

Response to Comments on Q1 2023 Progress Report Review with Comments

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On behalf of Tyco Fire Products LP (Tyco), Jacobs Engineering Group Inc. (Jacobs) prepared this memorandum to respond to U.S. Environmental Protection Agency's (EPA's) and Wisconsin Department of Natural Resources (WDNR's) (collectively referred to as the Agencies) comments on the *Quarterly Progress Report (January through March 2023)* (Q1 2023 Report) dated April 14, 2023 (Jacobs 2023). This memorandum responds to the Agencies comments submitted via email on June 30, 2023.

Each of the Agencies' comments on the Q1 2023 Report is repeated below in *italic* font, followed by the Tyco responses in plain text.

1. Agencies Comment:

General Comment 1: Quarterly reports are not an appropriate notification method for activities that require separate submittals for review and approval by the agencies. Any activities that will result in the disturbance of RCRA components including soil covers and caps or material management activities must be proposed in a separate report for review and approval by both WDNR and EPA.

Tyco Response. Comment noted.

2. Agencies Comment:

Specific Comment 2: Include a site map with features including wells, outfalls, and other relevant details for reference to Groundwater Collection Treatment System, Pump Down Program and other current or ongoing activities discussed.

Tyco Response. Three figures are attached to this response that provide additional features discussed in the Q1 2023 Report as follows:

- Figure 1 – Site Map
- Figure 2 – Site Plan with Wells and Phyto-Plot Location Map
- Figure 3 – Cover Area Location Map (this figure was included in the original Q1 2023 Report)

3. Agencies Comment:

Specific Comment 3: Key correspondence listed in the quarterly report should include permit approvals and amendments that support remedial activities including but not limited to stormwater, wastewater, and high capacity well permits, approvals and amendments.

Tyco Response. Comment noted. Correspondence that supports RCRA remedial activities has typically been included in the past, and Tyco will continue to do so moving forward.

4. Agencies Comment:

Specific Comment 4: Please provide clarification on groundwater management at the site including collection, storage, treatment, discharge, and off-site disposal.

- a. *For example, on page 2 it states that 1,200,000 gallons were treated and discharged (estimated 873,000 gallons) to the City of Marinette municipal wastewater treatment plant. How were the remaining 327,000 gallons managed and does the balance include reject water disposed off-site at Vickery, Ohio? A reported 700,000 gallons were collected from construction dewatering operations and building sumps. Is this volume separate from the 2022-2023 construction dewatering volume, and if so, are the remaining 640,000 gallons currently stored on-site in frac tanks?*

Tyco Response. Groundwater management during the first quarter 2023 reporting period included the following:

- Onsite treatment with temporary system: The temporary onsite treatment operations addressed all the water generated in 2022 which was stored in frac tanks on the former Salt Vault and former 8th Street Slip areas until treated. Approximately 1,200,000 gallons of water generated during the 2022 construction activities were treated. Approximately 873,000 gallons of that was discharged to the City of Marinette municipal wastewater treatment plant. The remaining approximately 327,000 gallons was reject water and was disposed of offsite at the Waste Management Vickery Deepwell Hazardous Waste (Vickery) disposal facility in Vickery, Ohio.
- Pump down program (PDP) groundwater: Approximately 264,470 gallons of groundwater was extracted and disposed of offsite at the Vickery disposal facility.
- Groundwater from extraction well EW-7: Approximately 125,500 gallons of groundwater was pumped and transferred to the PDP building. Some of the groundwater was stored in frac tanks on the former Salt Vault and former 8th Street Slip areas and the remainder was disposed of offsite at the Vickery disposal facility depending on truck availability. The remaining volume stored onsite in frac tanks will continue to be disposed of offsite at the Vickery disposal facility as trucks allow and will also be slowly added in to the GWCTS once operations are consistent and reliable with groundwater from the extraction wells.
- Water from other first quarter 2023 activities: Approximately 700,000 gallons were collected from final waterline construction dewatering operations, stormwater/groundwater collection areas, and building sumps during the period of time the GWCTS was undergoing construction. This water was typically collected with a vac truck and transported to frac tanks on the former Salt Vault and former 8th Street Slip areas. Approximately 60,000 gallons was disposed offsite at the Vickery disposal facility. The remaining 640,000 gallons was stored onsite in frac tanks and will continue to be disposed of offsite at the Vickery disposal facility as trucks allow and will also be

slowly added in to the GWCTS once operations are consistent and reliable with groundwater from the extraction wells.

