

Mr. David Neste
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727

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Subject:
Response to Review of Heath Lane Area Site Investigation Work Plan
Tyco Fire Technology Center, PFCs, 2700 Industrial Parkway South, Marinette,
Wisconsin.
BRRTS Activity#: 02-38-580694

ENVIRONMENT

Dear Mr. Neste:

Date:
August 11, 2019

On behalf of Tyco Fire Products, LP (Tyco), Arcadis US, Inc. (Arcadis) has prepared this response to the Wisconsin Department of Natural Resources (WDNR) *Review of Heath Lane Area Site Investigation Work Plan*. Arcadis submitted the Heath Lane Area Site Investigation Work Plan (Work Plan) for review and approval to the Wisconsin Department of Natural Resources (WDNR) on May 29, 2019. The WDNR responded to the Work Plan on July 11 and was in general agreement with the approach and directed Tyco to proceed with the work. Also included in the response was a request for Tyco to consider expanding the residential well sampling program. Specifically, the WDNR stated:

Contact:
Ben Verburg

Phone:
414.277.6231

Email:
Ben.verburg@arcadis.com

“Other Considerations: Pursuant to Wis. Admin. Code §§ NR 716.11 (4), (5)(b), and 5(c), the Department requests JCI collect samples from the four (4) private potable wells, previously sampled by the City of Marinette, and conduct laboratory analysis for per- and poly-fluoroalkyl substances (PFAS) compounds. The potable wells to be sampled are located at:

1. 2017 Marinette Avenue;
2. 2025 Marinette Avenue;
3. 2033 Marinette Avenue, and;
4. 4161 Frontage Road.

Private potable well sampling results must be sent to the DNR and property owner(s), and occupants, from which samples have been collected, within 10 days of receipt (Wis. Admin. Code §NR716.14). Please also submit a copy to Warren Howard at the City of Marinette.

Within 30 days of the date of this letter, please provide a written response to the DNR’s request to sample the four (4) potable wells in the City of Marinette.”

Tyco Response: Pursuant to the request from the WDNR, Arcadis, on behalf of Tyco, formally responds to the *Other Considerations* request. Note that the

location of the potable wells the WDNR asked Tyco to sample are approximately 2.5 miles northwest of the Heath Lane Area and have no connection to the evaluation associated with Heath Lane.

To respond to the *Other Considerations* request, figures from the project's most-recent *Data Summary Report* submitted to the WDNR on March 8, 2019 were used to prepare supporting attachments. Attached are **Figures 8 and 9** from the *Data Summary Report*, which presents the potentiometric surface map for August 2018 and November 2018, respectively.

The potable wells proposed to be sampled are located at least 2,000 feet west of the Site and are upgradient of the Site based on the observed direction of groundwater flow. Site investigations completed at the Site and surrounding area have shown that groundwater flows from the facility to the northeast, east and southeast, trending toward Ditch B, Green Bay and Ditch A. The groundwater flow patterns indicated by the potentiometric surface are supported by the observed distribution of PFAS in groundwater. The highest concentrations of PFAS in groundwater originate on-site, and then trend generally eastward, following the flow paths predicted by the hydraulic gradient.

The City of Marinette sampled the four potable wells referenced in this letter in 2018. Table 1 presents the potable well sample analytical results. Two of the potable wells had no detections for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). One potable well had a PFOA detection above the limit of detection (LOD) and below the limit of quantification (LOQ). One potable well had a detection of PFOA above the LOQ (3.6 parts-per-trillion (ppt) or nanograms per liter (ng/L)). Neither of these wells had detections of PFOS.

Of the two analytical detections, both are significantly below the U.S. Environmental Protection Agency (U.S.EPA) lifetime Health Advisory Level (HAL) of 70 ppt. Additionally, they also are well below the State of Wisconsin proposed ch. NR140 Groundwater Enforcement Standard (ES) of 20 ppt, pursuant to Wis. Admin. Code.

Table 1. Potable Well Sample Analytical Results, Marinette, Wisconsin.

