

From: Ziegelbauer, Heather/MKE <Heather.Ziegelbauer@jacobs.com>
Sent: Thursday, November 01, 2018 11:00 AM
To: Neal, Conor; Carey, Angela J - DNR; Fassbender, Judy L - DNR; Moen, Trevor J - DNR; Knutson, Jason R - DNR; Killian, James - DNR; Pfeifer, David; Johnson, Aaron; Ireland, Scott
Cc: Finney, David/BOS; Mitchell, David/BOS; Joseph Janeczek; Richard L. Mator; Jeff Danko; Ryan Suennen; Manning, Bruce/STL
Subject: Tyco Oct 22 Project Status Meeting - Meeting Notes
Attachments: TycoProjectStatusMeetingOct22Notes-2018.11.01.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Green category

All,

Attached for your reference are meeting notes from our status update meeting on October 22, 2018 regarding the Tyco Fire Products LP Stanton Street facility. Please let us know you have any questions.

Heather Ziegelbauer, PE* | [Jacobs](#) | Project Manager | Global Environmental Solutions | + 1.262.644.6167 | + 1.312.933.1017 mobile

heather.ziegelbauer@jacobs.com | www.jacobs.com

**Wisconsin*

From: Ziegelbauer, Heather/MKE
Sent: Tuesday, October 23, 2018 1:02 PM
To: Neal, Conor <Neal.Conor@epa.gov>; Angie Carey (Angela.Carey@wisconsin.gov) <Angela.Carey@wisconsin.gov>; Judy.Fassbender@Wisconsin.gov; Moen, Trevor J - DNR <Trevor.Moen@wisconsin.gov>; Knutson, Jason R - DNR <Jason.Knutson@wisconsin.gov>; James.Killian@wisconsin.gov; Pfeifer, David <pfeifer.david@epa.gov>; Johnson, Aaron <Johnson.AaronK@epa.gov>; Ireland, Scott <ireland.scott@epa.gov>
Cc: Finney, David/BOS <david.finney@jacobs.com>; Mitchell, David/BOS <David.Mitchell2@jacobs.com>; Joseph Janeczek <joseph.janeczek@jci.com>; Richard L. Mator <richard.mator@jci.com>; Jeff Danko <jeff.danko-ext@jci.com>; Ryan Suennen <ryan.suennen@jci.com>; Manning, Bruce/STL <Bruce.Manning@jacobs.com>
Subject: Tyco Oct 22 Project Status Meeting - Presentation Materials

All,

Per your request during our meeting yesterday, attached are the presentation materials for your reference as follows.

- Barrier Wall Monitoring Presentation
- Sediment Sampling Presentation
- Other/Miscellaneous Items Presentation
- Working Draft Tables for WPDES Variance Additional Information Request (for discussion purposes only)

Thanks,

Heather Ziegelbauer, PE*

Jacobs

Project Manager | Global Environmental Services

+ 1.262.644.6167

+ 1.312.933.1017 mobile

heather.ziegelbauer@jacobs.com

www.jacobs.com

135 South 84th Street, Suite 400

Milwaukee, WI 53214

US

www.jacobs.com

**Wisconsin*

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135 South 84th Street, Suite 400
Milwaukee, Wisconsin 53214
United States
T +1.262.644.6167
F +1.414.454.8834
www.jacobs.com

Subject Status Meeting Notes for Tyco Stanton Street Facility RCRA Project, October 22, 2018

Attendees

Conor Neal/USEPA	Angela Carey/WDNR
Joe Cisneros/USEPA	Judy Fassbender/WDNR
Aaron Johnson/USEPA	Jim Killian/WDNR (via phone)
Scott Ireland/USEPA	Trevor Moen/WDNR (via phone)
Dave Pfeifer /USEPA	Jason Knutson/WDNR (via phone)
Dave Franc/TetraTech	Jeff Danko/Tyco-JCI
Heather Ziegelbauer/Jacobs	Ryan Suennen/Tyco-Tyco Fire Protection
Dave Finney/Jacobs	Rich Mator/Tyco-JCI
Bruce Manning/Jacobs	Joe Janeczek/Tyco-JCI (via phone)
Dave Mitchell/Jacobs (via phone)	

Meeting Date October 22, 2018

Location Chicago, Illinois

Status Update Meeting Notes

Meeting started: 10:30 AM Central Time

1. Introductions

Representatives from the U.S. Environmental Protection Agency (USEPA), Wisconsin Department of Natural Resources (WDNR), Jacobs Engineering Group Inc. (Jacobs), and Tyco-JCI attended the meeting in person or via phone. Note, some attendees were only present during topics that pertained to their area of interest.

