

Permit Fact Sheet

General Information

Permit Number	WI-0021091-10-0
Permittee Name and Address	VILLAGE OF POYNETTE P O Box 95, Poynette, WI 53955
Permitted Facility Name and Address	Poynette Wastewater Treatment Facility 304 WEST THOMAS STREET, POYNETTE, WISCONSIN
Permit Term	October 01, 2026 to September 30, 2031
Discharge Location	304 West Thomas Street, Poynette, WI (NW ¼ of SE ¼ of Section 34, T11N, R9E)
Receiving Water	Rowan Creek in Lake Wisconsin Watershed of Lower Wisconsin River Basin in Columbia County
Stream Flow (Q _{7,10})	3 cfs
Stream Classification	Cold Water (Class I Trout Stream)
Discharge Type	Existing, Continuous
Annual Average Design Flow (MGD)	0.47 MGD
Industrial or Commercial Contributors	No significant industrial contributors.
Plant Classification	A1 - Suspended Growth Processes; B - Solids Separation; C - Biological Solids/Sludges; P - Total Phosphorus; D - Disinfection; L - Laboratory; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Village of Poynette operates a wastewater treatment facility providing advanced wastewater treatment and nutrient removal to a combination of domestic and commercial wastewater. The system provides wastewater treatment for a population of approximately 2,350. Poynette is served by a public water supply.

Treatment units include influent mechanical screening; biological phosphorus removal sector basins, chemical addition of alum for phosphorus removal; oxidation ditch activated sludge; two covered circular clarifiers operated in series; seasonal ultraviolet light effluent disinfection and effluent diffused air post aeration. Biosolids are stored in an aerated holding tank prior to application to department approved farm fields at acceptable agronomic rates.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on 9/25/25, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Jordan Main on 9/29/25.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	0.14 MGD (April 2021 – February 2026)	Influent: 24-Hr flow proportional sampler located in the influent channel after the bar screen. Flow meter located in the basement of the screening building.
001		Effluent: 24-Hr flow proportional composite sampler located prior to the UV disinfection channel. Grab samples taken post aeration after the UV channel prior to discharge to Rowan Creek. Flow meter located in the channel before UV disinfection.
004	55 US dry Ton (2026 permit application)	Aerobically digested, Liquid, Class B. Representative sludge samples shall be collected from the sample line connected to the sludge storage tank.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	

1.1.1 Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below. Shaded cells indicate changes.

Sampling frequency for BOD and TSS increased and set equal to the standard sampling frequency for effluent for facility of this size.

1.1.2 Explanation of Limits and Monitoring Requirements

of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit.

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
BOD5, Total	Weekly Avg	14 mg/L	3/Week	24-Hr Flow Prop Comp	May - October
BOD5, Total	Weekly Avg	23 mg/L	3/Week	24-Hr Flow Prop Comp	November - April
BOD5, Total	Monthly Avg	14 mg/L	3/Week	24-Hr Flow Prop Comp	May - October
BOD5, Total	Monthly Avg	23 mg/L	3/Week	24-Hr Flow Prop Comp	November - April
BOD5, Total	Weekly Avg	55 lbs/day	3/Week	Calculated	May - October
BOD5, Total	Weekly Avg	91 lbs/day	3/Week	Calculated	November - April
Suspended Solids, Total	Weekly Avg	14 mg/L	3/Week	24-Hr Flow Prop Comp	May - October
Suspended Solids, Total	Weekly Avg	23 mg/L	3/Week	24-Hr Flow Prop Comp	November - April
Suspended Solids, Total	Monthly Avg	14 mg/L	3/Week	24-Hr Flow Prop Comp	May - October
Suspended Solids, Total	Monthly Avg	23 mg/L	3/Week	24-Hr Flow Prop Comp	November - April
Suspended Solids, Total	Weekly Avg	55 lbs/day	3/Week	Calculated	May - October
Suspended Solids, Total	Weekly Avg	91 lbs/day	3/Week	Calculated	November - April
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	7.0 mg/L	5/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max	11 mg/L	3/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia	Weekly Avg	16 mg/L	3/Week	24-Hr Flow	May - September

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
(NH3-N) Total				Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	13 mg/L	3/Week	24-Hr Flow Prop Comp	October - April
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	7.2 mg/L	3/Week	24-Hr Flow Prop Comp	May - September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	5.6 mg/L	3/Week	24-Hr Flow Prop Comp	October - April
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Limit effective May - September.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit effective May - September. See the E. Coli Percent Limit section. Enter the result in the DMR on the last day of the month.
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring only in 2029.
Phosphorus, Total	Monthly Avg	1.0 mg/L	3/Week	24-Hr Flow Prop Comp	TBEL limit will be retained beyond the effective date of the final limits as it represents a minimum control level.
Phosphorus, Total	Monthly Avg	2.7 lbs/day	3/Week	Calculated	See TMDL section.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See TMDL section.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See TMDL section.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Annual in rotating quarters. See Nitrogen Series Monitoring section. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Temperature Maximum		deg F	Daily	Continuous	Monitoring only in 2029.

2.1.1 Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

- **Ammonia-** Updated daily max limit.
- **E. coli-** Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits.
- **Chloride-** Sampling year updated
- **Temperature-** Sampling year updated and only monitoring for one year. Sample frequency updated to reflect that the permittee has a continuous temperature meter.

2.1.2 Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated 4/3/2026.

Monitoring Frequencies- The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. The sampling frequencies for this facility were found to be appropriate as the permittee has completed extensive work in the recent past to improve the collection system and thereby reduce variability and I&I. The permittee has had some small permit effluent issues but no significant enforcement during the previous permit term.