5. Agencies Comment:

Specific Comment 5: Individual and average groundwater elevations are reported in Attachments 3 and 4. Please label the table and figure to clarify whether data is collected manually or by transducer. Include all applicable data used for averaging in Attachments 3 and 4 (e.g., groundwater elevation data for both SD4 and SW001).

Tyco Response. The Attachment 3 table and the Attachment 4 graph with the PDP system hydrographs from the Q1 2023 Report have been updated and are attached.

Attachment 3 includes only manual water level data and the data used for the averaging calculation (or Target Elevation calculation as noted in the table). The average groundwater elevation from Attachment 3 is also graphed in the Attachment 4 PDP system hydrographs. The Attachment 4 hydrographs also include the transducer data logged by the PDP system. SG4 (noted as SD4 in the comment) measurements are manual staff gauge measurements of the Menominee River that are included in Attachment 3 and was added to the Attachment 4 hydrographs. SW001 data are PDP system transducer measurements of the Menominee River that are included in the Attachment 4 hydrographs. Neither of these river level data sources are used as part of the averaging calculation.

6. Agencies Comment:

Specific Comment 6: EPA and WDNR are unable to discern which, if any, well IDs are "bolded" to identify them as part of the Target Elevation calculation in Attachment 3. Include information or clearly identify which wells were used for average calculations in both the Salt Vault and 8th Street Slip, as well as decision criteria for exclusion of any individual well from the calculation.

Tyco Response. The Attachment 3 table from the Q1 2023 Report has been updated and is attached.

All wells that are bolded/shaded have been included in the calculations. In the former Salt Vault, groundwater is extracted from the horizontal extraction wells whose alignment do not require excluding any of the monitoring locations. In the former 8th Street Slip, groundwater is extracted from EW-8 and EW-9. Only EW-9 has monitoring wells MW034M and MW034S that are nearby. MW034M and MW034S monitoring wells have not shown major changes/influence from the extraction well over time and appear to be outside of the steepest cone of depression and therefore have been included in the calculation.

7. Agencies Comment:

Specific Comment 7: Information provided is insufficient to determine whether relocation of the transducer from MW106D to MW003D outside the barrier wall will impact data objectives.

Tyco Response. MW106D was moved to MW003D to allow for easier transducer maintenance because it is a stickup well. Because MW003D and MW106D are close to each other and because they are bedrock wells, the transducer move should not impact data objectives for bedrock monitoring.

The sheet pile barrier wall was driven to refusal into either the competent glacial till layer or to the top of bedrock, not through the bedrock, so the barrier wall would not impact readings between

bedrock monitoring wells as they would be hydraulically connected. In the 2022 Barrier Wall Groundwater Monitoring Report (2022 Annual Report; Jacobs 2023), Table 5-3. Monitoring Well Head Differences—Inside versus Outside Barrier Wall shows the comparison of MW106D and MW003D. The differences for 18 different events from May 2014 to June 2022 ranged from -0.21 to 1.27 feet and an average difference of 0.17 feet with 12 of the readings 0.1 feet or less. Based on the 2022 Annual Report Figures 6B and 7B that present potentiometric contour maps for June and December 2022, the distribution of hydraulic heads in bedrock indicates that, as expected, groundwater flow is unaffected by the barrier wall and generally moves to the north and northeast under a low gradient. In June 2022, heads between the most upgradient well (MW013D) and the bedrock wells situated adjacent to the river generally varied by approximately 1 foot or less. These head differences were further diminished to approximately 0.5 foot in December 2022. The bedrock groundwater potentiometric contour maps have shown similar data in the past and continue to provide no evidence of a hydraulic connection between the bedrock and overburden aquifers that are actively pumped. In addition, the transducer data at MW106D bedrock well are included in a graph that include the hydrographs for MW106S and MW003S and the river elevation (Appendix E, Figure 4A in the 2022 Annual Report). Data obtained from monitoring well MW106D document hydraulic heads in bedrock generally mimic changes in water levels in the river, the same would be expected at MW003D. Furthermore, these paired well nests are not used as part of the SeriesSEE evaluation.

