



February 9, 2022

MS. DENICE NELSON
JOHNSON CONTROLS, INC
5757 N. GREEN BAY AVENUE
MILWAUKEE, WI 53209

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

Via Email Only to denice.karen.nelson@jci.com and scott.wahl@jci.com

SUBJECT: *Land-Applied Biosolids Preliminary Assessment Plan*
JCI/Tyco Biosolids – Multiple Landspreading Fields
BRRTS #02-38-583856

Dear Ms. Nelson and Mr. Wahl:

On December 23, 2021, the Wisconsin Department of Natural Resources (DNR) received the *Land Applied Biosolids Preliminary Assessment/Site Investigation Work Plan* (the “Preliminary Assessment Plan”). 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 appropriate fee of \$700 required under Wisconsin Administrative Code (Wis. Adm. Code) § NR 749.04(1), for formal DNR review and response.

The DNR reviewed the Preliminary Assessment Plan, including the cover letter where JCI/Tyco stated that they will provide bottled water to certain properties¹; however, they will not conduct additional testing of potentially affected drinking water receptors. The DNR reminds JCI/Tyco that they are required to make a good faith effort to sample potentially affected drinking water receptors under Wis. Adm. Code § NR 716.13(16).

The DNR finds that the Preliminary Assessment Plan is designed to gather initial screening data but is not designed as a field investigation to determine the nature, degree and extent of contamination in all affected media per Wis. Adm. Code § NR 716.11. The DNR reminds JCI/Tyco that a site investigation work plan that complies with Wis. Adm. Code § NR 716.09 (a “NR 716 SIWP”) was listed in the July 3, 2019 responsible party letter and remains a requirement for this case that has not been met. JCI/Tyco may complete the Preliminary Assessment to help define the scope for the NR 716 SIWP, and must submit an NR 716 SIWP at completion of the work in accordance with Wis. Adm. Code § NR 716.11.

If you do not submit a NR 716 SIWP designed to meet all applicable site investigation requirements (Wis. Adm. Code ch. NR 716) and do not make a good faith effort to sample potentially drinking water receptors (Wis. Adm. Code § NR 716.13(16)) you are choosing to not comply with applicable state laws.

¹ A list of properties to be offered bottled water was provided to the DNR on January 25, 2022.

Background

In 2018, the city of Marinette notified the DNR of per and polyfluoroalkyl substances (PFAS) contamination present in influent wastewater received by the Marinette Wastewater Treatment Plant (WWTP) and in biosolids generated by the WWTP. From 1997 to 2017, a total of 61 fields in Marinette and Oconto counties were approved to accept biosolids from the WWTP. The fields where PFAS-contaminated biosolids from the city of Marinette were land applied between 1997 and 2017 are identified herein as the “Site;” maps of the Site are included in **Attachment A**.

JCI/Tyco’s industrial operations in Marinette were identified as sources of PFAS in the city’s biosolids that were land applied to the Site (testing by the city of Marinette found that PFAS levels in sanitary sewer zones servicing JCI/Tyco’s facilities were approximately 20 times higher than other zones in the city). On July 3, 2019, the DNR notified JCI/Tyco of its responsibilities to address PFAS contamination at the Site where the city of Marinette’s biosolids were land applied, including sampling of public and private water supply wells to help determine the extent of groundwater contamination (Wis. Adm. Code § NR 716.13 (16)) and submitting a NR 716 SIWP. The correspondence between JCI/Tyco and the DNR that followed was documented in the DNR’s September 14, 2021 letter citing JCI/Tyco with a Notice of Non-compliance (NON). On October 7, 2021, the DNR hosted a call for JCI/Tyco and its representatives to discuss the requirements listed in the NON.

Summary of JCI/Tyco’s Preliminary Assessment Plan

The DNR’s understanding of the Preliminary Assessment Plan is summarized below. The work is divided into two phases – Phase 1 Document Review and Phase 2 Initial Field Data.

In Phase 1, JCI/Tyco will review information and records provided by the DNR, the cities of Marinette and Peshtigo and the owners of the 61 fields comprising the Site, and use this information to select a subset of fields for sampling. Information on quantity of biosolids applied to a field, PFAS results from drinking water wells tested near each field, local geology, property use and ability to access the fields will also factor into the field selection. JCI/Tyco plans to sample up to six of the 61 fields and one background field (a field in the area with no known land application of biosolids).

The Preliminary Assessment Plan does not provide the specific criteria JCI/Tyco will use to select the fields to be sampled in Phase 2; however, JCI/Tyco will submit a document that summarizes the information reviewed and the fields to be sampled prior to implementing Phase 2.