Wisconsin River Total Maximum Daily Load (TMDL) - The permitted facility is included within the Wisconsin River Basin Total Maximum Daily Load (TMDL), which was approved by EPA April 26, 2019. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus that can be discharged and still protect water quality. The final effluent limits and monitoring expressed in the permit were derived from Site-Specific Criteria (SSC) for Lakes Petenwell, Castle Rock, and Wisconsin originally included in Appendix K of the TMDL report and approved by the U.S. Environmental Protection Agency on July 9, 2020. The permittee’s approved

SSC-based limits are consistent with the assumptions and requirements of the EPA-approved WLA in the TMDL, which is 524 lbs/yr for the permitted facility.

The approved TMDL expresses WLAs as lbs/year and lbs/day (maximum annual load divided by 365 days). As outlined in Section 4.6 of the department's *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Program*, mass limits must be given in the permit that are consistent with the TMDL WLA and the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at <https://prodoasint.dnr.wi.gov/swims/downloadDocument.do?id=167886175>). Continuously discharging facilities covered by the WRB TMDL are given monthly average mass limits. If the equivalent effluent concentration is less than or equal to 0.3 mg/L, six-month average mass limits (averaging period of May through October and November through April) are also included. The equivalent effluent concentration of 0.366 mg/L was calculated for the facility, thus, TMDL based mass limits are expressed as a monthly average of 2.7 lbs/day.

Facilities with WRB TMDL based effluent limits for phosphorus must report the 12-month rolling sum of total monthly discharge (lbs/yr). If reported 12-month rolling sums exceed the facility's max annual WLA, the facility's mass limits (monthly average and six-month average) may be recalculated using more appropriate CVs or monitoring frequencies when the permit is reissued to bring discharge levels into compliance with the facility's given WLA. The permittee currently achieves the TMDL WLA and therefore these limits are effective immediately.

3 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
004	B	Liquid	Fecal Coliform	Incorporation	Land Application	55 Dry Ton/Year
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No						
If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? N/A						
Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

3.1 Sample Point Number: 004- SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Once in 2027
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2027
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

3.1.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

PCB- Sampling year updated

PFAS –Monitoring is required annually pursuant to s. NR 204.06(2)(b)9, Wis. Adm. Code.

3.1.2 Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5), Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6), and in s. NR 204.07 (7), Wis. Adm. Code for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k), Wis. Adm. Code.

PFAS- The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS” should be followed

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department’s implementation of EPA’s recommendations. To quantitate this risk, PFAS sampling has been included in this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9, Wis. Adm. Code.

4 Schedules

4.1 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan Submittal: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in	10/01/2027

accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes.	
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4.1.1 Explanation of Schedule

An up-to-date Land Application Management Plan is required that documents how the permittee will manage the land application of biosolids consistent with ch. NR 204, Wis. Adm. Code

Other Comments

None

Attachments

Water Quality Based Effluent Limits dated 4/3/2026

Justification Of Any Waivers From Permit Application Requirements

None

Prepared By:

Jennifer Jerich, Wastewater Specialist

Date: 7/16/2026

Date amended post Fact Check: 7/23/2026

Date amended post Public Notice:

CORRESPONDENCE/MEMORANDUM**State of Wisconsin**

DATE: April 3, 2026

TO: Jennifer Jerich – SCR/Horicon

FROM: Sarah Luck – SCR/Fitchburg

SUBJECT: Water Quality-Based Effluent Limitations for the Poynette Wastewater Treatment Facility
WPDES Permit No. WI-0021091-10-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable) for the discharge from the Poynette Wastewater Treatment Facility in Columbia County. This municipal wastewater treatment facility (WWTF) discharges to Rowan Creek in the Lake Wisconsin Watershed (LW19) of the Lower Wisconsin River Basin. This discharge is included in the Wisconsin River Basin (WRB) Total Maximum Daily Load (TMDL) as approved by EPA on 04/26/2019 with site-specific criteria approved by EPA on 07/09/2020. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1
BOD ₅ May – October November – April			14 mg/L 55 lbs/day 23 mg/L 91 lbs/day	14 mg/L 23 mg/L	2
TSS May – October November – April			14 mg/L 55 lbs/day 23 mg/L 91 lbs/day	14 mg/L 23 mg/L	2
pH	9.0 s.u.	6.0 s.u.			2
Dissolved Oxygen		7.0 mg/L			2
Ammonia Nitrogen May – September October – April	11 mg/L 11 mg/L		16 mg/L 13 mg/L	7.2 mg/L 5.6 mg/L	2
<i>E. coli</i> May – September				126 #/100 mL geometric mean	3
Chloride					4
Phosphorus TBEL TMDL				1.0 mg/L 2.7 lbs/day	2,5
TKN, Nitrate+Nitrite, and Total Nitrogen					6
Temperature, Maximum					7

Footnotes:

1. Monitoring only.
2. No changes in the limits from the current permit.
3. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
4. Monitoring in the fourth year of the permit term at a frequency to ensure that a minimum of 11 samples are available at the next permit issuance.
5. The mass limit is based on the Total Maximum Daily Load (TMDL) for the Wisconsin River to address phosphorus within the TMDL area. The concentration limit is retained to prevent backsliding.
6. Annual total nitrogen monitoring is recommended for all minor municipal permittees per the Department's October 1, 2019 *Guidance for Total Nitrogen Monitoring in Wastewater Permits*. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO₃), nitrite (NO₂), and total Kjeldahl nitrogen (TKN) (all expressed as N).
7. Daily maximum temperature monitoring at least three times per week for at least one year is recommended.

No WET testing is required because information related to the discharge indicates low to no risk for toxicity.

The recommended limits meet the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, and additional limits are not required.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Sarah Luck (Sarah.Luck@wisconsin.gov) or Diane Figiel (Diane.Figiel@wisconsin.gov).