8. Agencies Comment:

Specific Comment 8: EPA and WDNR disagrees with the statement "Soil excavated during the reporting period from the construction activities was either placed in roll-off boxes for transport and disposal or appropriately stockpiled and contained onsite until disposal can occur in spring 2023, after freezing conditions end." Soil was not appropriately stockpiled or contained on site. This statement should be changed to accurately reflect operations. Approval was never received from the agencies and Best Management Activities, including properly covering stockpiles, were not implemented to prevent contaminated soil or surface water from leaving the site.

Tyco Response. The Agencies comment is noted and Tyco has discussed this in detail with the Agencies. Although the soil stockpiles were not fully covered during the first quarter 2023 reporting period as final soil consolidation was still taking place, Tyco has explained that measures were in place to manage and prevent the soil and surface water from leaving the site. The soil stockpile was placed on a plastic liner that was surrounded by a muscle wall, which was also wrapped in plastic. Sawdust was placed between the stockpile and the plastic to absorb any water during the winter months. Following consolidation activities, additional best practice measures were put in place, as documented to the EPA in the April 26, 2023 email, including plastic sheeting to cover the stockpiled soil, erosion control waddles and containerization of any melt or rain water.

9. Agencies Comment:

Specific Comment 9: Please provide additional information as to why minimal pumping occurred in the 8th Street Slip in latter part of the quarter as elevations continued to increase towards the target elevation.

Tyco Response. As indicated in the Q1 2023 Report, lower or higher pumping rates coincide with days when trucks were not available or additional volume was needed to generate the minimum volumes required by the disposal/trucking contractor, respectively. Truck availability from the Waste Management Vickery Deepwell Hazardous Waste disposal facility in Vickery, Ohio, was

Memorandum

limited (typically 5 trucks per week). We anticipate that this will no longer be a consideration with the operation of the improved GWCTS, which was started in July 2023.

Figures



LEGEND

- Steel Sheet Pile Wall (Vertical Barrier Wall)
- Slurry Wall (Vertical Barrier Wall)
- Former Tyco Administrative Building/Property (sold)
- Approximate Property Boundary

Note:
 1. 2017 Aerial Photography provided by Esri ArcGIS Online World Imagery.