In Phase 2, JCI/Tyco will install up to five direct push borings at each of the selected fields. One boring will be installed near the center of the field and the others around the perimeter. The target depth of each boring will be 30 feet; a composite soil sample will be collected from the upper 2 feet and another from the 2 feet above the first encounter of wet soils. A temporary 1-inch PVC monitoring well will be installed in each boring; the well will be screened where water is first encountered with a 5 to 10-foot well screen. This first encountered water may represent perched water and not the water table. JCI/Tyco will collect a water sample and measure the water level after each temporary well is developed. The temporary well will be removed and the borehole abandoned when sampling is complete. Prior to abandonment the location and vertical elevation of the wells will be surveyed. The soil and water samples will be submitted for analysis for PFAS in accordance with the 2021 Revised Quality Assurance Project Plan (QAPP) and the water levels will be used to estimate the direction of local groundwater flow.

JCI/Tyco plans to complete the field sampling in the third or fourth quarter of 2022 and will submit a report documenting the field data within 60 days after completion of the work.

DNR Review

The Preliminary Assessment Plan does not meet the requirements of a Wis. Adm. Code § NR 716.09 site investigation work plan. JCI/Tyco may proceed with the Preliminary Assessment to gather information to scope and submit a NR 716 SIWP at completion of the work. The DNR's review comments on the Preliminary Assessment are provided below.

JCI/Tyco and its representatives requested DNR records related to the Site to assist in their assessment – these past requests and the DNR's responses are summarized in **Attachment B**. On January 23, 2022, JCI/Tyco submitted a request for additional records; the DNR will provide JCI/Tyco with a written response that further explains the records it has provided to date and will ask JCI/Tyco for clarification on their most recent request. The DNR will provide responsive records once clarification is received.

Waiting for response to the additional request for records before proceeding with selection of fields to sample in the Preliminary Assessment is not approved. To date, the DNR has provided JCI/Tyco with sufficient information to select fields for sampling in Phase 2. The DNR has provided JCI/Tyco with the following:

- The 61 fields approved to receive biosolids from the city of Marinette WWTP (i.e., the “Site”):
 - Figures identifying the specific areas approved for landspreading (see **Attachment A**) and the reported size (acreage) of each field.
 - Reported data of the quantity and year(s) that biosolids from the city of Marinette WWTP were landspread on each field.
 - Reported data on the facility names, material type, and quantity by year of application for all entities to report landspreading on any of these 61 specific fields.
- All fields reported to receive industrial, municipal, and septage wastewaters via landspreading in Marinette and Oconto counties:
 - Reported field size (acreage), PLSS legal description, and latitude and longitude coordinates for the center point of the of the quarter-quarter section containing each field.
 - Reported data on the facility names, material type, and quantity by year of application for all entities to report landspreading on any of these permitted fields.

After you receive and review the DNR's more detailed explanation of information previously provided, please contact the DNR if you have specific questions or examples of evaluations where you need further assistance to proceed with selection of fields for Phase 2.

Please address the following comments in a submittal to the DNR prior to starting the Phase 2 field work.

In the Preliminary Assessment Plan, JCI/Tyco suggests its approach aligns with the biosolids land application study completed by Michigan Department of Environment, Great Lakes, and Energy (EGLE)². The DNR compared the two studies and found several key differences. Four differences are presented below and requests for clarification or considerations for the proposed the Preliminary Assessment are highlighted in italics.

² https://www.michigan.gov/documents/egle/PFAS-Biosolids-Field-Reports-Summary-WRD_723013_7.pdf

1. EGLE used USDA soils maps, regional groundwater flow information, and local surface water drainage to select sample locations. (a) *The Preliminary Assessment Plan does not specify these data evaluations. Will similar data be used to select fields and boring locations for sampling in Phase 2?*
2. EGLE characterized soil concentrations on the land application fields using composite soil samples collected from decision units (DUs) defined for each field. Soil was collected using a 3/4" diameter soil corer to a depth of 1-foot and composited from nine aliquots in each DU. (a) *Explain how soil samples collected from five direct push borings in the selected fields (ranging in size from 3 to 105 acres) will be representative of the PFAS concentrations in each field and if field size is expected to affect the results.*
3. EGLE collected groundwater from permanent 2-inch monitoring wells and installed shallow and deep wells at several locations to also assess the vertical migration in the groundwater. (a) *Assessment of vertical migration is recommended to further the conclusions that may be drawn from the Preliminary Assessment.* (b) *Consider constructing some or all wells as NR-141 compliant permanent monitoring wells, which are required for the site investigation. If access or other site-specific considerations necessitate use of temporary 1-inch wells during the Preliminary Assessment, request approval under Wis. Adm. Code § NR 141.29 and include rationale.*
4. EGLE collected surface water samples from local ponds, creeks, perched water (i.e., standing water in the fields), and drain tile. (a) *Collect surface water samples to further the conclusions that may be drawn from the Preliminary Assessment and help scope the NR 716 SIWP.* (b) *Consider pairing the surface water samples with sediment samples.*

The remainder of the DNR's review comments are independent of comparison to EGLE's study.

