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May 6, 2026

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 the *Interim Long-Term Monitoring Report #3*
JCI/Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI
BRRTS #02-38-580694

Dear Ms. Nelson:

On April 3, 2026, the Wisconsin Department of Natural Resources (DNR) received the *Interim Long Term Monitoring Report #3* (the "LTM Report #3"), for the above-referenced site (the "Site"), which covers monitoring activities and results from April 2025 to Feb. 2026. The *Revised Interim Long Term Monitoring Plan for Groundwater and Surface Water* (the "2026 Revised LTM Plan") was included as an appendix to the report. The report was submitted by Arcadis U.S., Inc. (Arcadis), on behalf of Johnson Controls, Inc., and Tyco Fire Products LP (JCI/Tyco) and was accompanied by the fee required under Wisconsin Administrative Code (Wis. Admin. Code) § NR 749.04(1) for DNR review and response.

The DNR's technical review comments on LTM Report #3 are provided herein. While much of the monitoring data supports JCI/Tyco's conceptual site model (CSM); some monitoring results do not. The cause and significance of results that don't align with the CSM, such as increasing concentrations trends or contaminant migration that is not controlled by the current interim remedial actions, must be evaluated in further detail in future LTM Reports, along with a proposed response action (Wis. Admin. Code § 724.173m)(f)). Monitoring results in LTM Report #3 that should be evaluated in future reports are summarized in **Attachment A**. The DNR's comments to criteria that JCI/Tyco proposed to use in the future when it updates the Revised LTM Plan are summarized in **Attachment B**.

Background

JCI/Tyco is investigating and responding to the discharge of per- and polyfluoroalkyl substances (PFAS) to the environment at the JCI/Tyco Fire Technology Center (FTC), located at 2700 Industrial Parkway South in Marinette, Wisconsin.

JCI/Tyco has initiated long-term surface water and groundwater monitoring and has implemented interim remedial actions, which include, but are not limited to, the Groundwater Extraction and Treatment System (GETS) and surface water treatment in Ditches A and B. JCI/Tyco also tests private drinking water wells in the Potable Well Sampling Area (PWSA) and provides alternative sources of safe drinking water – including replacement of over 135 private wells with new deep private wells – to address drinking water receptors in the PWSA. Each of these actions has an approved monitoring program to evaluate PFAS in groundwater and/or surface water. JCI/Tyco's site investigation activities completed prior to April 2025 and documentation of the interim remedial actions have been submitted in prior reports.

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Wholistic Monitoring Approach and Other Supporting Documents

JCI/Tyco has been taking steps to consolidate its various monitoring programs into a wholistic monitoring and reporting program for the Site. Most recently, the DNR approved JCI/Tyco to include monitoring performance of the GETS in the wholistic monitoring. The monitoring of drinking water in the PWSA was also approved for the wholistic monitoring plan once certain conditions are met.

Prior submittals and reviews considered in the DNR's review of LTM Report #3 included:

- July 31, 2025: DNR review of LTM Report #2 and the associated 2025 Revised LTM Plan
- Sept. 9, 2025: JCI/Tyco response to the DNR's July 31, 2025, letter
- Nov. 24, 2025: JCI/Tyco *Additional Monitoring Well Installation Work Plan*
- Jan. 5, 2026: DNR review of *11th Revised Long-Term Potable Well Sampling Plan*
- Feb. 5, 2026: DNR review of the *GETS Short-term Monitoring Report #6*
- Feb. 5, 2026: DNR review of *Additional Monitoring Well Installation Work Plan*
- Mar. 23, 2026: JCI/Tyco response to the DNR's Jan. 5, 2026, letter
- Apr. 3, 2026: JCI/Tyco *GETS Operation & Maintenance (O&M) Progress Report #1* [1]
- Apr. 10, 2026: JCI/Tyco draft notification letter explaining changes to monitoring private wells in PWSA [2]

LTM Report #3

LTM Report #3 documented groundwater and surface water monitoring completed between April 2025 and Feb. 2026. The field investigation activities completed during this reporting period included:

- Installation of monitoring wells PZ-88-16 and PZ-88-30 at location "p", north of the FTC, in Oct. 2025.
- Groundwater Monitoring:
    - Sampling of 128 monitoring wells in fall 2025 and 54 monitoring wells in spring 2025, with two additional quarterly sampling events at up to eight monitoring wells.
    - Sampling of four deep monitoring wells and the two school irrigation wells in spring and fall 2025.
    - Monthly sampling of the 15 GETS extraction wells (six new wells sampled once added to GETS).
    - Sampling five piezometers in the streambed of Ditch B three times.
    - Water level gauging during sampling events or continuously with pressure transducers.
- Surface Water Monitoring:
    - Sampling six surface water sampling points in Ditches A, C, D and E in spring 2025 and two points in fall 2025 (no surface water present at four of the six points in the fall).
    - Sampling Ditch B at 11 surface water sampling points quarterly, monthly at two locations and weekly at the surface water intake for the Ditch B treatment system.
    - Gauging surface water elevations at 16 locations in fall 2025 and continuous measurement of flow rate and stage in Ditch B.

[1] GETS O&M Progress Report #1 was submitted at same time as LTM Report #3, as requested by the DNR, to support its review of the findings and conclusions on the progress being achieved by GETS to restore the environment.

[2] The draft notification letter was submitted on April 10, 2026, to the DNR for review, as a part of the conditions of the DNR's Dec. 5, 2025, approval. The DNR reviewed and provided comments to the draft letter on April 20, 2026.

LTM Report #3 presented JCI/Tyco's interpretation and evaluation of the groundwater potentiometric surfaces, groundwater and surface water contamination extents and trends, the performance of the GETS and the groundwater quality of the deep aquifer used to supply drinking water in the PWSA.

Details on the DNR's technical review of LTM Report #3 are in **Attachment A**. General findings are as follows:

- Many of the monitoring data support JCI/Tyco's CSM and performance objectives.
    - The interpretations of the degree and extent of groundwater and surface water contamination have not changed significantly since long-term monitoring began.
    - The GETS is reducing the concentration of PFAS in surface water in Ditch B, and improvements in surface water quality in Ditch B were documented after recent upgrades made to the GETS.
    - The deep aquifer, which is the source of alternative drinking water for private wells in the PWSA, does not contain PFAS over the Wisconsin Department of Health Services (DHS) drinking water health advisory levels.
- Some data may not support the CSM and must be evaluated in further detail in future LTM Reports to comply with Wis. Admin. Code § 724.173(m)(f).
    - Contamination migrating southeast of the FTC does not appear to be controlled by the current interim remedial actions and additional measures may be needed to restore the environment to the extent practicable and reduce discharge of PFAS into the Bay of Green Bay along this migration pathway.
    - Increasing PFAS concentrations detected in certain monitoring wells.
    - Concentrations of PFAS detected in groundwater at monitoring well PZ-88-30 are greater than the proposed NR 140 enforcement standards for PFOA and PFOS.
    - The effects new extraction wells EW-10 and EX-11 have relative to the GETS performance goals.
    - Effect that future increases in the regional groundwater levels may have on the GETS performance.
    - Potential PFAS presence (i.e., detected below the reporting limit one time) in the deep aquifer.

2026 Revised LTM Plan

The 2026 Revised LTM Plan was included as Appendix G in the LTM Report #3. Modifications previously approved by the DNR were incorporated into the plan; no new modifications were proposed.

JCI/Tyco anticipates updating the plan in 2027 based on the findings and conclusions from the next year of long-term monitoring. Conditions that JCI/Tyco may evaluate when contemplating updates to the plan were outlined in the 2026 Revised LTM Plan. The DNR's comments to some of these conditions are provided in **Attachment B.** The DNR's comments do not constitute approval or disapproval of the conditions or possible changes. The comments are offered for JCI/Tyco to consider if, and when, it proposes changes to the LTM Plan in the future.

Next Steps

Implement the 2026 Revised LTM Plan and/or monitoring that has otherwise been approved by the DNR.

- Submit LTM Report #4 by **March 31, 2027**. Include evaluations of the cause and significance of increasing trends or uncontrolled contaminant migration, along with a proposed response (Wis. Admin. Code § 724.173m)(f)). Appropriate responses will vary by location and may include, but are not limited to, monitoring and focused evaluation for a period of time, updates/optimization to the current interim remedial actions or new actions at a specific location.

- If JCI/Tyco wants to make updates to its long-term monitoring plan next year, please submit the next Revised LTM Plan, on or about the same time as the LTM Report #4, as a standalone document with appropriate Wis. Admin. Code § NR 749.04(1) fee for DNR review and response.

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.