Attachments (4) – Narrative, Site Map, Ammonia Nitrogen Calculations, and Thermal Table

PREPARED BY:  Date: April 3, 2026
Sarah Luck
Water Resources Engineer

E-cc: Tanner Connors, Wastewater Engineer – SCR/Fitchburg
Lisa Creegan, Regional Wastewater Supervisor – SCR/Fitchburg
Diane Figiel, Water Resources Engineer – WY/3
Nate Willis, Wastewater Section Manager – WY/3

Water Quality-Based Effluent Limitations for Poynette Wastewater Treatment Facility

WPDES Permit No. WI-0021091-10-0

PART 1 – BACKGROUND INFORMATION

Facility Description

The Village of Poynette operates a wastewater treatment facility providing advanced wastewater treatment and nutrient removal to a combination of domestic and commercial wastewater. The current daily average annual design flow is 0.47 MGD. The system provides wastewater treatment for a population of approximately 2,350. Poynette is served by a public water supply.

Treatment units include influent mechanical screening, biological phosphorus removal sector basins, chemical addition of alum for phosphorus removal, oxidation ditch activated sludge; two covered circular clarifiers operated in series, seasonal ultraviolet light effluent disinfection, and effluent diffused air post aeration. Biosolids are stored in an aerated holding tank prior to application to department-approved farm fields at acceptable agronomic rates.

Attachment #2 is a map of the area showing the approximate location of Outfall 001.

Existing Permit Limitations

The current permit, expiring on March 31, 2026, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
BOD ₅ May – October November – April			14 mg/L 55 lbs/day 23 mg/L 91 lbs/day	14 mg/L 23 mg/L	1
TSS May – October November – April			14 mg/L 55 lbs/day 23 mg/L 91 lbs/day	14 mg/L 23 mg/L	1
pH	9.0 s.u.	6.0 s.u.			1
Dissolved Oxygen		7.0 mg/L			1
Ammonia Nitrogen May – September October – April	16 mg/L 16 mg/L		16 mg/L 13 mg/L	7.2 mg/L 5.6 mg/L	-
Bacteria Interim Limit Fecal Coliform				400 #/100 mL geometric mean	2

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Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Final Limit <i>E. coli</i>				126 #/100 mL geometric mean	
Chloride					3
Phosphorus TBEL TMDL				1.0 mg/L 2.7 lbs/day	-
TKN, Nitrate+Nitrite, and Total Nitrogen					3
Temperature September October			65°F 58°F		4

Footnotes:

1. These limitations are not being evaluated as part of this review since the water quality criteria, reference effluent flow rates, and receiving water characteristics have not changed.
2. A compliance schedule was included in the current permit to meet the final *E. coli* limits by April 30, 2025.
3. Monitoring only.
4. A compliance schedule was included in the current permit. Temperature limits became effective April 1, 2025.

Receiving Water Information

- Name: Rowan Creek
- Waterbody Identification Code (WBIC): 1263700
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Cold Water community, non-public water supply and recreational use. Rowan Creek is an Exceptional Resource Water upstream of the outfall per s. NR 102.10(1)(a), Wis. Adm. Code.
- Low Flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q₁₀ and 7-Q₂ values are from USGS for Station LW18 located at Highway 51 Poynette where Outfall 001 is located.
 $7-Q_{10} = 3.0$ cfs (cubic feet per second)
 $7-Q_2 = 4.3$ cfs
 Harmonic Mean Flow = 5.6 cfs using a drainage area of 10.4 mi²
 The Harmonic Mean has been estimated based on average flow and the 7-Q₁₀ using an equation from U.S. EPA's *Technical Support Document for Water Quality-Based Toxics Control* (March 1991, EPA/505/2-90-001, pgs. 88-89).
- Hardness = 308 mg/L as CaCO₃. This value represents the geometric mean of data from 2011-2013 WET testing (no recent data available).
- % of low flow used to calculate limits in accordance with s. NR 106.06 (4) (c) 5., Wis. Adm. Code: 50%. A mixing determination of 50% was approved by the Department on December 10, 2015.
- Source of background concentration data: Metals data from the Baraboo River at STH 23-33 in Reedsburg is used for this evaluation because there is no data available for Rowan Creek nor other cold water streams nearby. However, the Baraboo River is within the same ecological landscape so ambient water quality characteristics are expected to be similar. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and

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a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen are described later.

- Multiple dischargers: None.
- Impaired water status: Rowan Creek is not listed as impaired, but Lake Wisconsin, located approximately seven miles downstream of Outfall 001, is listed as impaired due to upstream pollution of mercury and PCBs (listed in 2010). In 2018 it also exceeded total phosphorus thresholds. Both Rowan Creek and Lake Wisconsin are part of the Wisconsin River TMDL.

Effluent Information

- Flow Rate:
Design annual average = 0.47 million gallons per day (MGD)
For reference, the actual average flow from April 2021 through February 2026 was 0.14 MGD.
- Hardness = 280 mg/L as CaCO₃. This value represents the geometric mean of four samples collected in February and March 2025 which were reported on the permit application.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Wastewater source: Domestic wastewater with no industrial contributors.
- Water supply: Village of Poynette
- Additives: Poynette Wastewater Treatment Facility has included one additive in the permit application that has the potential to be present in the effluent. This additive is listed below:
 - Alum – phosphorus removal
An additive review is not necessary for any additives where either the toxicity is well documented and understood, can be controlled by a WQBEL, or are not believed to be present in the discharge. This is the case upon initial review of the listed additive.
- Effluent characterization: This facility is categorized as a minor municipality, so the permit application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus ammonia, chloride, hardness and phosphorus.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2, in the column titled “MEAN EFFL. CONC.”. Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.