5. *Timing of Field Work:* Conduct the Phase 2 sampling as soon as practicable. As stated above, JCI/Tyco has sufficient information to select fields for the Preliminary Assessment, and can begin work to select fields and obtain access from landowners.
6. *Selection of Fields:* Drinking water well identified on map panels 2, 3, and 7 (**Attachment A**) had the highest concentration of PFAS in wells tested and a high density of wells over recommended groundwater standards. Fields on these three map panels should be include in the Preliminary Assessment or justification should be provided for why fields in these area were not selected for testing.
7. *Number of Samples:* The plan for the Preliminary Assessment indicates "up to" six of the 61 fields and "up to" five borings per field. The DNR considers these as the minimum and not the maximum number of sample locations. If access or local conditions prevent sampling at a particular location, select and complete sampling at an alternative location. Consider including contingency fields in the selection process in the event that access to a selected field is denied.
8. *Shallow Bedrock:* Describe how groundwater will be characterized in locations with shallow bedrock, and update the sampling plan to collect and test soil from the bottom 2 feet of the boring if refusal occurs before groundwater is detected. A spot check of the available well construction logs at the Site finds that the depth to bedrock may be as shallow as 10 feet in some areas (e.g., map panels 3, 4, 6, 7, and 9 in **Attachment A**), and groundwater may not be present in the shallow soils.
9. *Survey:* Measure the ground surface elevation for all groundwater monitoring wells and any additional soil borings not completed as wells.
10. *Documentation Report:* Include an NR 716 SIWP with submittal of the documentation report for this Preliminary Assessment. JCI/Tyco may use findings and conclusions from the Preliminary Assessment to help scope the NR 716 SIWP.

Schedule and Next Steps

Please follow these next steps to demonstrate progress in completing the Preliminary Assessment and development of an NR 716 SIWP.

- **By June 1, 2022:** Submit a report to the DNR that responds to the comments in this letter, documents the work completed for Phase 1 and summarizes the criteria used to select fields to sample in Phase 2.
 - o Include maps identifying the fields selected for sampling, the proposed boring/well locations and the private wells locations and testing results within the buffer zone for each field.
 - o Document that access agreements are in place for the fields selected for sampling and submit a schedule for conducting the Phase 2 field work as soon as access for sampling is permitted by the landowners.
- Within **60 days** after completion of Phase 2, submit a documentation report that includes a NR 716 SIWP. As a reminder, sampling water supply wells that may be affected by the contamination remains a requirement for the field investigation at the Site (Wis. Adm. Code § NR 716.13(16)).

Failure to take the actions required by Wis. Stat. § 292.11 to address this contamination will cause the DNR to consider this case for additional enforcement actions including referral to the Department of Justice. Please be aware Wis. Stat. § 292.99(1) authorizes the Department of Justice to seek penalties of up to \$5,000 per day and Wis. Adm. Code § NR 728.05 authorizes the DNR to seek penalties for violations of applicable rules, including Wis. Adm. Code ch. NR 716 site investigation requirements. Additionally, please be advised that the DNR is authorized under Wis. Stat. § 292.94 to assess non-reimbursable fees for any reports you are required to submit as part of additional enforcement actions.

If you have any questions about this letter, or wish to set up the proposed meeting, please contact me, the DNR Project Manager, at (608) 622-8606 or Alyssa.Sellwood@wisconsin.gov.

Sincerely,



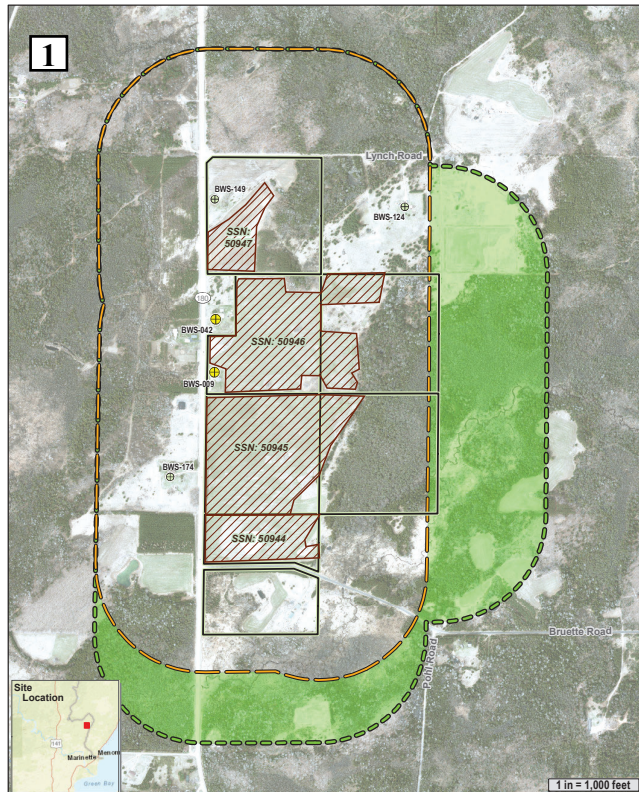
Alyssa Sellwood, PE
Complex Sites Project Manager
Remediation & Redevelopment Program

Attachments: Attachment A: Copy of Maps of Fields from September 14, 2021 NON
Attachment B: Summary of Previous Records Requests and Response

cc: Jodie Peotter, DNR (via email: Jodie.peotter@wisconsin.gov)
Alexis Heim Peter, DNR (via email: Alexis.Peter@wisconsin.gov)