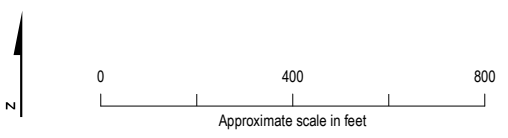
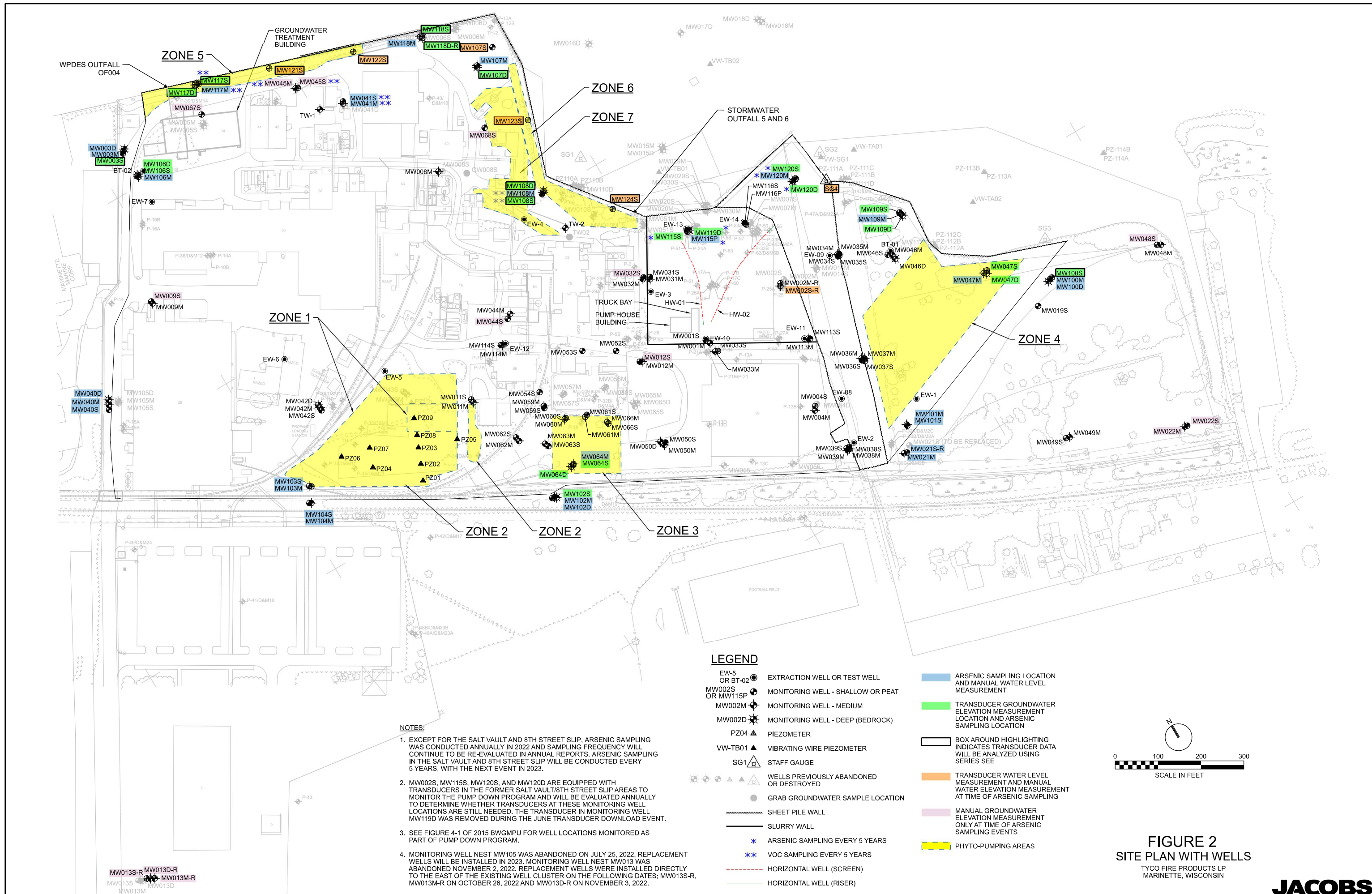


Figure 1. Site Map
 Tyco Fire Products LP Facility
 Marinette, WI





- NOTES:**
- EXCEPT FOR THE SALT VAULT AND 8TH STREET SLIP, ARSENIC SAMPLING WAS CONDUCTED ANNUALLY IN 2022 AND SAMPLING FREQUENCY WILL CONTINUE TO BE RE-EVALUATED IN ANNUAL REPORTS. ARSENIC SAMPLING IN THE SALT VAULT AND 8TH STREET SLIP WILL BE CONDUCTED EVERY 5 YEARS, WITH THE NEXT EVENT IN 2023.
 - MW002S, MW115S, MW120S, AND MW120D ARE EQUIPPED WITH TRANSDUCERS IN THE FORMER SALT VAULT/8TH STREET SLIP AREAS TO MONITOR THE PUMP DOWN PROGRAM AND WILL BE EVALUATED ANNUALLY TO DETERMINE WHETHER TRANSDUCERS AT THESE MONITORING WELL LOCATIONS ARE STILL NEEDED. THE TRANSDUCER IN MONITORING WELL MW119D WAS REMOVED DURING THE JUNE TRANSDUCER DOWNLOAD EVENT.
 - SEE FIGURE 4-1 OF 2015 BWGMPU FOR WELL LOCATIONS MONITORED AS PART OF PUMP DOWN PROGRAM.
 - MONITORING WELL NEST MW105 WAS ABANDONED ON JULY 25, 2022. REPLACEMENT WELLS WILL BE INSTALLED IN 2023. MONITORING WELL NEST MW013 WAS ABANDONED NOVEMBER 2, 2022. REPLACEMENT WELLS WERE INSTALLED DIRECTLY TO THE EAST OF THE EXISTING WELL CLUSTER ON THE FOLLOWING DATES; MW013S-R, MW013M-R ON OCTOBER 26, 2022 AND MW013D-R ON NOVEMBER 3, 2022.