If you have any questions, please contact me at Alyssa.Sellwood@wisconsin.gov or (608) 622-8606.

Sincerely,

Alyssa Sellwood

Alyssa Sellwood, PE
Water Resources Engineer
Remediation & Redevelopment Program

Attachments

Attachment A: Technical Review Comments for LTM Report #3
Attachment B: 2026 Revised LTM - General Comments

Attachment A

Technical Review Comments for LTM Report #3

Recommendations or requirements for future LTM Reports noted in the technical review of LTM Repot #3 are highlighted in ***bold italic*** below.

Groundwater and surface water results that require further evaluation in future LTM Reports

- PFAS migrating in groundwater southeast from the FTC in the direction of monitoring well PZ-74-32 may not be adequately addressed by the current interim remedial measures, as needed to restore the environment to the extent practicable. ***Further evaluation is needed for this migration pathway, as evidenced by the following:***
    - Total PFAS concentrations over 10,000 ppt have been detected in monitoring well PZ-86-38 on the southeast corner of the FTC property. Groundwater migrating from this area is outside the current anticipated capture zone for the GETS.
    - Increasing trends of PFAS were detected downgradient from monitoring well PZ-86-38 in monitoring wells PZ-24-47 and MW-101-72.
    - PFOS and PFOA concentrations greater than their respective surface water quality standards have been detected at surface water monitoring point SW-26/26A. The elevated PFAS detected at this location, which is downstream of the FTC and the Ditch A surface water treatment system, have been attributed to contaminated groundwater moving southeast from the FTC and discharging into the ditch.
    - 6:2 and 8:2 fluorotelomer sulfonates (FTS) have been detected in groundwater and surface water along the flow paths between the FTC and monitoring well PZ-74-32. These are primary components of the PFAS discharged on the FTC property. FTS can transform to PFOA and other terminal PFAS compounds and they tend not to be detected in the margins of the groundwater plume at this Site. Their presence suggests the FTC continues to act as a source of PFAS to groundwater migrating along this flow path.
- Increasing concentrations of PFAS were observed in groundwater at the following locations, some of which JCI/Tyco selected to evaluate stability of the plume. ***Observed increases in concentration require further discussion in future LTM Reports as to the cause and significance and response actions***.
    - Southeast of the FTC, as noted above, at monitoring wells MW-24-47 and MW-101-72.
    - Downgradient of the GETS and Ditch B at monitoring wells PZ-28-75, PZ-29-43 and the PZ-79 well nest. (While true that PFAS levels decreased in monitoring well PZ-28-75 in the most recent sampling event, a similar fluctuation previously occurred and an overall increasing trend continued thereafter.)
- The concentrations of PFAS in groundwater in new monitoring well PZ-88-30 are greater than the recommended NR 140 groundwater enforcement standards. ***Additional work to delineate the extent of contamination may be needed depending on future trends observed in this monitoring well***.

GETS Performance

- Initial monitoring results in the months after updates were made to optimize the GETS are favorable with respect to surface water quality in Ditch B.
    - Concentrations of PFAS in the surface water in Ditch B have decreased upstream of the Ditch B surface water treatment system.[3] The concentrations of PFOA were reduced to levels below the

[3] JCI/Tyco has indicated that its goal is to use GETS to meet the surface water standards for PFAS in Ditch B, and to stop operating the Ditch B treatment system. If PFAS surface water standards in Ditch B cannot be met using GETS alone as currently designed, and JCI/Tyco wants to stop operating the Ditch B treatment system as it has suggested, then the DNR recommends that JCI/Tyco evaluate if further GETS optimization and/or another supplemental interim remedial action can be used to meet this objective.

surface water standard of 95 ppt and the concentration of PFOS were reduced to levels that are now only slightly above the surface water standard of PFOS of 8 ppt.

  - The concentration of PFAS detected in surface water in the tributary to Ditch B northeast of Pierce Avenue decreased substantially, along with reduced flow, after new extraction wells EX-12 and EX-13 were added to the GETS.
  - The desired shift from gaining to loosing stream conditions were observed at each of the streambed piezometers located within the area of influence of the GETS.
  - Seasonal and regional changes control the surface water flow rate in Ditch B; the GETS has minimal impact on the surface water flow rate.
  - While not part of the discharge permit for GETS, the concentration of FTSs in the surface water in Ditch B have also decreased since GETS began operations. This is significant because FTSs are primary components of the PFAS discharge from the Site, and the long-chain FTSs can transform to PFOA and other terminal PFAS in the environment. ***The DNR recommends including FTS trends as a line of evidence in the technical evaluation of the GETS in future LTM Reports***.

