



March 4, 2022

MR. DAVID MIELKE  
CHEMDESIGN PRODUCTS, INC.  
2 STANTON STREET  
MARINETTE, WI 54143

Via Email Only to [dmielke@chemdesign.com](mailto:dmielke@chemdesign.com)

SUBJECT: Response to Limited Site Investigation Report  
ChemDesign Products, Inc. (PFAS)  
2 Stanton Street, Marinette, WI  
BRRTS #02-38-583852

Dear Mr. Mielke:

On January 12, 2022, the Wisconsin Department of Natural Resources (DNR) received the *Limited Site Investigation Report* ("Limited SI Report") dated January 3, 2023 for the above-referenced site (the "Site"), which was submitted by Terracon Consultants, Inc. (Terracon) on behalf of ChemDesign Products, Inc. (ChemDesign<sup>1</sup>). The Limited SI Report documented the investigation of per- and polyfluoroalkyl substances (PFAS) and was accompanied by the appropriate fee of \$1,050 required under Wisconsin Administrative Code (Wis. Adm. Code) § NR 749.04(1), for formal DNR review and response.

This Site is unique in that ChemDesign leases 7.4 acres of a 66-acre property from Tyco Fire Products LP of Johnson Controls, Inc. (JCI/Tyco); ChemDesign's and JCI/Tyco's buildings are interspersed and both entities handle PFAS-containing materials in their operations. JCI/Tyco is also responsible for investigating PFAS contamination on the property under BRRTS #02-38-581955.

The DNR reviewed ChemDesign's Limited SI Report, which identified PFAS in the soil and groundwater samples collected at the Site, concluded that PFAS contamination is dispersed throughout the property and recommended that the investigation proceed under JCI/Tyco's work for BRRTS# 02-38-581955.

The DNR is amenable to JCI/Tyco proceeding with a holistic PFAS investigation that covers both BRRTS cases on the property if submittals to the DNR explicitly identify coverage of both BRRTS #02-38-581955 and #02-38-583852 and the scope of work addresses potential sources and pathways from both JCI/Tyco's and ChemDesign's operations. This holistic approach does not release ChemDesign of its responsibility to address discharges that occurred from its operations. If work proposed and completed by JCI/Tyco for BRRTS #02-38-581955 does not acknowledge and address potential sources and pathways for PFAS from ChemDesign's operations, ChemDesign must proceed with the investigation and cleanup for BRRTS #02-38-583852 in accordance with applicable laws.

A Site Investigation Work Plan (SI Work Plan) for BRRTS #02-38-583852, whether submitted together or separately from a SI Work Plan for BRRTS #02-35-581955, is required within 60 days after date of this letter (Wis. Adm. Code § NR 716.09(1)).

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<sup>1</sup> ChemDesign is a current subsidiary of ChemDesign Holdings, Inc. and for purposes of this letter the name ChemDesign is inclusive of all names or parent company relationships that have transpired since 1983.

## Background

On August 31, 2021, the DNR responded to ChemDesign's initial SI Work Plan. In the response the DNR noted that the proposed scope would provide an initial assessment focused on locations where ChemDesign handles PFAS-containing materials, but that it would not result in a complete site investigation under Wis. Adm. Code ch. 716. Additional work was anticipated following this initial phase of the investigation.

## Summary of the Limited SI Report

ChemDesign addressed the DNR's comments to the SI Work Plan and completed the initial investigation in the fall of 2021. Terracon, on behalf of ChemDesign, installed 11 direct-push borings. One unsaturated soil sample was collected from the upper 2 to 2.5-feet from each boring and a groundwater sample was collected from a temporary well screened 2 to 7 feet below ground at each location. The samples were analyzed for 36 PFAS compound by Eurofins TestAmerica.

The results were compared to the current recommended groundwater standards and to the soil residual contaminant levels (RCLs) for the three PFAS having established direct contact RCLs (perfluorooctanoic acid [PFOA], perfluorooctanesulfonic acid [PFOS] and perfluorobutanesulfonic acid [PFBS]). The results were also compared to the soil and groundwater concentrations from JCI/Tyco's initial investigation activities for BRRTS #02-38-581955. The soil concentrations were all below the established direct contact RCLs and the groundwater concentrations were above recommended standard at all locations. The groundwater concentrations from the temporary wells were comparable to concentrations from JCI/Tyco permanent wells network where data was available. Terracon concluded that the results from the temporary wells were representative of groundwater conditions at respective sample locations.

## DNR Review

The DNR reviewed the Limited SI Report and found that additional work is needed to investigate potential sources and migration pathways for PFAS from ChemDesign's operations at the Site. Please consider the following observations and specific questions noted below and address these within the SI Work Plan or the supplemental response listed under Next Steps at the end of this letter.

Fluorotelomer sulfonates (FTSs): The highest concentrations of PFAS detected in the soil and groundwater samples were for the fluorotelomer sulfonates (FTSs) 8:2 FTS and 6:2 FTS. For example, in groundwater 8:2 FTS and 6:2 FTS were as high as 170,000 parts per trillion (ppt) and 910,000 ppt, respectively, and in soil 8:2 FTS and 6:2 FTS were as high as 270 parts per billion (ppb) and 210 ppb, respectively. These concentrations are indicative of source(s) of PFAS discharges to the environment. Although FTSs do not currently have established or recommended standards, it is known that these polyfluorinated compounds can transform into perfluorinated compounds like PFOA or perfluorobutanoic acid (PFBA); both compounds have recommended groundwater standards, and in the case of PFOA, established direct contact RCLs.