LEGEND

- EW-5 OR BT-02 ● EXTRACTION WELL OR TEST WELL
- MW002S OR MW115P ● MONITORING WELL - SHALLOW OR PEAT
- MW002M ● MONITORING WELL - MEDIUM
- MW002D ● MONITORING WELL - DEEP (BEDROCK)
- PZ04 ▲ PIEZOMETER
- VW-TB01 ▲ VIBRATING WIRE PIEZOMETER
- SG1 ▲ STAFF GAUGE
- WELLS PREVIOUSLY ABANDONED OR DESTROYED
- GRAB GROUNDWATER SAMPLE LOCATION
- SHEET PILE WALL
- SLURRY WALL
- * ARSENIC SAMPLING EVERY 5 YEARS
- ** VOC SAMPLING EVERY 5 YEARS
- - - HORIZONTAL WELL (SCREEN)
- HORIZONTAL WELL (RISER)
- ARSENIC SAMPLING LOCATION AND MANUAL WATER LEVEL MEASUREMENT
- TRANSDUCER GROUNDWATER ELEVATION MEASUREMENT LOCATION AND ARSENIC SAMPLING LOCATION
- BOX AROUND HIGHLIGHTING INDICATES TRANSDUCER DATA WILL BE ANALYZED USING SERIES SEE
- TRANSDUCER WATER LEVEL MEASUREMENT AND MANUAL WATER ELEVATION MEASUREMENT AT TIME OF ARSENIC SAMPLING
- MANUAL GROUNDWATER ELEVATION MEASUREMENT ONLY AT TIME OF ARSENIC SAMPLING EVENTS
- PHYTO-PUMPING AREAS

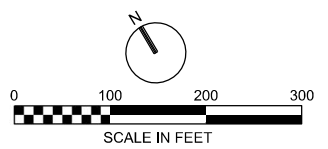
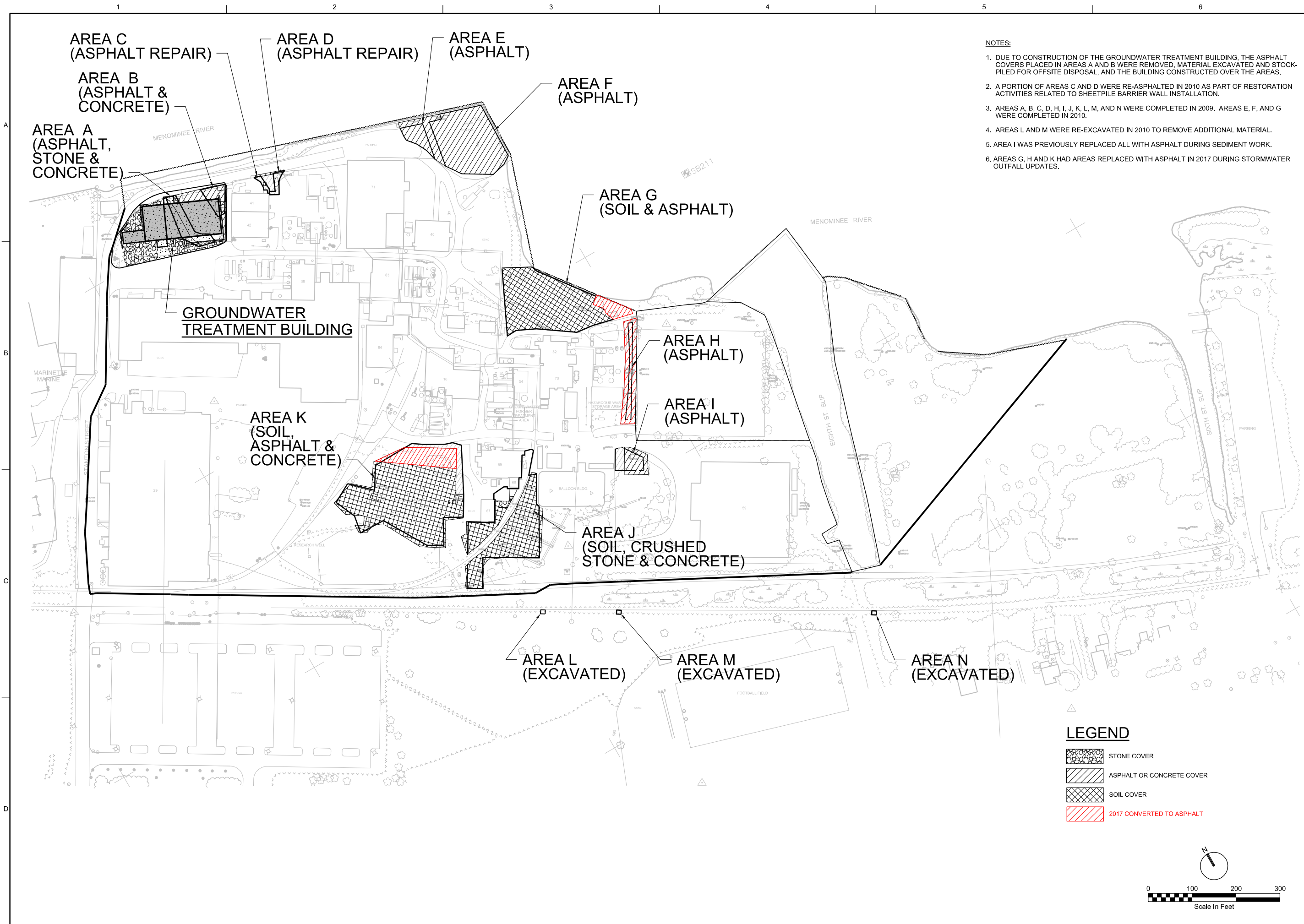