JCI/Tyco BRTS 02-38-583856

Portable Well PFAS Sampling Areas Near Biosolid Landspreading Fields



JCI/Tyco sampled potable well (Mar 2020 - Apr 2021)
 (Well locations and results provided by JCI/Tyco)

- ⊕ PFAS not detected
- ⊕⋅ PFAS < proposed Cycle 11 groundwater standards
- ⊕⋅⊙ PFAS >= proposed Cycle 11 groundwater standards

JCI/Tyco provided 1,200' buffer (initial buffer)

- ▨ LAG biosolid field (see note)
- ▭ Property boundary with field approved for landspreading city of Marinette biosolids

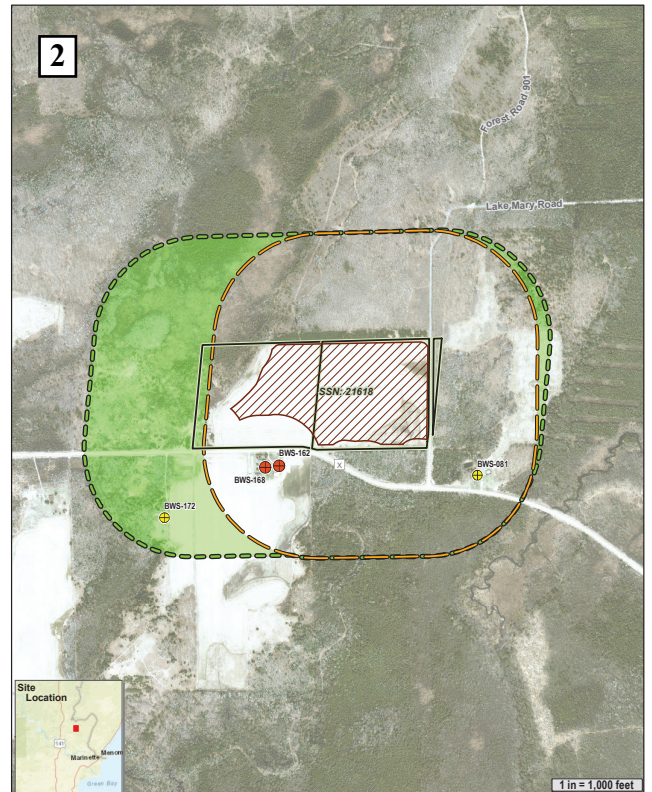
1,200' buffer from applicable property boundary

- ⊕ Buffer area to be added to JCI/Tyco's study

NOTE: LAG is DNR's Land Application Geo-database. LAG areas are based on desktop review, legal descriptions and landowner-provided information and are for reference purposes only. The mapped areas are not necessarily reflective of where biosolids were spread, but are those areas suitable for sewage sludge spreading pursuant to ch. NR 204 requirements that the city of Marinette was approved to use.