Sample Location	Sample Date	PFOA (ppt)	PFOS (ppt)
2017 Marinette Ave	6-14-2018	3.64 LOD=0.70 LOQ=2.2	Non-Detectable LOD=1.5 LOQ=4.7
2025 Marinette Ave	6-14-2018	Non-Detectable LOD=0.70 LOQ=2.2	Non-Detectable LOD=1.5 LOQ=4.7
2033 Marinette Ave	6-14-2018	Non-Detectable LOD=0.70 LOQ=2.2	Non-Detectable LOD=1.5 LOQ=4.7
4161 Frontage Road	7-27-2018	[2.35] LOD=1.2 LOQ=3.9	Non-Detectable LOD=1.7 LOQ=5.3

David Neste
Wisconsin Department of Natural Resources
August 12, 2019

Source: City of Marinette website. <https://www.marinette.wi.us/361/PFOA-and-PFOS-Investigation#modalContainerOptions>

Notes:

ppt parts-per-trillion or nanograms per liter (ng/L)

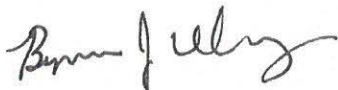
Non-detectable Concentration is below the limit of detection

Based on the above information, there is no data that suggests that there is a potential for the potable wells to be impacted by PFAS originating from the Site. As we have consistently maintained, the investigations and potential future remedial actions have been and should continue to be based on science and data. The science and existing data do not support Tyco to perform sampling of these private wells. Therefore, Tyco respectfully declines the WDNR request to sample the above referenced private wells.

If you have any questions, please let me know.

Sincerely,

Arcadis U.S., Inc.



Benjamin J. Verburg, P.E.
Principal Engineer

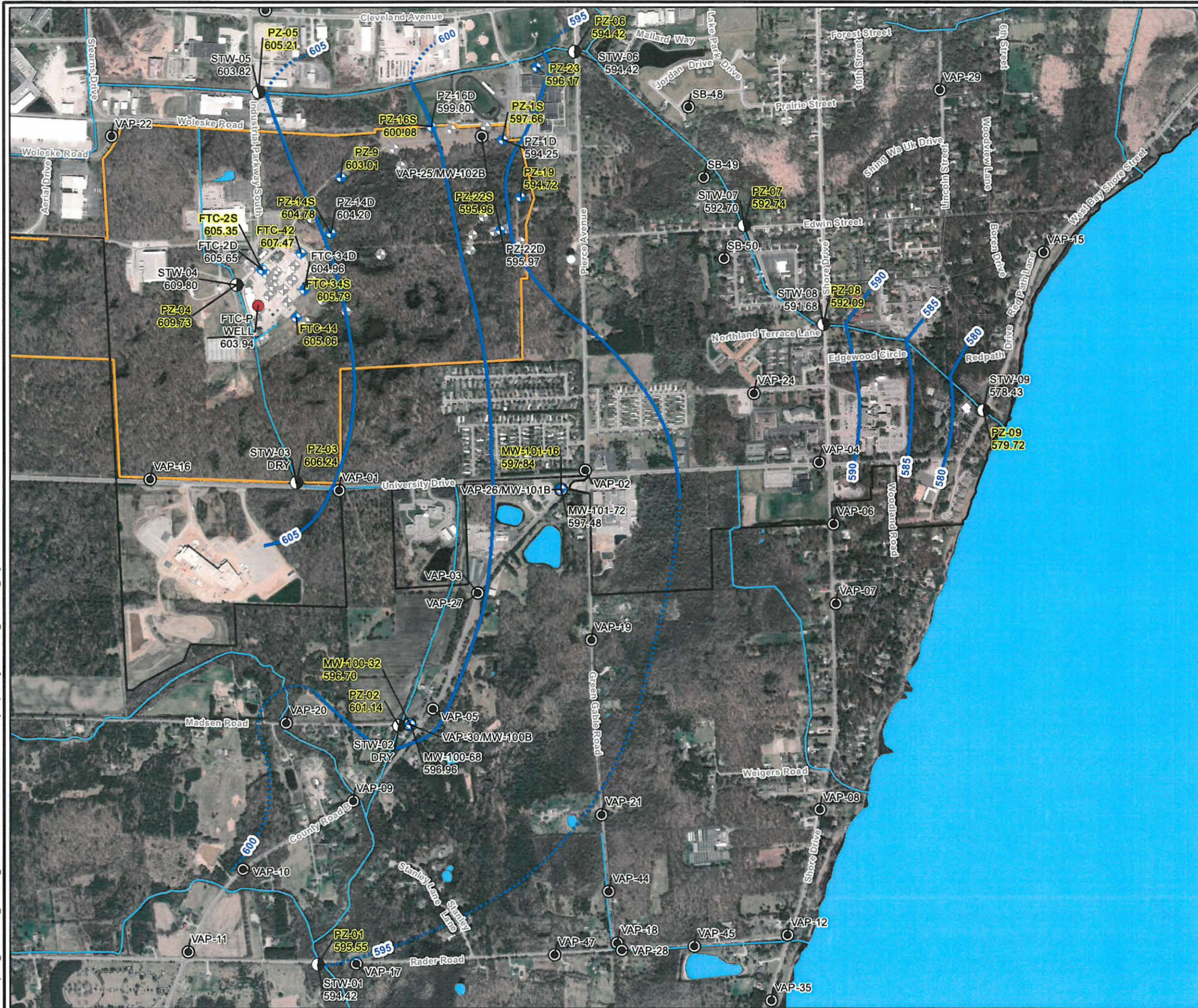
Copies:

Roxanne Chronert - WDNR
Jeffrey Danko – Johnson Controls

Figures

- 8 Shallow Groundwater Potentiometric Surface (August 2018)
- 9 Shallow Groundwater Potentiometric Surface (November 2018)

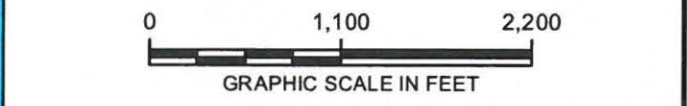
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 TYCO Marinette, WI
 Z:\GIS\Projects\ENV\TYCO_Marinette_WIMXD\2019-02\Jan 2019 Data Summary Report\Figure 8 Water Elevations_Aug18.mxd 2/5/2019 4:52:16 PM



LEGEND:

- MONITORING WELL
- PIEZOMETER
- SITE PRODUCTION WELL
- STILLING WELL
- VAP BORING
- MONITORING WELL (WATER LEVEL NOT MEASURED)
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- ROAD
- DITCH/STREAM
- WATERBODY
- AUGUST 2018 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

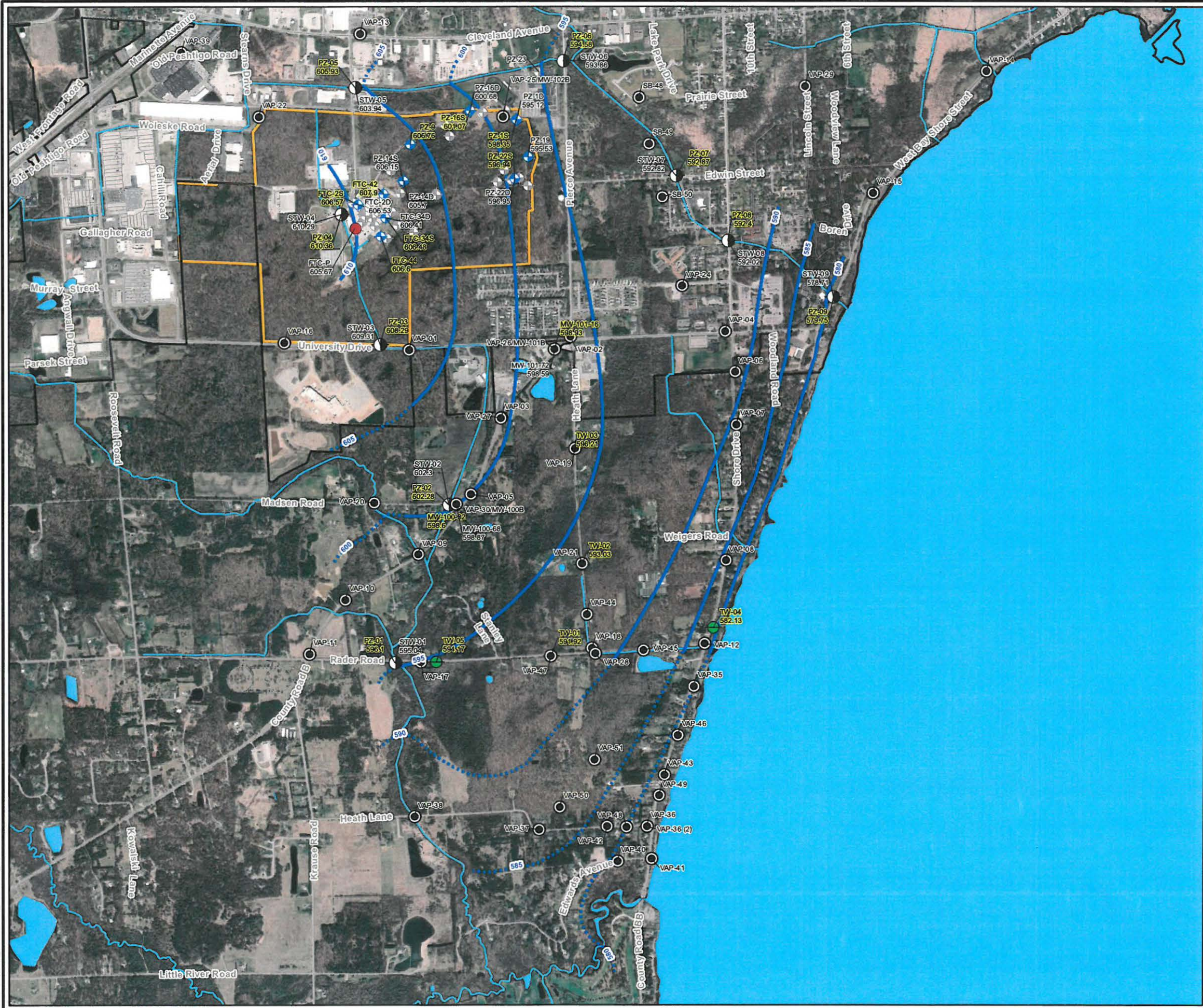
- NOTES:**
1. DEPTH TO WATER AT PIEZOMETER AND STILLING WELL PAIRS PZ/STW-01 THROUGH PZ/STW-09 WAS MEASURED ON 8/31/2018.
 2. DEPTH TO GROUNDWATER WAS MEASURED AT REPRESENTATIVE PERMANENT WELLS ON 8/27/2018. WELLS THAT ARE SHOWN IN GRAY WERE NOT GAUGED DURING THIS EVENT.
 3. HIGHLIGHTED WELLS WERE USED FOR CONTOURING THE SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE. THE WATER ELEVATIONS MEASURED AT STILLING WELLS AND DEEPER GROUNDWATER WELLS HAVE ALSO BEEN PROVIDED FOR REFERENCE.
 4. CITY BOUNDARY DATA SOURCE: WISCONSIN LEGISLATIVE TECHNOLOGY SERVICES BUREAU, WISCONSIN COUNTY CLERKS AND LAND INFORMATION OFFICES, ACCESSED FALL 2017.
 5. DITCH/STREAM DATA SOURCE: U.S. GEOLOGICAL SURVEY NATIONAL HYDROGRAPHY DATASET, ACCESSED FALL 2017.
 6. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
 7. AERIAL IMAGERY: 4/27/2016 DIGITALGLOBE, VIVID-USA