- How do FTS concentrations in soil and groundwater near ChemDesign's operations compare to the FTS concentrations near JCI/Tyco's operations?
- Are the FTS concentrations indicative of discharges from ChemDesign's handling of PFAS-containing materials? If so, what are the sources of FTSs and have these been controlled/mitigated at the Site?
- Are FTSs transforming to perfluorinated compounds in the environment at the Site? Additional monitoring will likely be needed to complete this evaluation.

Sanitary Sewers: The discussion on sanitary sewers in the Limited SI Report addressed current and not historical conditions. The sanitary sewers on this property were/are known to leak, and discharges from ChemDesign to the sanitary sewer were found to contain PFAS. The following is taken from JCI/Tyco's December 2021 *Sanitary Sewer Rehabilitation Completion Report* for BRRTS 02-38-581955:

“ ... staff collaborated with ChemDesign to coordinate additional rehabilitation activities on the ChemDesign sanitary sewer system upstream of MH-27. Samples were collected from heating and cooling circuits (i.e., cooling tower and boiler condensate). These samples were found to be impacted by PFAS. ChemDesign was able to isolate the source to a unit process that was used for both process and non-process water. A process change and best management practice were implemented to eliminate this source of cross-contamination. In addition, ChemDesign was in the process of constructing a new building that would eliminate the need for sanitary sewer connections upstream of LS-118. The new building would be connected to MH-119 via a new subsurface force main. Following the sewer rehabilitation campaign conducted in February 2020, a decision was made to abandon all of the sanitary sewer connections upstream of MH-119.”

- Please provide further information about the PFAS detected in these processes. Is this source of PFAS now being controlled? How?
- Did ChemDesign’s historical discharges of PFAS to the sanitary sewers contribute to the PFAS contamination in soil and groundwater along the utility corridor (both inside and outside the property boundary)? A field investigation is likely needed to evaluate this migration pathway.
- How did ChemDesign’s historical discharges of PFAS to the sanitary sewers contribute to the PFAS contamination previously detected in the city of Marinette Wastewater Treatment Plant’s biosolids?

Air Emissions: In the Limited SI Report, the non-vented reactors used by ChemDesign to process PFAS are described, with mention that occasionally the reactors need to be vented and the emissions from the secondary condenser are directed to a caustic scrubber that absorbs non-PFAS reagents. Currently the means to test these emissions for PFAS is not available, but there is the potential for PFAS to be present in these emissions in various forms. At this time, we cannot rule air emissions out as a potential migration pathway from the Site, and it may be relevant to consider this pathway with interpreting results from other media sampled for PFAS during the site investigation.

Soil Leaching to Groundwater: The concentrations of compounds with established RCLs (PFOA, PFOS and PFBS) detected in soil at the Site are below their respective direct contact RCLs; however, ChemDesign must also evaluate the soil concentrations of all detected compounds based on the protection of groundwater (Wis. Adm. Code §§ NR 720.08(2) and NR 720.10). This includes PFAS compounds that have recommended groundwater standards and compounds like 8:2 FTS and 6:2 FTS that can transform into perfluorinated compounds that have recommended groundwater standards. Meeting this requirement is needed to evaluate remedial actions for the Site (Wis. Adm. Code § NR 722.07); this include evaluating the effectiveness of the current remedial actions relative to the PFAS contamination from this Site.

### **Next Steps**

The DNR is amenable to a holistic approach to the PFAS investigations occurring on this property and allowing JCI/Tyco’s investigation for BRRTS #02-38-581955 to include ChemDesign’s required investigation for BRRTS #02-38-583852. The DNR is not a party of any third-party agreements which may exist between JCI/Tyco and ChemDesign relating to these BRRTS cases; therefore, submittals to the DNR must be explicit in their intended coverage. Submittals and work that are intended to be holistic must identify both BRRTS cases and the scope must address the potential sources and migration pathways associated with each case.

- Within 60 days of date of this letter, submit an SI Work Plan (Wis. Adm. Code § NR 716.09) that includes a field investigation designed to meet the requirements of Wis. Adm. Code NR § 716.11.

\* Note, the DNR anticipates receiving an SI Work Plan from JCI/Tyco for BRRTS #02-38-581955 by March 22, 2022. If ChemDesign and JCI/Tyco choose to proceed with a holistic approach to the

investigation, the DNR is amenable to this SI Work Plan covering both for BRRTS #02-38-581955 and #02-38-583852.

- If there are responses to the requests for information and questions listed above that are not addressed in the SI Work Plan, those responses can be submitted to the DNR under separate cover. This supplemental response is also due within 60 days of date of this letter. To the extent practicable, the DNR requests that any supplemental response be submitted on or about the same time as the SI Work Plan.

As a reminder, this Site is subject to an enforcement action and therefore all submittals to the DNR under Wis. Adm. Code chs. NR 700-799 and submittals directed by the DNR must be accompanied by an Wis. Adm. Code ch. NR 749 fee per Wis. Stat. § 292.94. These fees are not pro-ratable or refundable per Wis. Adm. 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](mailto:Alyssa.Sellwood@wisconsin.gov).

Sincerely,



Alyssa Sellwood, PE  
Complex Sites Project Manager  
Remediation & Redevelopment Program

cc: Tom Willis, ChemDesign (via email: [twillis@chemdesign.com](mailto:twillis@chemdesign.com))  
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