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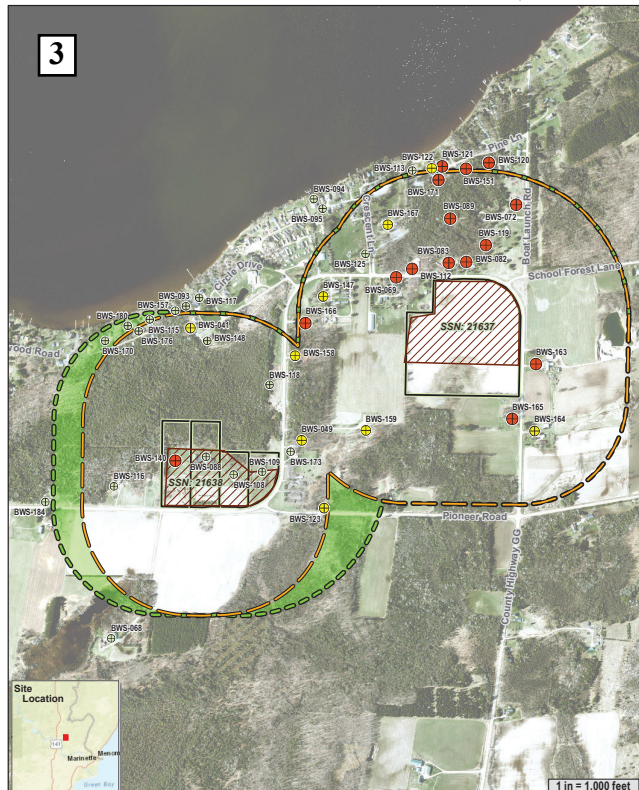
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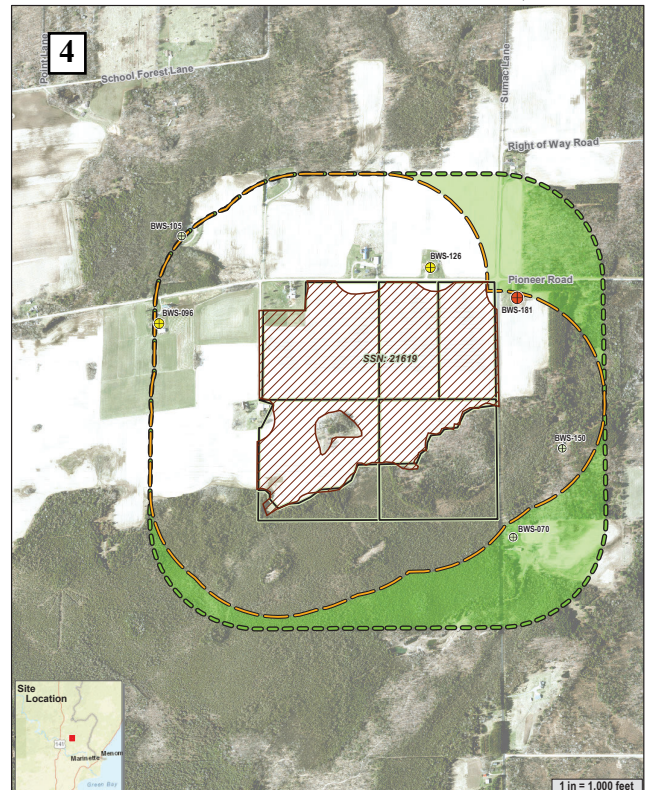
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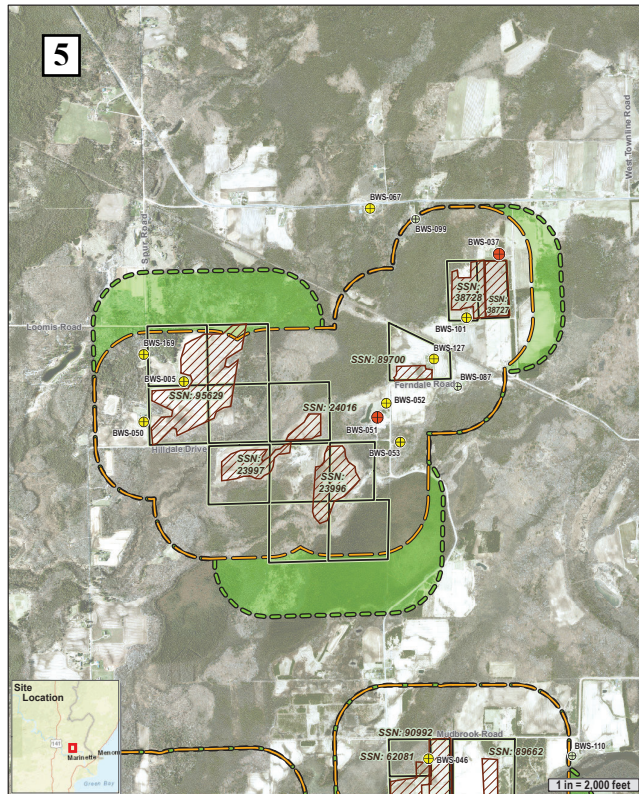
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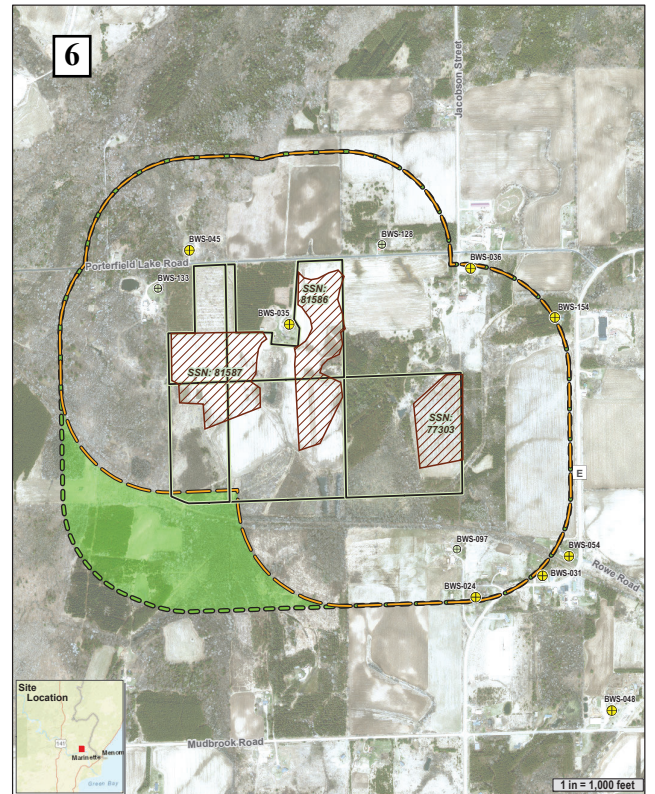
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1 in = 2,000 feet