FIGURE 2
SITE PLAN WITH WELLS
 TYCO FIRE PRODUCTS LP
 MARINETTE, WISCONSIN

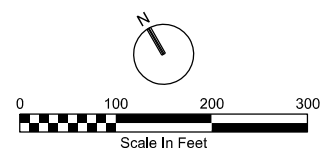




- NOTES:**
1. DUE TO CONSTRUCTION OF THE GROUNDWATER TREATMENT BUILDING, THE ASPHALT COVERS PLACED IN AREAS A AND B WERE REMOVED, MATERIAL EXCAVATED AND STOCK-PILED FOR OFFSITE DISPOSAL, AND THE BUILDING CONSTRUCTED OVER THE AREAS.
 2. A PORTION OF AREAS C AND D WERE RE-ASPHALTED IN 2010 AS PART OF RESTORATION ACTIVITIES RELATED TO SHEETPILE BARRIER WALL INSTALLATION.
 3. AREAS A, B, C, D, H, I, J, K, L, M, AND N WERE COMPLETED IN 2009. AREAS E, F, AND G WERE COMPLETED IN 2010.
 4. AREAS L AND M WERE RE-EXCAVATED IN 2010 TO REMOVE ADDITIONAL MATERIAL.
 5. AREA I WAS PREVIOUSLY REPLACED ALL WITH ASPHALT DURING SEDIMENT WORK.
 6. AREAS G, H AND K HAD AREAS REPLACED WITH ASPHALT IN 2017 DURING STORMWATER OUTFALL UPDATES.

LEGEND

-  STONE COVER
-  ASPHALT OR CONCRETE COVER
-  SOIL COVER
-  2017 CONVERTED TO ASPHALT



APVD	H. ZIEGELBAUER
CHK	J. DANKO
DR	G. BOWLES
DSGN	T. CHAPMAN

TYCO FIRE PRODUCTS LP
 Cover Maintenance Plan for
 Onsite and Offsite Soil Areas at
 the Tyco Fire Products LP Facility
 Marinette, Wisconsin

