



April 20, 2021

MR. JEFFREY DANKO
JOHNSON CONTROLS, INC
5757 N. GREEN BAY AVENUE
MILWAUKEE, WI 53209

MR. SCOTT WAHL
TYCO FIRE PRODUCTS LP
1 STANTON STREET
MARINETTE, WI 54143

SUBJECT: Response to Semi-Annual Operation, Maintenance, and Optimization Progress Reports
#1: Ditch B Interim Action Treatment System, October 30, 2019 – December 31, 2019
#2: Ditch B Interim Action Treatment System, January 1, 2020 – June 30, 2020
#3: Ditch B Interim Action Treatment System, July 1, 2020 – December 31, 2020
JCI/Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI
BRRTS #02-38-580694

Dear Mr. Danko and Mr. Wahl:

The Wisconsin Department of Natural Resources (DNR) has received three *Semi-Annual Operation, Maintenance, and Optimization Progress Report: Ditch B Interim Action Treatment System* (O&M Progress Reports). The three O&M Progress Reports were received on March 20, 2020, September 21, 2020, and March 3, 2021, respectively. Each report was accompanied by the appropriate fee of \$425, required under Wisconsin Administrative Code (Wis. Admin. Code) § NR 749.04(1), for DNR review and response.

The DNR has been in frequent discussions with you during the start-up phase of the treatment system and appreciates your patience in awaiting this written response. The DNR reviewed the three and this response provides directions on how to proceed with future monitoring and reporting for this interim action.

Background

On January 16, 2018, Johnson Controls, Inc., on behalf of Tyco Fire Products, LP (JCI/Tyco) reported a discharge of per- and polyfluoroalkyl substances (PFAS) to the environment. The discharge occurred as the result of fire suppressant training, testing, research and development of PFAS-containing aqueous film forming foams (AFFF) at the JCI/Tyco Ansul Fire Technology Center (FTC), located at 2700 Industrial Parkway South in Marinette, Wisconsin (the "Site").

A surface water drainage feature identified as Ditch B begins north of the FTC and flows east toward Pierce Avenue, where it turns and flows southeast and eventually discharges into the Bay of Green Bay in Lake Michigan. Elevated PFAS concentrations were detected in the surface water of Ditch B (e.g. PFOS¹ up to 190 ppt and PFOA² up to 3,800 ppt), and in October 2019 JCI/Tyco began an interim action to reduce the concentration of

¹ PFOS = perfluorooctanesulfonic acid

² PFOA = perfluorooctanoic acid

PFAS in the surface water. The interim action includes a treatment system that is housed on the Northern Lutheran Estates property, downstream from the FTC property and approximately 1,250 feet upstream from the mouth into Green Bay. The system captures surface water flowing in Ditch B, pumps the water through a treatment train that includes granular activated carbon, and then discharges the treated water back to Ditch B. The system is currently able to treat a maximum flow rate of 700 gpm. During times of higher stream flow or system downtime, some surface water in Ditch B flows past the treatment system.

NR 205 WPDES Permit

The effluent from the Ditch B treatment system is regulated by the DNR under Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit No. WI-0046566-07-0 and the associated coverage letter issued by the DNR on April 11, 2019 (revised January 2, 2020). The DNR's Wastewater Program administers the WPDES Permit. The DNR Wastewater Program reviewed the electronic discharge monitoring reports and for the Ditch B treatment system and responded to JCI/Tyco on items related to the WPDES permit under separate cover.

NR 724 Interim Action Operation, Maintenance and Monitoring Requirements

The Ditch B treatment system was installed as an interim action under Wis. Admin. Code ch. NR 708 and is subject to the requirements for operation, maintenance, and monitoring defined in Wis. Admin. Code ch. NR 724.

JCI/Tyco's O&M Progress Reports met the reporting schedule required for semi-annual progress reports under Wis. Admin. Code § NR 724.13(3), and documented system operations and design modifications during this initial phase of operation.

For on-going interim actions like the Ditch B treatment system, an operation and maintenance plan (Wis. Admin Code § NR 724.13(2)) and long-term monitoring plan (Wis. Admin Code § NR 724.17(2)) are required. **The DNR directs JCI/Tyco to submit one document to serve as the operation, maintenance and long-term monitoring plan (OM&M Plan) for the Ditch B treatment system.** A concise OM&M Plan that uses table(s) to summarize the monitoring and maintenance schedules is preferred.