2. Barrier Wall Monitoring Program Enhancements (presentation)

Jacobs reviewed presentations slides regarding response to agency comments on the enhanced monitoring network. Note that there was a break in the discussion because of schedule conflicts to review Wisconsin Pollutant Discharge Elimination System (WPDES) variance items. The following documents related to the discussion are summarized without showing the break.

USEPA agreed that SeriesSEE appears to be a good method for transducer data evaluation; however, they would like to further evaluate the method. USEPA indicated that looking at trends over time would be an important way to evaluate potential changes in barrier wall effectiveness. USEPA asked if there would be an amplitude factor to indicate as a cutoff for leak indication.

USEPA indicated use of visual survey or an underwater camera would be a good way to document the baseline status of the wall and proposed to reconfirm the baseline annually visually using underwater inspection. WDNR asked whether there is a remote sensing tool if visual does not work or help to see the wall.

It was discussed by all that it would be good to define a baseline using a visual underwater inspection; however, Tyco indicated they were not sure that annual frequency would be needed. Perhaps it would be best to complete the first baseline event, confirm its value, and agree upon additional surveys and frequency at that time.

Tyco asked if it would be okay to use only the visual component and not all the other enhanced components were just reviewed.

USEPA offered to go to annual versus semiannual for the existing visual wall inspections if Tyco added the newly proposed visual/camera inspection. USEPA also indicated they believed the below water line inspection was needed to evaluate long-term possible corrosion. USEPA also indicated that the proposed U.S. Geological Survey (USGS) SeriesSEE analyses may allow for cessation of the synoptic water level surveys and contour map generation aspect of the barrier wall monitoring program.

WDNR indicated there is a remote sensing method that has been used to inspect dams and other underwater structures that can provide a picture of the relief above and below the water line, works in low-visibility and low light, and does not require an underwater diver.

USEPA offered potentially every 5 years for annual visual underwater inspections, but to first test out the option, see if it works, and if it provides value. USEPA and Tyco agreed an initial inspection would potentially be a good means with which to baseline the SeriesSEE evaluation of transducer data, which could be used for comparison with future SeriesSEE outputs (e.g., river amplitude factors).

Jacobs provided details on why additional bedrock wells are not needed. After discussions, USEPA indicated they did not think the two additional bedrock wells requested by the agencies were needed. The enhanced shallow network is good as previously proposed and can be installed in the spring. Tyco indicated that MW118D, which was abandoned because of a cracked well casing, will be replaced at that time as well.

USEPA would like to see an update to the barrier wall monitoring plan; a memorandum/document that would serve as an addendum to the plan that includes the following:

- Which wells are proposed for the USGS SeriesSEE evaluation
- Procedure for evaluation using USGS SeriesSEE tool
- Different lines of evidence including the new below water visual survey
- Procedures for evaluation if a leak is indicated – first steps USEPA believed might be more prescriptive, but later steps could more general (e.g., providing language around the preparation of a work plan to further address specific issues as identified)

USEPA indicated the addendum document could be provided in draft, and Tyco could work over the winter to finalize. Tyco can then install the enhanced monitoring network and complete the new baseline above/below water line wall survey in the spring at the same time, when weather allows.

3. WPDES Permit Variance Discussion (working DRAFT tables)

Jacobs reviewed industrial line alternatives and groundwater collection and treatment system (GWCTS) upgrade alternatives working DRAFT tables (for discussion purposes only).

