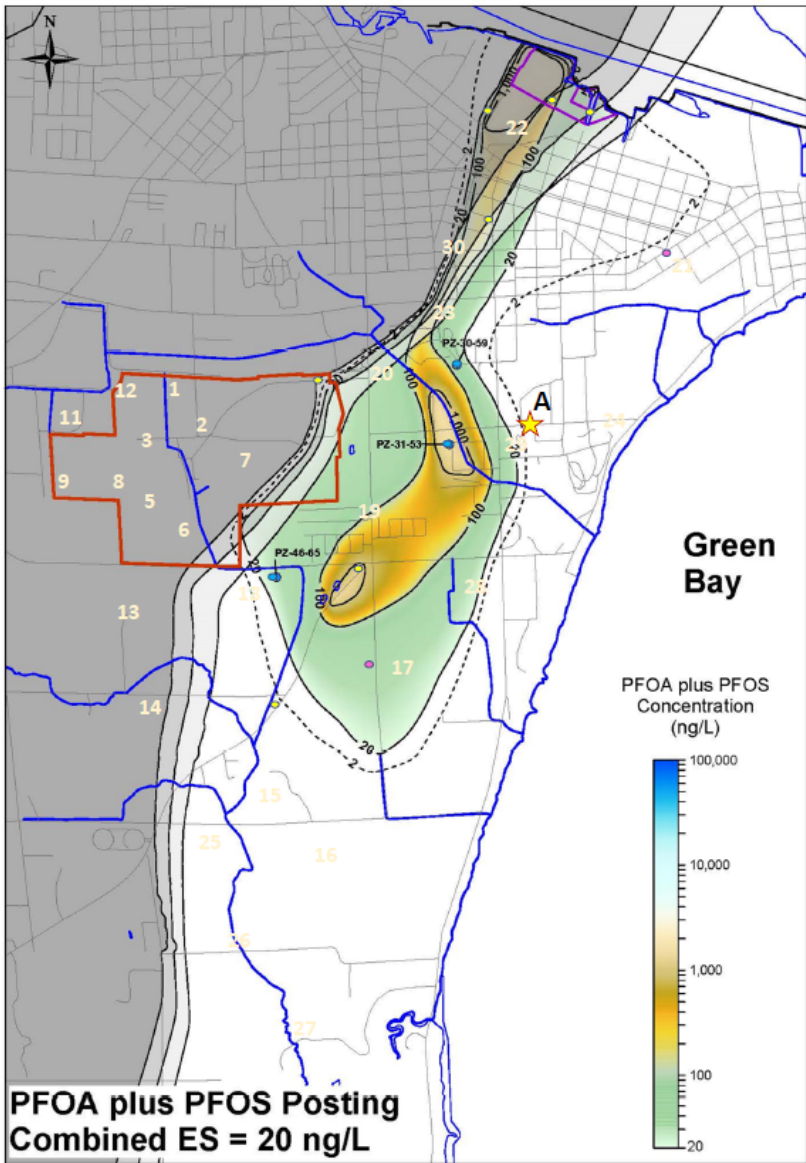
TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

NR 141 Compliant Monitoring Well Locations not
Sampled for PFAS overlying PFOA plus PFOS Plume
Contours of Recent Sampling Results Between
Elevation 555 and Elevation 545 ft