Copper Effluent Data

Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)
02/24/25	9.150	03/24/25	6.805	04/21/25	8.196
03/03/25	8.560	03/31/25	8.060	04/28/25	8.758
03/17/25	6.770	04/15/25	7.428	05/05/25	7.335
03/19/25	8.552	04/16/25	7.131		
1-day P ₉₉ = 10.0 µg/L					
4-day P ₉₉ = 8.90 µg/L					

Chloride Effluent Data

Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)
01/26/25	243	05/05/25	204	09/01/25	228
02/17/25	182	06/02/25	225	10/06/25	227
03/17/25	217	07/07/25	186	11/10/25	233

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Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)
04/07/25	218	08/04/25	224	12/01/25	270
1-day P ₉₉ = 282 mg/L					
4-day P ₉₉ = 250 mg/L					

The following table presents the average concentrations and loadings at Outfall 001 from April 2021 through February 2026 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement	Average Mass Discharged
BOD ₅	3 mg/L*	4.46 lbs/day*
TSS	4 mg/L*	4.42 lbs/day*
pH field	7.7 s.u.	
Dissolved Oxygen	9.10 mg/L	
Ammonia Nitrogen	0.695 mg/L*	
Fecal Coliform	1#/100 mL**	
<i>E. coli</i>	2#/100 mL**	
Phosphorus	0.25 mg/L	0.34 lbs/day

*Results below the limit of detection (LOD) were included as zeroes in calculation of average.

** The measurement for bacteria is calculated as a geometric mean. Values reported below the LOD are replaced with a value of 1 for the calculation of the geometric mean.

**PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS
FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN**

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P₉₉) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

Acute Limits based on 1-Q₁₀

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Adm. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q₁₀ receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(\text{WQC}) (Q_s + (1-f) Q_e) - (Q_s - f Q_e) (C_s)}{Q_e}$$

Where:

WQC = Acute toxicity criterion or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Qs = average minimum 1-day flow which occurs once in 10 years (1-day Q₁₀)
if the 1-day Q₁₀ flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q₁₀).

Qe = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

Cs = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q₁₀ method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for Poynette Wastewater Treatment Facility, and the limits are set based on two times the acute toxicity criteria.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness (mg/L), and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 2.4 cfs, (1-Q₁₀ (estimated as 80% of 7-Q₁₀)), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD.* mg/L	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P ₉₉	1-day MAX. CONC.
Arsenic		340	679.6	135.9	<0.231		
Cadmium	280	14.2	28.4	5.7	<0.268		
Chromium	280	4187	8373.9	1675	0.338		
Copper	280	41.0	81.9			10.01	9.15
Lead	280	289	577.8	115.6	<0.385		
Nickel	268	1080	2160.6	432	0.579		
Zinc	280	296	591.9	118.4	60		
Chloride (mg/L)		757	1514.0			282	270

* The indicated hardness may differ from the effluent hardness because the effluent hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the acute criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

** The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q₁₀ flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 1.5 cfs (¼ of the 7-Q₁₀), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD.* mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P ₉₉
Arsenic		148.0	2.0	449	89.8	<0.231	
Cadmium	175	3.82		11.70	2.3	<0.268	

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SUBSTANCE	REF. HARD.* mg/L	CTC	MEAN BACK- GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P ₉₉
Chromium	301	212.56	3.0	645	129.0	0.338	
Copper	308	27.10	3.9	75.0			8.90
Lead	308	83.04	4.0	246.1	49.2	<0.385	
Nickel	268	120.18	7.9	352	70.4	0.579	
Zinc	308	321.94	15.8	953	190.7	60	
Chloride (mg/L)		395	8.0	1193			250

* The indicated hardness may differ from the receiving water hardness because the receiving water hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the chronic criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

Monthly Average Limits based on Wildlife Criteria (WC)

The effluent characterization did not include any effluent sampling results for substances for which Wildlife Criteria exist.

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 2.8 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK- GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370		1797	359.3	<0.268
Chromium (+3)	3818000	3.0	18539411	3707882	0.338
Lead	140	4.0	664	132.9	<0.385
Nickel	43000	7.9	208769	41754	0.579

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 2.8 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK- GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3	2.0	56.9	11.37	<0.231

In addition to evaluating the need for limits for each individual substance for which HCC exist, s. NR 106.06(8), Wis. Adm. Code, requires the evaluation of the cumulative cancer risk. Because no effluent limits are needed based on HCC, determination of the cumulative cancer risk is not needed per s. NR 106.06(8), Wis. Adm. Code.

Conclusions and Recommendations

Based on a comparison of the effluent data and calculated effluent limitations, no effluent limitations are required. Monitoring recommendations are made in the paragraphs below.

Chloride – Considering available effluent data from the current permit term (collected in 2025), the 1-day P₉₉ chloride concentration is 282 mg/L, and the 4-day P₉₉ of effluent data is 250 mg/L. These effluent concentrations are below the calculated WQBELs for chloride; therefore, **no effluent limits are needed**.

Chloride monitoring is recommended to ensure that 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.85, Wis. Adm. Code.

Mercury – The permit application did not require monitoring for mercury because the Poynette Wastewater Treatment Facility is categorized as a minor facility as defined in s. NR 200.02(8), Wis. Adm. Code. In accordance with s. NR 106.145(3)(a)3, Wis. Adm. Code, a minor municipal discharger shall monitor, and report results of influent and effluent mercury monitoring once every three months if, “there are two or more exceedances in the last five years of the high-quality sludge mercury concentration of 17 mg/kg specified in s. NR 204.07(5), Wis. Adm. Code.” A review of the past five years of sludge characteristics data reveals that all the sample results are within expected analytical ranges and well below the 17 mg/kg level. The average concentration in the sludge from March 2021 through March 2025 (n=5) was 0.24 mg/kg, with a maximum reported concentration of 0.50 mg/kg. Therefore, **no mercury monitoring is recommended at Outfall 001.**

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code.