3.1 Industrial Line Alternatives Discussion

- Tyco reviewed a figure with industrial line components and repairs/fixes that have been completed to date.
- Jacobs/Tyco reviewed options in DRAFT Table 1a.
- WDNR asked about stormwater and whether there was an option to go all above grade. Jacobs indicated that in consultation with its stormwater experts, they did not recommend taking all the

stormwater components above grade. Due to the geographical location, the heat tracing that would be needed and the problems that could occur (including damage to buildings, flooding, shut down of all or portions of facility operations, health and safety concerns, etc.), it was not recommended. WDNR indicated they would like to see more about these difficulties. WDNR asked whether the stormwater drainage could be converted to all surface water flow drainage. Jacobs/Tyco indicated that due to all the facility building components, the fact that the site is very flat, and the lessee holding/testing approach for stormwater management would make that next to impossible to implement.

- USEPA-Water indicated they want to understand which option has the least net load to the river.
- WDNR indicated any above grade option is good/preferred.
- USEPA-Water indicated the following input for variance requests:
 - What is the highest attainable condition?
 - What is feasible, what is not feasible?
 - If economic feasibility is being used, need to provide costs and details on why (widespread economic/social hardship).
 - Referred to 40 CFR 131.14 as what is required.
 - What is the overall load, given feasibility limitations?

3.2 GWCTS Alternatives Discussion

- Jacobs/Tyco reviewed options in DRAFT Table 1b focusing on Options 0, 1, and 2. Pretreatment options were only briefly discussed since they will not treat to lower levels nor are they as efficient as the proposed Option 1 or 2. DRAFT Table 1c also was briefly reviewed that discussed the offsite disposal options and how those were not preferred due to overall cost compared to treating the water, risk of receiving disposal facility not being available, and transport risks of large amounts of hazardous waste over a long distance.
- Jacobs reviewed in detail the treatment train in the existing GWCTS and Options 1 and 2. There was discussion on the treatment process and the pretreatment process.
- Jacobs/Tyco added that a lamella clarifier was added to the current system as an enhancement to improve the treatment process (not noted in the DRAFT table).
- WDNR had a question on what the best oxidation approach was for arsenic. Jacobs indicated that because of the complex groundwater matrix, testing has been proven the current approach works best for this particular groundwater.
- USEPA-Water asked about cost and why that is included. They indicated they do not particularly care about costs unless the costs would result in an impact to Tyco. They also asked if Jacobs could quantify the relative removal of arsenic from the different options. Jacobs indicated that based on current operations and what past sediment remediation operations, Option 1 could meet 500 micrograms per liter ($\mu\text{g/L}$) or less, and that pilot testing would be needed to evaluate if lower levels could be achieved. USEPA-Water asked between Options 1 and 2, what is the possible lesser amount; for example, is it an order of magnitude difference (e.g., $100 \mu\text{g/L}$ to $4 \mu\text{g/L}$)? Jacobs indicated that it is unknown what possible lesser level could be achieved and would need pilot testing to confirm. Actual performance of a pilot test to determine the removal efficiency of each option was not discussed.
- USEPA-Water asked if there was any middle ground between Options 1 and 2. At that time, Jacobs subject matter expert had left due to a scheduling conflict, and the team would need to confirm if there were.
- Jacobs had asked if it still made sense to include all the options Tyco considered or only include the options that are most technically feasible. WDNR indicated that it would be best to include as much as possible with as much detail as possible.

- Agencies requested copies of the working DRAFT tables to allow them to provide further review and input on the DRAFT tables to confirm the items needed for the variance request were included. Jacobs/Tyco agreed they would send to them for their input. USEPA-Water indicated they wanted to work collaboratively and were open to further reviews and discussions to make sure all the necessary information was included in the variance request.

4. 2018 Five-Year Review Sediment Sampling (presentation)

Jacobs reviewed presentations slides regarding 2018 sediment sampling activities and results.

WDNR added as another possible mechanism for observed soft sediment concentrations in excess of 20 parts per million (ppm) - migration of contaminated groundwater. Jacobs agreed and indicated Tyco's last bullet lumped together multiple processes and that would be a component of that.

USEPA indicated that the plan would be to indicate Tyco's proposed path forward in the 5-year review for the sediment sampling. USEPA noted that soft sediments per the 2009 Administrative Order on Consent were to meet 20 ppm by 2023.