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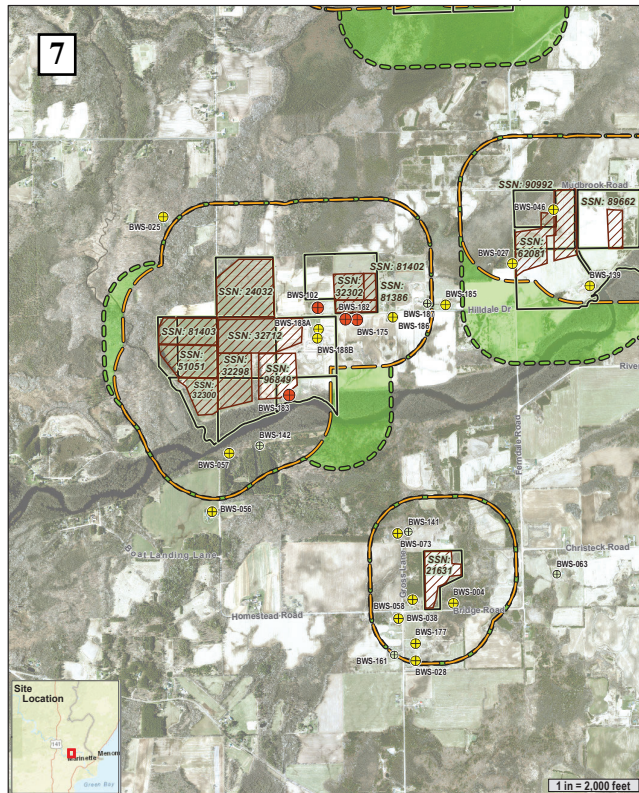
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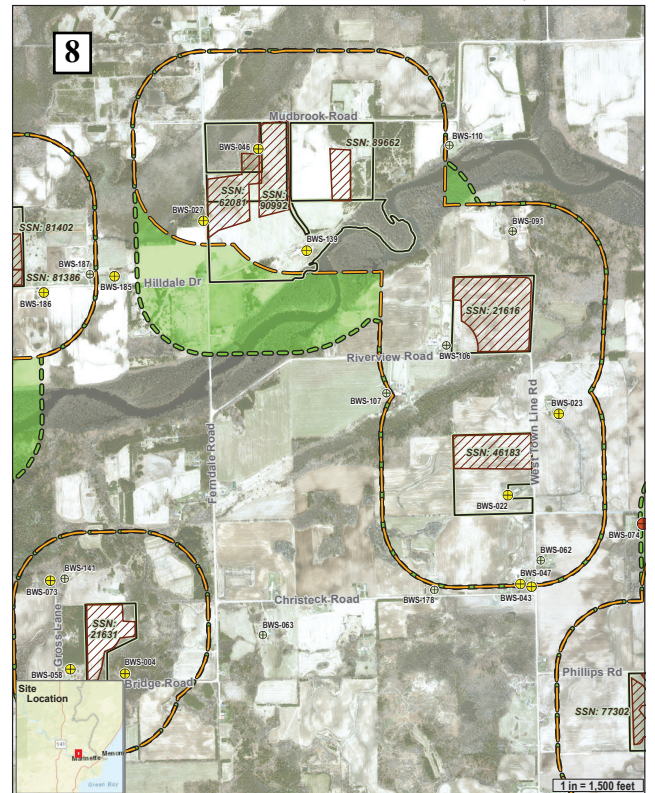
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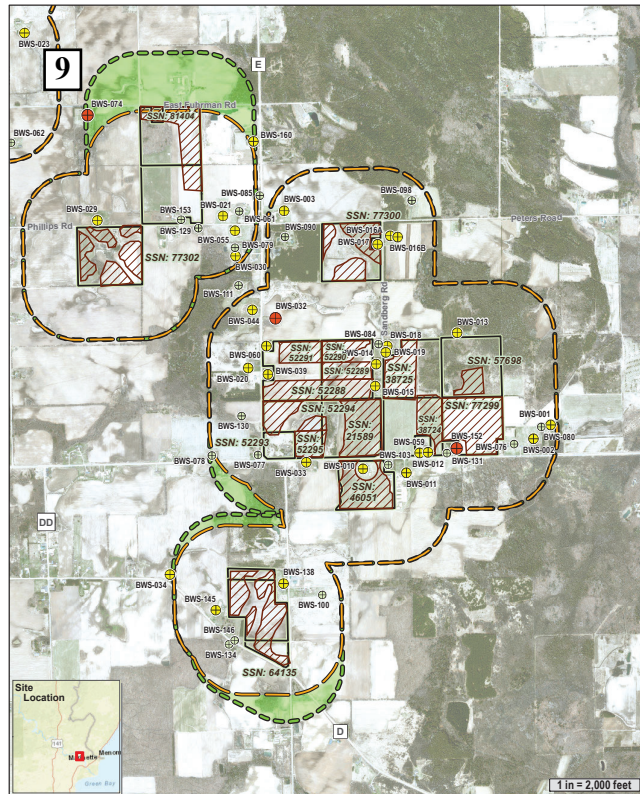
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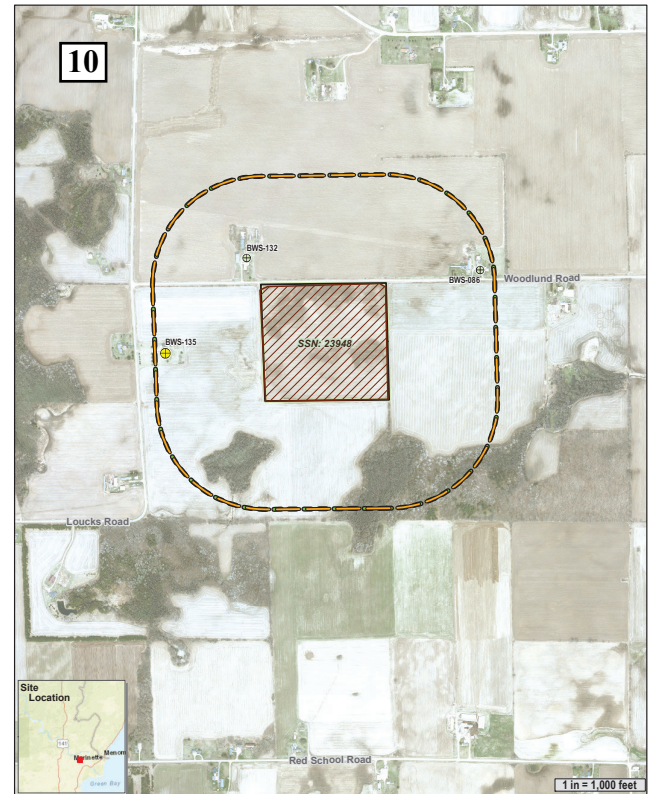