Available monitoring sample data from the Poynette Waterworks (PWS ID: 11100375) is provided in the table below:

Water Supply PFAS Data

Sample Date	Sample ID	Well #	PFOS (ng/L)	PFOA (ng/L)
8/22/2023	696220001	BN481	ND	ND
7/28/2023	689997001	YG586	ND	ND
5/16/2023	2305237-02	BN481	ND	ND
4/18/2023	673657001	YG586	ND	ND

The data above shows the municipal water supply is below one-fifth of the applicable PFOS and PFOA criteria.

Based on the type of discharge, the effluent flow rate, the lack of indirect dischargers contributing to the collection system, and known levels of PFOS/PFOA in the source water, **PFOS and PFOA monitoring is not recommended.** The Department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BOD, TSS, PH, AND DISSOLVED OXYGEN

BOD, TSS, and DO

The current biological oxygen demand (BOD), total suspended solids (TSS), and dissolved oxygen (DO) limits have been in effect since December 1, 1996. Since the water quality criteria, reference effluent flow rates, and receiving water characteristics have not changed, **no changes are recommended for BOD, TSS, and DO limits.**

pH

In accordance with s. NR 102.04(4)(c), Wis. Adm. Code, **pH shall be within the range of 6.0 s.u. to 9.0 s.u.** for fish and aquatic life.

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. The current permit has daily maximum, weekly average, and monthly average limits. These limits are re-evaluated at this time due to the following change:

- The maximum expected effluent pH has changed

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

Daily maximum limitations are based on acute toxicity criteria in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The acute toxicity criterion (ATC) for ammonia is calculated using the following equation.

$$\text{ATC in mg/L} = [A \div (1 + 10^{(7.204 - \text{pH})})] + [B \div (1 + 10^{(\text{pH} - 7.204)})]$$

Where:

A = 0.275 and B = 39.0 for a Cold-Water Category 1 fishery, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 767 sample results were reported from April 2021 through February 2026. The maximum reported value was 8.0 s.u. (Standard pH Units). The effluent pH was 8.0 s.u. or less 99% of the time. The 1-day P₉₉, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 8.1 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 8.1 s.u. Therefore, a value of 8.0 s.u. is believed to represent the maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 8.0 s.u. into the equation above yields an ATC = 5.62 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method

In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using the the 1-Q₁₀ receiving water low flow if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q₁₀ (estimated as 80 % of 7-Q₁₀) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit (mg/L)
2×ATC	11
1-Q ₁₀	24

The 2×ATC method yields the most stringent limits for Poynette Wastewater Treatment Facility.

Attachment #1

Presented below is a table of daily maximum limitations corresponding to various effluent pH values. Use of this table is not necessarily recommended in the permit, but it is presented herein for informational purposes.

Daily Maximum Ammonia Nitrogen Limits – Cold water

Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)
$6.0 \leq \text{pH} \leq 6.1$	72	$7.0 < \text{pH} \leq 7.1$	44	$8.0 < \text{pH} \leq 8.1$	9.3
$6.1 < \text{pH} \leq 6.2$	71	$7.1 < \text{pH} \leq 7.2$	39	$8.1 < \text{pH} \leq 8.2$	7.6
$6.2 < \text{pH} \leq 6.3$	69	$7.2 < \text{pH} \leq 7.3$	35	$8.2 < \text{pH} \leq 8.3$	6.3
$6.3 < \text{pH} \leq 6.4$	67	$7.3 < \text{pH} \leq 7.4$	31	$8.3 < \text{pH} \leq 8.4$	5.2
$6.4 < \text{pH} \leq 6.5$	65	$7.4 < \text{pH} \leq 7.5$	27	$8.4 < \text{pH} \leq 8.5$	4.3
$6.5 < \text{pH} \leq 6.6$	63	$7.5 < \text{pH} \leq 7.6$	23	$8.5 < \text{pH} \leq 8.6$	3.5
$6.6 < \text{pH} \leq 6.7$	60	$7.6 < \text{pH} \leq 7.7$	19	$8.6 < \text{pH} \leq 8.7$	3.0
$6.7 < \text{pH} \leq 6.8$	56	$7.7 < \text{pH} \leq 7.8$	16	$8.7 < \text{pH} \leq 8.8$	2.5
$6.8 < \text{pH} \leq 6.9$	52	$7.8 < \text{pH} \leq 7.9$	14	$8.8 < \text{pH} \leq 8.9$	2.1
$6.9 < \text{pH} \leq 7.0$	48	$7.9 < \text{pH} \leq 8.0$	11	$8.9 < \text{pH} \leq 9.0$	1.8

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)

The weekly and monthly average ammonia nitrogen limits calculation from the previous memo do **not change** because there have been no changes in the effluent and receiving water flow rates. The calculations from the previous WQBEL memo are shown in Attachment #3.

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from April 2021 through February 2026.

Ammonia Nitrogen Effluent Data

Ammonia Nitrogen (mg/L)	May – September	October – April
1-day P ₉₉	3.043	10.971
4-day P ₉₉	1.481	5.745
30-day P ₉₉	0.606	2.504
Mean*	0.175	1.084
Std	1.31	3.22
Sample size	219 (188 ND)	293 (177 ND)
Range	<0.127 - 5.021	<0.13 - 13

*“<” means that the pollutant was not detected at the indicated level of detection. The mean concentration was calculated using zero in place of the non-detected (ND) result.

Reasonable Potential

The need to include ammonia limits in the Poynette Wastewater Treatment Facility permit is determined by calculating 99th upper percentile (or P₉₉) values for ammonia and comparing those to the calculated limits. Based on this comparison, there is no reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits. However, since the permit currently has weekly and monthly average

limits year-round, **the limits must be retained regardless of reasonable potential**, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:

- (b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

Conclusions and Recommendations

In summary, after rounding to two significant figures, the following ammonia nitrogen limitations are recommended. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code.