JACOBS

FIGURE 3
AREA LOCATION MAP

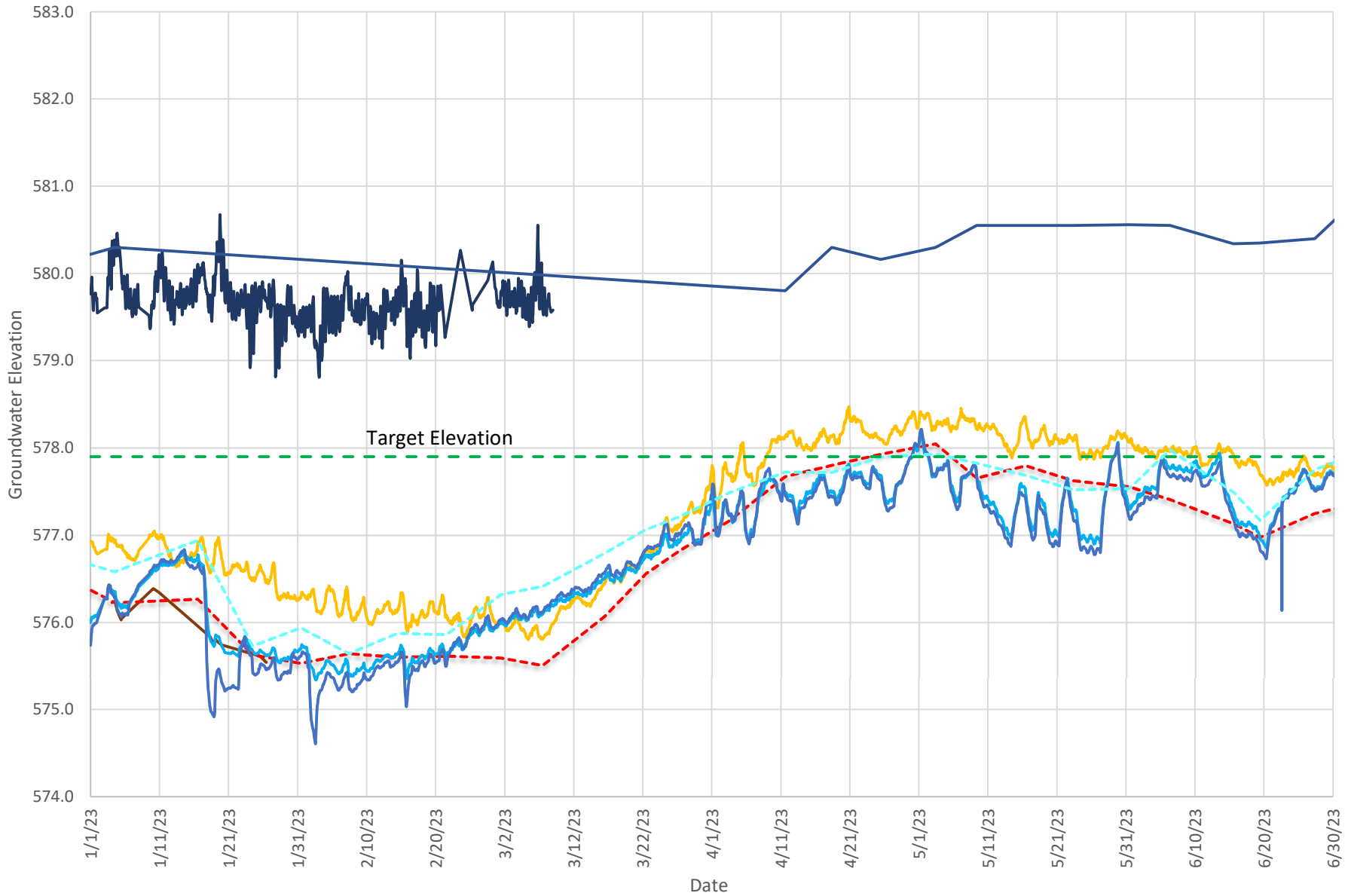
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**Updated Attachment 3
Table from Q1 2023 Report**

**Updated Attachment 4 Graph with PDP System
Hydrographs from Q1 2023 Report**

January through June 2023 Water Levels Pump Down Program System Hydrographs



- MW036S (8SS-PDP Transducer)
- 8SS Manual Water Level Measurement Average Elevation
- MW115S (SV-PDP Transducer)
- River (SW001-PDP Transducer)
- MW120S (8SS-PDP Transducer)
- MW002S (SV-PDP Transducer)
- SV Manual Water Level Measurement Average Elevation
- SG4 Manual Staff Gauge Measurement