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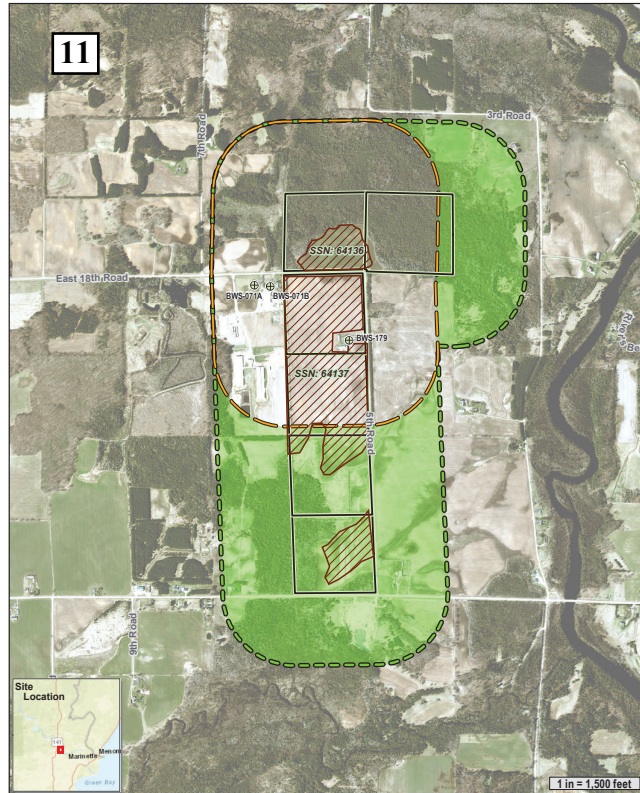


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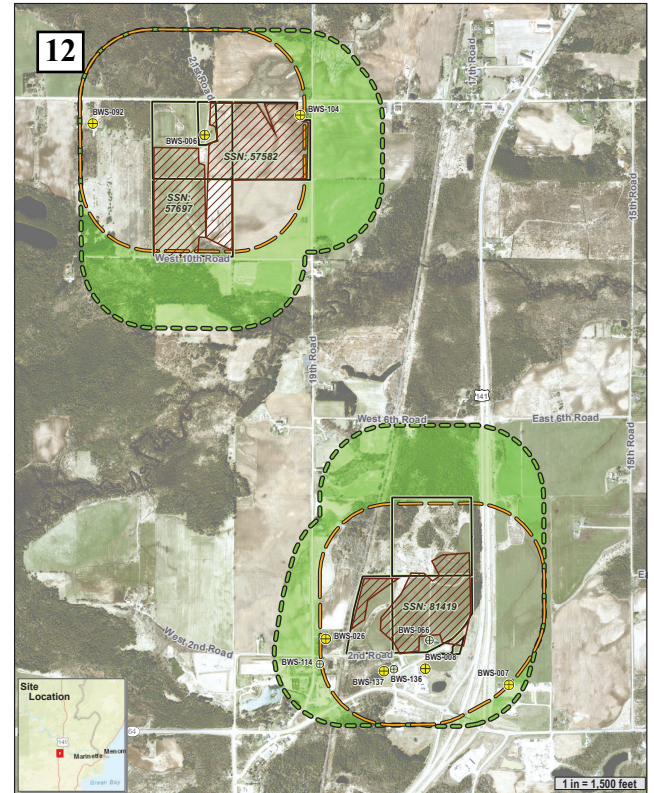