Final Ammonia Nitrogen Limits

	Daily Maximum (mg/L)	Weekly Average (mg/L)	Monthly Average (mg/L)
May – September	11	16	7.2
October – April	11	13	5.6

PART 5 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

On May 1, 2020, revisions to chs. NR 102 and NR 210, Wis. Adm. Codes, became effective which replace fecal coliform limits with new *Escherichia coli* (*E. coli*) limits for protection of recreational uses. Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities which are required to disinfect:

1. The geometric mean of *E. coli* bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.
2. No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 counts/100 mL.

These limits are required during May through September and became effective April 30, 2025. **No changes are recommended.**

PART 6 – PHOSPHORUS

Technology-Based Effluent Limit

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of total phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

Since Poynette Wastewater Treatment Facility has a phosphorus limit of 1.0 mg/L as a monthly average in effect, the need for a TBEL will not be considered further.

In addition, the need for a WQBEL for phosphorus must be considered.

TMDL Limits

Total phosphorus effluent limits in pounds per day (lbs/day) are calculated as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* (April 2020) and are based on the annual phosphorus wasteload allocation (WLA) given in pounds per

year (lbs/yr). This WLA is found on page 24 of Appendix K in the *Wisconsin River TMDL Report* (April 2019) and is expressed as a maximum annual load (lbs/yr). For Poynette Wastewater Treatment Facility, this WLA is 524 lbs/yr and 1.43 lbs/day.

The monthly average limit of 2.7 lbs/day was determined in the previous limit evaluation (December 2020). The monthly average multiplier of 1.91 was chosen as described in the Department TMDL Implementation guidance using a coefficient of variation (CV) of 0.86 and a twice weekly effluent monitoring frequency. The TMDL-based phosphorus WQBEL(s) will be re-evaluated if the annual phosphorus WLA is not being met as described in the prior stated guidance. This is done by comparing each rolling sum of 12 consecutive months of total monthly mass phosphorus discharges over the current permit term (looking at data since April 2022 which marks a year since it was required to be reported) directly against the annual WLA.

Total Phosphorus 12-month Rolling Average

	Mass (lbs/year)
Maximum	200.64
Mean	115.79
Std	43.27
Sample size	47
Range	55.86 - 200.64

Poynette Wastewater Treatment Facility has been 100% compliant in meeting the annual WLA of 524 lbs/yr with none of the 47 rolling sums exceeding the annual WLA during April 2022 through February 2026. **Therefore, the monthly average limit of 2.7 lbs/day is recommended to continue in the reissued permit.**

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from April 2021 through February 2026.

Total Phosphorus Effluent Data

	Concentration (mg/L)	Mass (lbs/day)
1-day P ₉₉	0.75	1.67
4-day P ₉₉	0.47	0.91
30-day P ₉₉	0.32	0.50
Mean	0.25	0.33
Std	0.14	0.34
Sample size	508	508
Range	0.03 - 1.33	0.03 - 3.56

Conclusions

In summary, the following limits are recommended:

- **Monthly average total phosphorus mass limit of 2.7 lbs/day** based on based on site-specific criteria.

- **Monthly average concentration limit of 1.0 mg/L.**

PART 7 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s. NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from April 2021 through February 2026.

The table below summarizes the maximum temperatures reported during monitoring from April 2021 through February 2026.

Monthly Temperature Effluent Data & Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(°F)
JAN	49	50	114	120
FEB	52	54	NA	120
MAR	60	61	104	120
APR	54	57	78	112
MAY	62	63	86	119
JUN	69	69	77	87
JUL	70	72	72	87
AUG	71	72	72	104
SEP	72	73	72	120
OCT	69	69	74	120
NOV	62	63	75	120
DEC	53	54	96	120

* NA denotes “not applicable” when the calculated weekly average limit is greater than or equal to 120°F.

Reasonable Potential

Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

Attachment #1

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
 - (a) The highest recorded representative daily maximum effluent temperature
 - (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub-lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:
 - (a) The highest weekly average effluent temperature for the month.
 - (b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

Based on the available effluent data, **no effluent limits are recommended for temperature.** The complete thermal table used for the limit calculation can be found in Attachment #4. **Temperature monitoring is recommended for at least one year during the permit term.**

Dissipative Cooling

In response to weekly average limits triggered in September and October, a dissipative cooling (DC) study was conducted on the afternoon of October 13, 2022. Temperature and conductivity measurements were measured approximately every 5 ft for the first 40 ft below the outfall (in the forebay). Additional measurements were taken 20 ft upstream from the connection point in Rowan Creek and roughly every 5 ft downstream of the connection point until approximately 25 ft downstream of the connection point. The effluent temperature was 60°F at the outfall. The temperature 20 ft upstream of the connection point was 49.6°F. Rowan Creek returned to this temperature within 25 ft downstream of the connection point. The forebay, which is approximately 180 ft long, may also afford additional cooling before the confluence with Rowan Creek.

Antidegradation and Antibacksliding

The dissipative cooling (DC) study was approved after the temperature limits became effective. Since the discharge would not be considered an increased discharge since effluent temperature would not increase due to the approval of the DC study, an antidegradation review is not needed.

Additionally, antibacksliding provisions would need to be met for the temperature limits to be removed from the permit. Section NR 205.067(5), Wis. Adm. Code, addresses limit continuation in permits. Since the facility has not added treatment for temperature, the limits may be removed since there is no longer reasonable potential shown. Furthermore, backsliding may be permissible in this case under the backsliding prohibitions per s. NR 207.12(3)(b), Wis. Adm. Code, due to new information (the DC study, reduced effluent flow rates, and additional effluent temperature data) which has become available since the limits became effective.