USEPA asked how Ponar sampling was completed, and how was it determined what layer was being sampled. Tyco indicated that the Ponar only goes down about 6 to 7 inches, and the sample was homogenized, so could have some additional mixing of sand cover and/or semi-consolidated material/glacial till. USEPA was wondering if Ponar was required due to low sediment thickness, whether samples should have even been collected. Tyco indicated they thought it was important to get some data so collected the samples. Tyco indicated that the likely approach is to propose conducting the sediment monitoring in 2023 as initially planned.

USEPA asked if it is worth understanding where areas of deposition are occurring – tracking bathymetry over the next year and to verify sedimentation rates. Tyco indicated they are not sure that the surveys would show that resolution given the sedimentation rates (only a few inches) that have been seen to date.

USEPA indicated they would like further evaluation on the hypothesis of glacial till/sediment interaction.

USEPA asked why historically the 2014 Agreement on Resolution focused on the Turning Basin only and did not include areas much beyond the Turning Basin. Tyco indicated that it focused on areas where material was removed to glacial till and concentrations over 20 ppm remained. USEPA may need some historical information on the transition areas and the south channel if it is available.

USEPA asked about pore water sampling and Tyco/Jacobs thoughts and mentioned previous discussions about preparing a work plan 45 days after sediment sampling was done. USEPA believes pore water sampling would be a good way to verify what is going on with the bedrock too and would still like a work plan on a proposed approach. USEPA indicated that the focus of pore water sampling can be on areas in the Turning Basin (possibly SD-09, based on recent sediment data) and will help with barrier wall underflow evaluation.

5. Other/Miscellaneous (presentation)

Tyco provided a brief update on the stormwater system modifications and system sampling due to the limited time remaining. All updates to the stormwater system have been completed, most sampling was completed except one location that will be collected after the next rain event, since that lining effort was just completed the week before this meeting.

Groundwater Sampling – Fall Event – The event was completed, and based on a cursory review, no major changes in water quality were identified. The information will be further evaluated and included in the 5-year review/annual report.

Tyco reviewed the Pump Down Program Status slides, and there was no discussion. It is likely that the temporary system will need to shut down any day because of cold weather, but Tyco will operate as long as possible.

Jacobs reviewed the Permanent Conveyance System Status. After reviewing the past activities and status, discussed details from a construction team meeting held October 16, 2018, where the conveyance subcontractor had significant concerns moving forward with the project over the winter and being able to provide a quality project and conduct the work safely. Particularly the high-density polyethylene piping welds (minimum of 41 degrees Fahrenheit maintained for a good weld) and pressure tests (getting false positives in cold weather). USEPA indicated they were okay with postponing the construction work until 2019 due to these concerns, and USEPA will provide formal email notification of that path forward.

6. Action Items

- Tyco/Jacobs to provide draft addendum to barrier wall monitoring plan that summarizes lines of evidence that will be used, SeriesSEE transducer analysis procedures, details on visual underwater wall survey approach, and details what wells/transducer data will be evaluated using Series SEE tool.
- Tyco/Jacobs to look at methods for visual survey approach and include in draft addendum.
- Tyco to install new shallow wells in spring 2019 (and MW118D replacement); ideally complete visual survey at same time to serve as a baseline.
- Tyco/Jacobs to validate hypothesis on proximity of till versus soft sediment concentrations.
- Tyco/Jacobs to evaluate approach to look at bathymetry changes to see where deposition occurred.
- Tyco/Jacobs and provide path forward for sediment sampling in the 5-year review report.
- Jacobs to provide USEPA with sediment information on pre and post-dredging and possibly data from transition areas and south channel.
- Tyco to propose pore water sampling and provide in a work plan.
- USEPA-Water and WDNR-Water to provide input on working DRAFT tables for WPDES Permit Variance.
- Tyco to update WPDES variance tables based on input from agencies.
- USEPA to provide email memorializing approval of postponing conveyance construction until spring 2019.
- Presentation slides were emailed to attendees by Heather Ziegelbauer on October 23, 2018 following the meeting.
- Next face-to-face meeting to be determined – No date set.