ARCADIS

FIGURE
4S

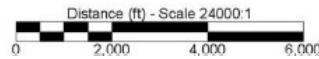
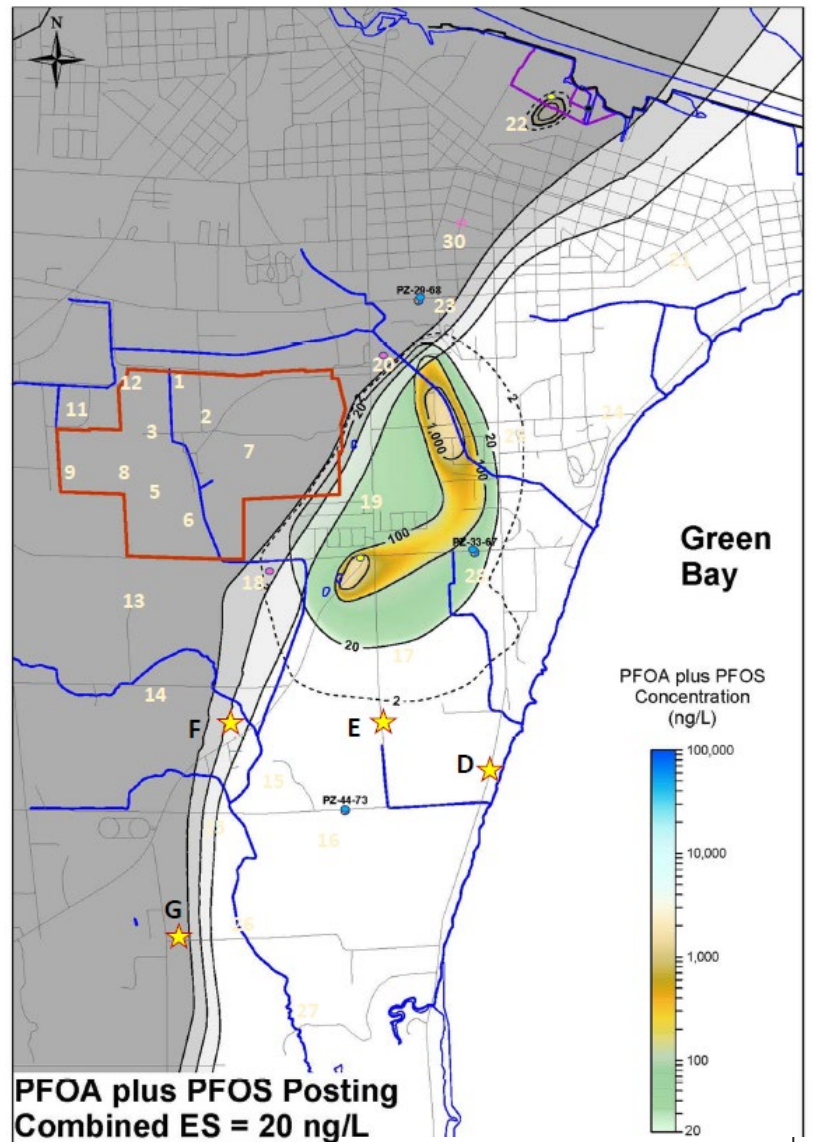
Figures are taken from SI Work
Plan Appendix B and modified
for illustration purposes.



TYGO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

NR 141 Compliant Monitoring Well Locations not
Sampled for PFAS overlying PFOA plus PFOS Plume
Contours of Recent Sampling Results Between
Elevation 545 and Elevation 535 ft.

ARCADIS FIGURE
5S

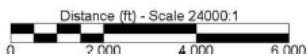
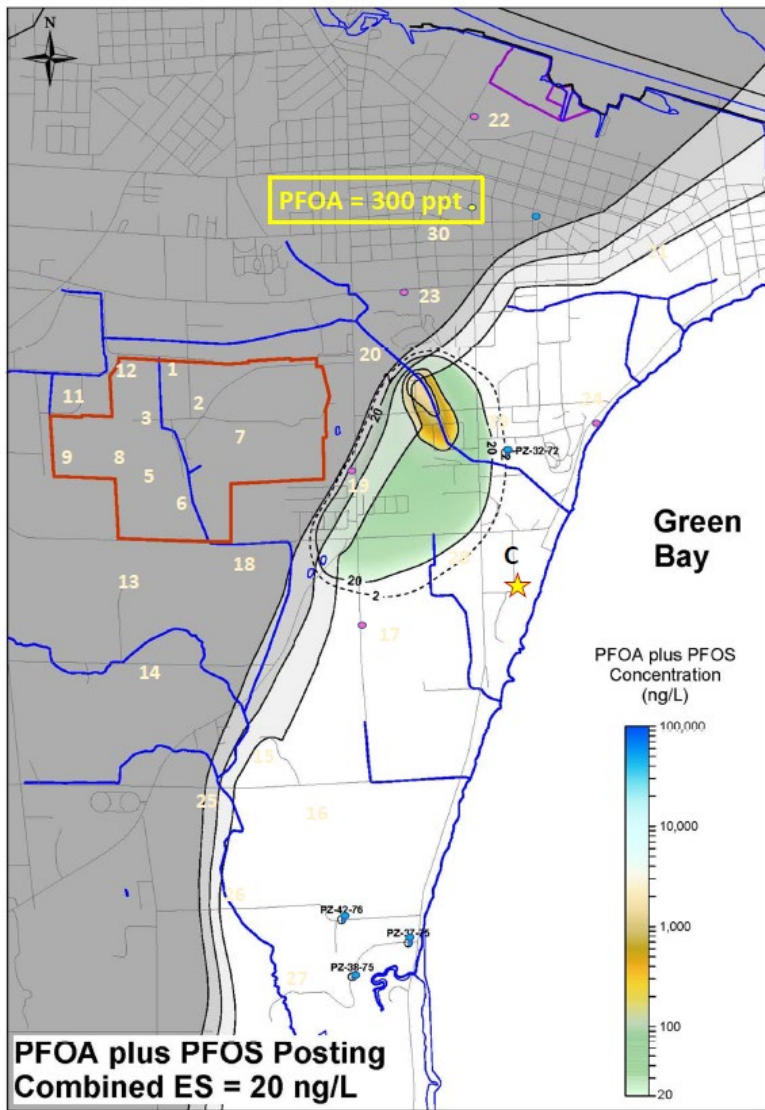