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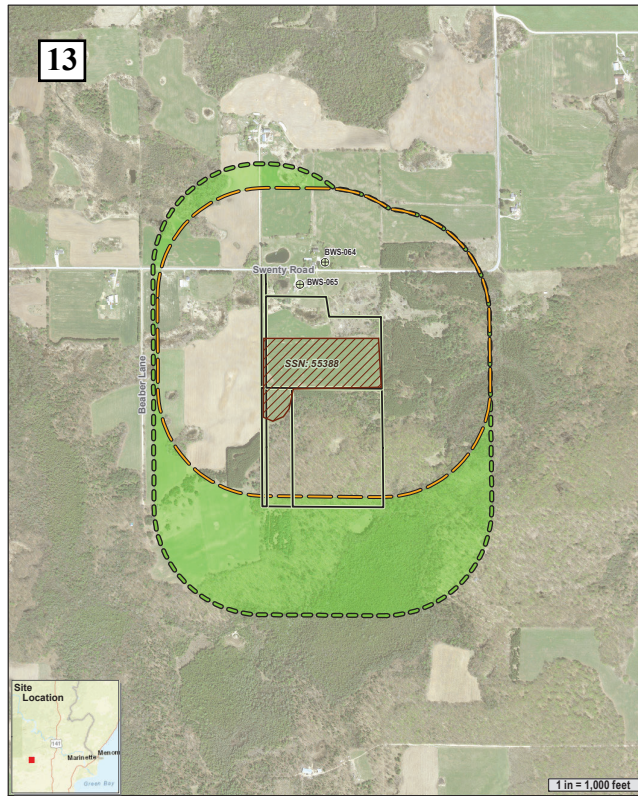










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 -  Buffer area to be added to JCI/Tyco's study
 -  Property boundary with field approved for landspreading city of Marinette biosolids

NOTE: LAG is DNR's Land Application Geo-database. LAG areas are based on desktop review, legal descriptions and landowner-provided information and are for reference purposes only. The mapped areas are not necessarily reflective of where biosolids were spread, but are those areas suitable for sewage sludge spreading pursuant to ch. NR 204 requirements that the city of Marinette was approved to use.

Summary of Records Requests

JCI/Tyco and its outside legal counsel (Foley & Lardner LLP) have requested records from the DNR related to the Site. A summary of these prior requests and the DNR's responses are as follows:

- July 2019¹: Foley & Lardner LLP submitted an request for records pertaining to testing data for sanitary sewer zones discharging to the city of Marinette WWTP; permits and documents pertaining to the city of Marinette's sludge management procedures and landspreading of biosolids and those same documents for other entities approved to landspread on same fields as the city of Marinette; and information on other sources of contamination on landspreading fields and responsible party letters associated with BRRTS 02-38-586856. The DNR provided over 650 responsive records; a partial response in October 2019 and the full release of records in December 2019.
- March 2021: Foley & Lardner LLP submitted an open records request for all PFAS documentation and data that the DNR has within a 10 mile radius of specified areas. The DNR does not retain data in this way, and provided Foley an opportunity to refine their request so that it is not unduly burdensome. Foley declined and the request was closed out.
- October 2021: JCI/Tyco submitted a request for records pertaining to land application of biosolids from the Marinette WWTF, and other landspreading from industrial and domestic sources from 2010 - present. The DNR prepared a spreadsheet for JCI/Tyco that summarized these records available from 2010 to 2020 for the townships where the city of Marinette landspread biosolids. The spreadsheet prepared for JCI/Tyco named regulated entities and included the year, discharge quantity, field location and acreage where their sludge/biosolids were land applied. The data and a cover memo explaining the data were released to JCI/Tyco in December 2021.
- January 14, 2022: In a call, JCI/Tyco requested all available records pertaining to land application of biosolids from the Marinette WWTF, and other landspreading from industrial and domestic sources from back to 1996² for Marinette and Oconto counties. The DNR prepared spreadsheets for JCI/Tyco that named the regulated entities and included the year, discharge quantity, field location and acreage where their industrial, municipal, or septage wastewaters were land applied. The field location reported from the database is a PLSS legal description and latitude and longitude representing the center of the quarter-quarter section of the permitted field. The data was released to JCI/Tyco on January 14, 2022.
- On January 23, 2022, JCI/Tyco submitted request for records, to which the DNR will respond to clarify records previously provided and will then provide responsive records.

In addition to these records, the DNR prepared maps for each of the 61 fields outlining the areas permitted to receive city of Marinette biosolids. These maps were provided to JCI/Tyco on September 14, 2021 (copies in **Attachment A**).

¹ In the Screening Assessment, JCI/Tyco refers to a February 2019 request for records. The DNR does not have a request for records associated with the Site from this date, but does have one dated July 18, 2019.

² Data provided to JCI/Tyco inadvertently did not capture the data reported from the year 1996. The reported data from 1996 will be provided to JCI/Tyco to correct this inadvertent omission.