Future WPDES Permit Reissuance

If reasonable potential for thermal limits is shown in the future, it should be noted that consideration of dissipative cooling (DC) requests must be reevaluated every permit reissuance. The permittee is responsible for submitting Form 3400-198 which serves to satisfy the requirements in s. NR 106.59(4), Wis. Adm. Code, as well as an updated DC request prior to permit reissuance. Such a request must either include:

- a) A statement by the permittee that there have been no substantial changes in operation of, or thermal loadings to, the treatment facility and the receiving water; or
- b) New information demonstrating DC to supplement the information used in the previous DC determination. If significant changes in operation or thermal loads have occurred, additional DC data must be submitted to the Department.

PART 8 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the WET Program Guidance Document (October 29, 2019).

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC₅₀ (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09 (2) (b), Wis. Adm Code.
- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC₂₅ (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09 (3) (b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The **IWC of 33%**, shown in the WET Checklist summary below, was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

$$\text{IWC (as \%)} = Q_e \div \{(1 - f) Q_e + Q_s\} \times 100$$

Where:

Q_e = annual average flow = 0.47 MGD = 0.73 cfs

f = fraction of the Q_e withdrawn from the receiving water = 0

Q_s = 50% of the 7-Q₁₀ = 3 cfs ÷ 2 = 1.5 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.
- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the receiving water location, upstream and out of the influence of the mixing zone and any other known discharge. The specific receiving water location must be specified in the WPDES permit.
- Shown below is a tabulation of all available WET data for Outfall 001. Efforts are made to ensure that

Attachment #1

decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08 (3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations.

Tests conducted prior to 2005 are not presented in the table below due to significant changes that were made to WET test methods in 2004. These changes were assumed to be fully implemented by certified labs by no later than June 2005. Data collected before July 1, 2005 does not show repeated toxicity that was never resolved and is not the only data that is available.

WET Data History

Date Test Initiated	Acute Results LC ₅₀ % (% survival in 100% effluent)				Chronic Results IC ₂₅ %				Footnotes or Comments
	<i>C. dubia</i>	Fathead minnow	Pass or Fail?	Used in RP?	<i>C. dubia</i>	Fathead Minnow	Pass or Fail?	Use in RP?	
01/19/2006	-	-	-	-	>100	100	Pass	Yes	
11/06/2007	>100	>100	Pass	Yes	>100	100	Pass	Yes	
09/18/2008	-	-	-	-	>100	>100	Pass	No	1
02/08/2011	>100	>100	Pass	No	>100	>100	Pass	No	1
04/24/2012	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
07/30/2013	-	-	-	-	>100	>100	Pass	Yes	

Footnote:

1. *Tests done by S-F Analytical, July 2008 – March 2011.* The DNR has reason to believe that WET tests completed by SF Analytical Labs from July 2008 through March 31, 2011 were not performed using proper test methods. Therefore, WET data from this lab during this period has been disqualified and was not included in the analysis.
- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. **WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.**

According to s. NR 106.08(6)(d), Wis. Adm. Code, TUa and TUC effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC₅₀, IC₂₅ or IC₅₀ ≥ 100%).

Acute Reasonable Potential = 0 < 1.0, reasonable potential is not shown, and a limit is not required.

Chronic Reasonable Potential = 0 < 1.0, reasonable potential is not shown, and a limit is not required.

The WET Checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The Checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The Checklist steps the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the Checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET Checklist analysis completed for this permittee is shown in the table

Attachment #1

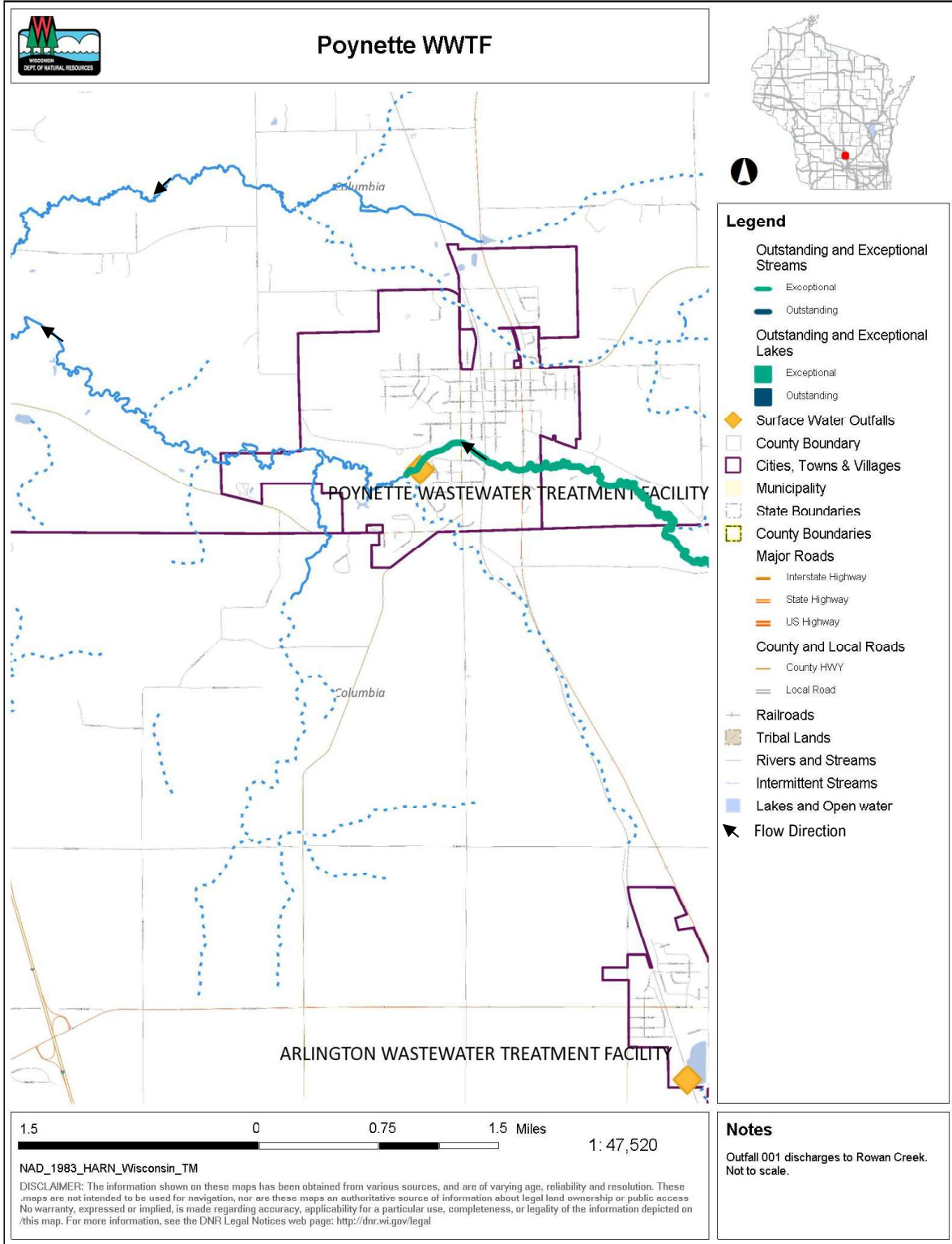
below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET Checklist, see Chapter 1.3 of the WET Guidance Document: <https://dnr.wisconsin.gov/topic/Wastewater/WET.html>.