The information provided by JCI/Tyco in previous progress reports satisfy many of the requirements in Wis. Admin. Code §§ NR 724.13(2) and NR 724.17(2); however, some additions are required to document waste management and to monitor the effectiveness of the interim action under Wis. Admin. Code ch. NR 724. **For the Ditch B OM&M Plan, the DNR directs JCI/Tyco to summarize the maintenance and monitoring activities that it has included in prior progress reports and to incorporate the following additions:**

- Operation and Maintenance: Waste Management
 - Describe the PFAS-impacted materials generated by the treatment system (e.g., spent carbon and bag filters), the estimated quantities of these materials per reporting periods, and the storage and handling procedures for these waste materials.
 - Maintain records of the waste material handling and disposal.

- Long-Term Monitoring Plan: Effectiveness in Controlling PFAS Migration in Ditch B
 - Record stream flow in Ditch B during each weekly monitoring event.
 - Record or estimate weekly volume of water moving past the treatment system that goes untreated (e.g., downtimes for maintenance, high flow events, or seepage not captured by the system).
 - Collect a PFAS sample from the surface water in Ditch B at location downstream of the treatment system at least once per month. Use the 36 PFAS analyte list JCI/Tyco is required to report.

- Calculate an estimate of PFOA and PFOS mass migrating downstream of the Ditch B treatment system for each month during the reporting period. This calculation must account for any untreated flow volume that by-passes the treatment system (e.g., downtimes for system maintenance, high flow events, or seepage not captured by the treatment system). Include the points of measurement and calculation method for DNR review and approval.

JCI/Tyco must continue to submit O&M Progress Reports for the Ditch B interim action on a semi-annual basis per Wis. Admin. Code § NR 724.13(3). In future O&M Progress Reports, the **DNR directs JCI/Tyco to continue to include the maintenance and monitoring activities that it has summarized in prior progress reports and include the following additions:**

- Number the reports sequentially in the report title (the next report will be Progress Report #4)
- Summarize and include records of waste and materials management.
 - Volumes of materials generated during the reporting period
 - Documentation of disposal or other handling (e.g., carbon regeneration) of the waste materials.
- Include table(s) that summarize the long-term monitoring results per Wis. Admin. Code § NR 724.17(3m):
 - Monthly concentrations of PFOA and PFOS measured in surface water in Ditch B upstream and downstream of the treatment system. (Upstream may be an average of in the influent).
 - Weekly flow volume treated by the system vs. total weekly flow in Ditch B. Total flow must account for system downtime, high flow events, or seepage not captured by the system.
 - Monthly average PFOA and PFOS mass removed by the Ditch B treatment system vs. monthly average PFOA and PFOS mass migrating downstream of the Ditch B treatment system. The monthly average PFOA and PFOS mass migrating downstream of the Ditch B treatment system must be calculated using method approved in the OM&M Plan (see above).
 - Running total of PFOA and PFOS mass removed by the Ditch B treatment system.

Conclusions

The DNR directs JCI/Tyco to submit an OM&M Plan for the Ditch B treatment system within 90 days of the date of this letter. The OM&M Plan can be revised in the future for any changes needed to the system or monitoring plan in accordance with Wis. Admin Code § NR 724.13(4) or as needed to address the application of new environmental standards per Wis. Admin Code § NR 724.19.

The DNR directs JCI/Tyco to continue to submit Wis. Admin Code § NR 724.13(3) O&M Progress Reports on a semi-annual basis in accordance with the established schedule and that includes the additional items listed above. JCI/Tyco may continue to use a similar reporting style and is not required to use Form 4400-194. DNR requests that JCI/Tyco continue to provide updates on general system operations during weekly check-ins or as otherwise needed.

Please note that all testing and reporting requirements for the WPDES permit still apply, as do the requirements for JCI/Tyco to further characterize the flow and contaminant transport in Ditch B between the treatments system and where the ditch discharges into the Bay of Green Bay.

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 § 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.

The DNR appreciates your efforts to investigate and remediate this Site. 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

cc: Mike Bedard, Arcadis (via email: Michael.bedard@arcadis.com)
Ben Verburg, Arcadis (via email: ben.verburg@arcadis.com)
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