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**SHALLOW GROUNDWATER
POTENTIOMETRIC SURFACE
AUGUST 2018**

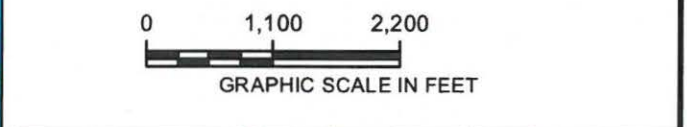
ARCADIS | **FIGURE 8**



LEGEND:

- MONITORING WELL
- PIEZOMETER
- STILLING WELL
- TEMPORARY PIEZOMETER
- SITE PRODUCTION WELL
- MONITORING WELL (WATER LEVEL NOT MEASURED)
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- ROAD
- DITCH/STREAM
- WATERBODY
- NOVEMBER 2018 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

- NOTES:**
1. DEPTH TO WATER AT PIEZOMETER AND STILLING WELL PAIRS PZ/STW-01 THROUGH PZ/STW-09 WAS MEASURED ON 11/9/2018.
 2. DEPTH TO GROUNDWATER WAS MEASURED AT REPRESENTATIVE PERMANENT AND TEMPORARY WELLS ON 11/15/2018. WELLS THAT ARE SHOWN IN GRAY WERE NOT GAUGED DURING THIS EVENT.
 3. HIGHLIGHTED WELLS WERE USED FOR CONTOURING THE SHALLOW GROUNDWATER POTENTIOMETRIC SURFACE. THE WATER ELEVATIONS MEASURED AT STILLING WELLS AND DEEPER GROUNDWATER WELLS HAVE ALSO BEEN PROVIDED FOR REFERENCE.
 4. THE LOCATIONS OF THE HEATH LANE LANDFILL WELLS ARE APPROXIMATE.
 5. CITY BOUNDARY DATA SOURCE: WISCONSIN LEGISLATIVE TECHNOLOGY SERVICES BUREAU, WISCONSIN COUNTY CLERKS AND LAND INFORMATION OFFICES, ACCESSED FALL 2017.
 6. DITCH/STREAM DATA SOURCE: U.S. GEOLOGICAL SURVEY NATIONAL HYDROGRAPHY DATASET, ACCESSED FALL 2017.
 7. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
 8. AERIAL IMAGERY: 4/27/2016 DIGITALGLOBE, VIVID-USA



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**SHALLOW GROUNDWATER
POTENTIOMETRIC SURFACE
NOVEMBER 2018**

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