TYGO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

NR 141 Compliant Monitoring Well Locations not
Sampled for PFAS overlying PFOA plus PFOS Plume
Contours of Recent Sampling Results Between
Elevation 535 and Elevation 525 ft.

ARCADIS FIGURE
6S

Figures are taken from SI Work Plan Appendix B and modified for illustration purposes.

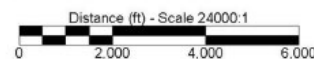
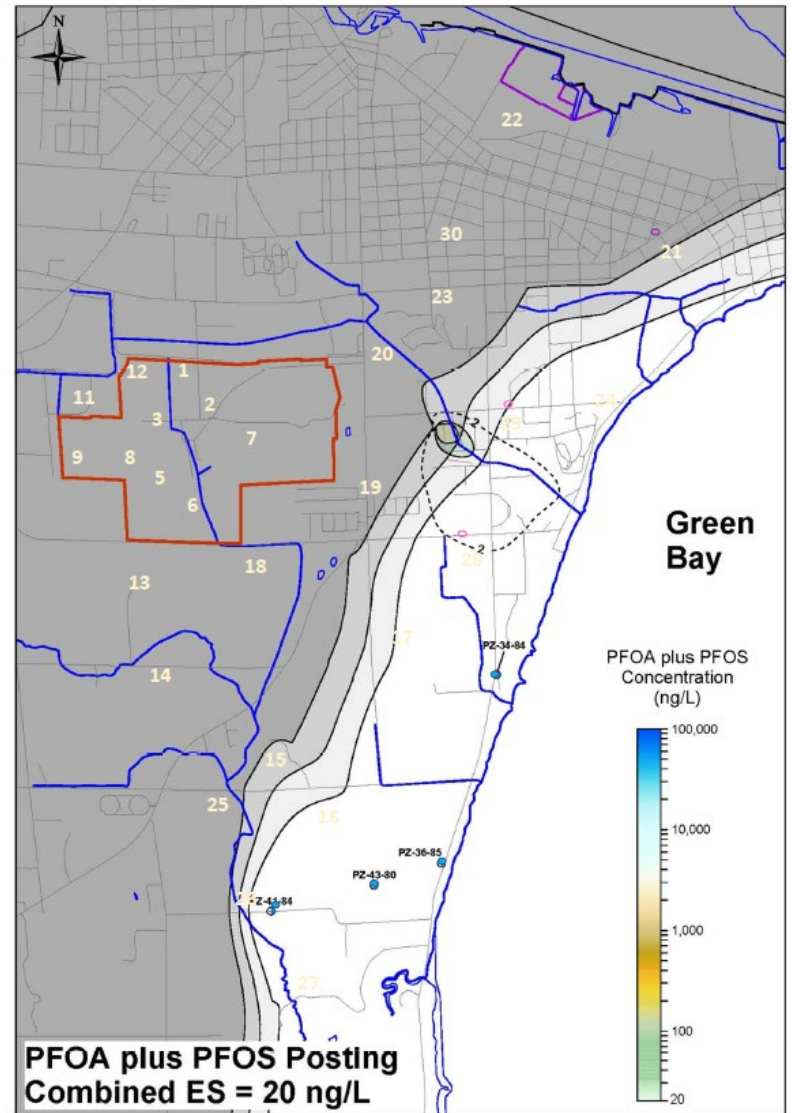


TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

NR 141 Compliant Monitoring Well Locations not Sampled for PFAS overlying PFOA plus PFOS Plume Contours of Recent Sampling Results Between Elevation 525 and Elevation 515 ft

ARCADIS

FIGURE
7S



TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

NR 141 Compliant Monitoring Well Locations not Sampled for PFAS overlying PFOA plus PFOS Plume Contours of Recent Sampling Results Between Elevation 515 and Elevation 505 ft

ARCADIS

FIGURE
8S

Figures are taken from SI Work Plan Appendix B and modified for illustration purposes.