WET Checklist Summary

	Acute	Chronic
AMZ/IWC	Not Applicable. 0 Points	IWC = 33% 0 Points
Historical Data	2 tests used to calculate RP. No tests failed. No data available from the past 5 years. 5 Points	4 tests used to calculate RP. No tests failed. No data available from the past 5 years. 5 Points
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. 0 Points	Same as Acute. 0 Points
Receiving Water Classification	Cold water community. 5 Points	Same as Acute. 5 Points
Chemical-Specific Data	No reasonable potential for limits based on ATC. Ammonia nitrogen limit carried over from the current permit; chloride, chromium, copper, nickel, and zinc detected. Additional Compounds of Concern: None. 3 Points	No reasonable potential limits based on CTC. Ammonia nitrogen limit carried over from the current permit; chloride, chromium, copper, nickel, and zinc detected. Additional Compounds of Concern: None. 3 Points
Additives	0 Biocides and 1 Water Quality Conditioner (alum) added. Permittee has proper P chemical SOPs in place. 1 Point	All additives used more than once per 4 days. 1 Point
Discharge Category	No Industrial Contributors. 0 Points	Same as Acute. 0 Points
Wastewater Treatment	Secondary or better. 0 Points	Same as Acute. 0 Points
Downstream Impacts	No impacts known. 0 Points	Same as Acute. 0 Points
Total Checklist Points:	14 Points	14 Points
Recommended Monitoring Frequency (from Checklist):	None.	None.
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

- **No WET testing is required** because information related to the discharge indicates the potential for effluent toxicity is believed to be low.

Attachment #2
Site Map



Ammonia Nitrogen Calculations from the WQBEL Memo Dated July 23, 2009

AMMONIA (as N) LIMITS		
CLASSIFICATION:	COLD WATER	
EFFLUENT FLOW (mgd):	0.47	
EFFLUENT FLOW (cfs):	0.727	
MAX. EFFLUENT pH (s.u.):	7.68	
BACKGROUND INFORMATION:	<i>summer</i>	<i>winter</i>
7Q10 (cfs)	3	3
7Q2 (cfs)	4.3	4.3
Ammonia (mg/L)	0.06	0.12
Temperature (deg C)	20	3
pH (std. units)	8.21	7.97
% of river flow used:	100	25
Reference weekly flow:	3	0.75
Reference monthly flow:	3.655	0.91375
CRITERIA (in mg/L):		
4-day Chronic (@ backgrd. pH):		
early life stages present	3.10	6.35
30-day Chronic (@ backgrd. pH)		
early life stages present	1.24	2.54
EFFLUENT LIMITS (in mg/L):		
Weekly average		
early life stages present	15.63	12.78
Monthly average		
early life stages present	7.17	5.58

Note: Early life stages present limits apply throughout the year for Cold water community streams.

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

Facility:	Poynette WWTF		7-Q₁₀:	3.0 cfs	Temp Dates	Flow Dates
Outfall(s):	001		Dilution:	50%	Start:	04/01/21
Date Prepared:	3/6/2026		f:	0	End:	02/28/26
Design Flow (Q_e):	0.47 MGD		Stream type:	Cold water community		
Storm Sewer Dist.	0 ft		Qs:Q_e ratio:	2.1 :1		
			Calculation Needed?:	YES		

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)			f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Ta (default) (°F)	Sub-Lethal WQC (°F)	Acute WQC (°F)		7-day Rolling Average (Qesl) (MGD)	Daily Maximum Flow Rate (Qea) (MGD)			Weekly Average (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	35	47	68	3.0	0.174	0.184		0	49	50	114	120
FEB	36	47	68	3.0	0.136	0.157		0	52	54	NA	120
MAR	39	51	69	3.0	0.218	0.265		0	60	61	104	120
APR	47	57	70	3.0	0.454	0.530		0	54	57	78	112
MAY	56	63	72	3.0	0.300	0.328		0	62	63	86	119
JUN	62	67	72	3.0	0.499	0.649		0	69	69	77	87
JUL	64	67	73	3.0	0.578	0.621		0	70	72	72	87
AUG	63	65	73	3.0	0.296	0.309		0	71	72	72	104
SEP	57	60	72	3.0	0.235	0.253		0	72	73	72	120
OCT	49	53	70	3.0	0.187	0.234		0	69	69	74	120
NOV	41	48	69	3.0	0.255	0.279		0	62	63	75	120
DEC	37	47	69	3.0	0.200	0.223		0	53	54	96	120