- A regional 2-to 3-foot decline has been observed in groundwater elevations in the last 3 years due to natural cyclic-lowering of the lake level in Green Bay. The desired shift in Ditch B from a gaining to a loosing stream that has occurred since the GETS began operating, could be partially attributed to this decline in the regional groundwater water level. ***The gaining and losing stream conditions in Ditch B should continue to be monitored to evaluate if regional water level fluctuations impact GETS performance***.
- There has not been a significant change observed in the PFAS concentrations in surface water in Ditch A after extraction wells EX-10 and EX-11 were added to the GETS. JCI/Tyco states that it expects changes to occur over time; however, Ditch A surface water was not specifically evaluated in the section of the report devoted to the GETS performance. ***Ditch A should be included for the evaluation of the GETS performance in future LTM Reports.***

Deep Aquifer:

- PFAS have not been detected over the reporting limit in the deep aquifer.
- The water levels in the deep aquifer are controlled by seasonal fluctuations.
- 6:2 FTS was detected (at an estimated level below the reporting limit) in the sample collected in deep monitoring well DMW-4 in Dec. 2025. Because the concentration was below the reporting limit and no other PFAS were detected, it is not a concern requiring a response other than continued monitoring at this time.

Attachment B

2026 Revised LTM Plan – General Comments

No changes were included in the 2026 Revised LTM Plan that were not already approved. General comments to the conditions that JCI/Tyco proposes to use in future updates to the LTM Plan and a few other general recommendations are provided below for consideration.

Comments on Modification Criteria:

- Surface Water Criteria: "*Reduce the number of surface water sampling locations [in Ditch B] from 11 to two (SW-U10 and SW-P1B) and reduce the frequency of sampling to semi-annual."*
    - Consider keeping sampling points that are within the area where groundwater discharge of PFAS was most significant before the GETS (e.g.,SW-U03, SW-M07 and SW-L09) or provide further justification for how the selected monitoring points will demonstrate GETS performance.
    - With less frequent sampling, it will be important to select sampling dates that correspond to high flow conditions when PFAS concentrations in Ditch B have been found to be highest.
- Surface Water Criteria: "*Discontinue the collection of relative surface water levels and streambed groundwater levels measurements."*
    - If this is discontinued, consider criteria for when restarting measurements may be useful (e.g., if PFAS concentrations increase in Ditch B or if it otherwise becomes useful to evaluate the impact that regional cyclic increases in water levels have on groundwater discharge into Ditch B.)
- Private Well Criteria:
    - Please include a flow chart, like the one provided in the letter dated Mar. 23, 2026, to clarify the decision tree for decision making on private wells.
    - The DHS Health Advisory Levels are used to advise people about the health and safety of water consumed from their private drinking well. Because monitoring wells are being used as proxies to inform about drinking water quality in private wells, the DHS health Advisory Levels (not just the recommended groundwater enforcement standards) should be used to evaluate the results from these monitoring wells assigned as proxies to one or more private drinking water wells.
    - If testing shows that more frequent maintenance of a point of entry treatment (POET) system is needed, then testing of the effluent should be completed just prior to the next scheduled maintenance to confirm that the new frequency for maintenance will achieve the DHS Health Advisory Levels.
    - The current plan suggests that the sampling frequency for the monitoring wells may be reduced to once every four years or suspended based on the testing results. While potentially approvable, please generalize this statement in future LTM Plans to reflect that reductions to the sampling frequency may be proposed on a location-by-location basis to avoid misunderstanding of what is being approved.
    - Factor in groundwater migration rate for if and when private wells will be retested based on results from the paired monitoring well.

Suggestions to Future Updates:

- In the next Revised LTM Plan, please include list of monitoring wells not used, their construction details, and most recent sampling data. Evaluate and propose, as appropriate, the abandonment of monitoring wells that are not used. Maintain a list of abandoned monitoring wells – showing the status as approved or complete.
- Group the monitoring wells used to evaluate private wells in their own section of the tables for clarity.
- Define what the grey cells mean in the tables to avoid misunderstanding. For purposes of this review the DNR assumed that grey cells meant monitoring program to be defined in future updates to the plan.