Wazee Public Noticed Permit Fact Sheet

General Information

Permit Number	WI-0036889-07-0
Permittee	Wazee Area Wastewater Commission, P O Box 118, Black River Falls, WI 54615
Facility Address	Wazee Area Wastewater Commission, W9450 Wa Ka Ja Huk Rd., Black River, WI 54615
Permit Term	November 01, 2025 to September 30, 2030
Discharge Location	East Bank of the Black River, SE ¼ of the SE ¼, T22N R3W, Section 31, Jackson County, Wisconsin, approximately 4 miles upstream of the dam at Black River Fall
Receiving Water	The Black River in the Morrison Creek Watershed of the Black River Basin, Jackson County, WI
Stream Flow ($Q_{7,10}$)	54 cfs
Stream Classification	Warm Water Sport Fish, Non-public Water Supply
Discharge Type	Existing, Continuous
Annual Average Design Flow	0.461 MGD
Industrial/ Commercial Contributors	None
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 Wazee Area Wastewater Treatment Facility treats domestic waste from the Ho-Chunk Nation as well as the Jackson Correctional Institution. The annual average design flow is 0.461 million gallons per day (MGD) and the annual average effluent flow in 2024 0.140 MGD. The plant consists of a two 2-channel oxidation ditches followed by two circular clarifiers. Phosphorus is removed biologically, but still undergoes daily polishing with alum. Seasonal disinfection is provided via ultraviolet radiation prior to discharge to the Black River. Sludge is aerobically digested, transferred to onsite sludge storage tanks, and land applied on Department approved sites. No major operational changes occurred during the last permit term.

See specific sections of the fact sheet for details on monitoring and/or limit changes this permit term.

Substantial Compliance Determination

Enforcement During Last Permit: Wazee WWTF has not received any enforcement in the last permit term. The facility had a couple of late monthly discharge monitoring reports in the last permit term but have not continued in recent years.

After a desk top review of all Discharge monitoring reports, land application reports, and compliance schedule items, and an inspection on 03/12/2025, Wazee WWTF has been found to be in substantial compliance with their current permit.

Compliance determination made by Jenna Monahan on 07/21/2025.

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	Influent from JCI: 0.098 MGD (2024)	Representative influent samples from Jackson Correctional Institution (JCI) shall be collected from the JCI lift station prior to the mixing of the waste streams in order to monitor JCI's contribution.
702	Influent (mixed sources): 0.144 MGD (2024)	Representative samples of the mixed influent shall be collected after the bar screen and the selector basin.
001	Effluent to Black River: 0.140 MGD (2024)	Representative effluent samples for the monitoring of all parameters except for E. coli shall be collected at the discharge of the Parshall flume; E. coli samples shall be collected after disinfection.
002	Land application • 2024: 45 dry tons • 2023: no land application • 2022: 36 dry tons • 2021: 48 dry tons	Representative liquid sludge samples shall be collected from the sludge storage tank mixing pipe and monitored annually for Lists 1, 2, 3 & 4 and PFAS and once in 2026 for PCBs.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT FROM JCI

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total		mg/L	Weekly	Grab	
Suspended Solids,		mg/L	Weekly	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Total					

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: the monitoring frequency for BOD and TSS was increased from 2/month to weekly.

Explanation of Limits and Monitoring Requirements

Monitoring 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.

1.2 Sample Point Number: 702- MIXED INFLUENT POST-BAR SCREEN

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	

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: the flow monitoring frequency changed from continuous to daily for DMR reporting purposes.

Explanation of Limits and Monitoring Requirements

Monitoring 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- PARSHALL FLUME & POST-DISINFECTION

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Monthly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
pH Field	Daily Min	6.0 su	Daily	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Limit & monitoring apply May-Sept
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit & monitoring apply May-Sept. See the E. coli Percent Limit section in the permit. Enter the result in the DMR on the last day of the month.
Copper, Total Recoverable		ug/L	Quarterly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable	Daily Max	146 ug/L	Monthly	24-Hr Flow Prop Comp	Monitoring required at permit effective date. Limit applies 01/01/2029 per the associated schedule.
Zinc, Total Recoverable	Weekly Avg	146 ug/L	Monthly	24-Hr Flow Prop Comp	Monitoring required at permit effective date. Limit applies 01/01/2029 per the associated schedule.
Zinc, Total Recoverable	Monthly Avg	146 ug/L	Monthly	24-Hr Flow Prop Comp	Monitoring required at permit effective date. Limit applies 01/01/2029 per the associated schedule.
Zinc, Total Recoverable	Daily Max	0.87 lbs/day	Monthly	Calculated	Monitoring required at permit effective date. Limit applies 01/01/2029 per the associated schedule.
Hardness, Total as		mg/L	Quarterly	24-Hr Flow	Hardness sample shall be

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
CaCO3				Prop Comp	collected at the same time as a sample for copper & zinc.
PFOS		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
PFOA		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
Phosphorus, Total	Monthly Avg	0.6 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim MDV limit effective throughout the permit term. See the MDV/Phosphorus subsections and phosphorus schedules in the permit.
Phosphorus, Total		lbs/month	Monthly	Calculated	Report the total monthly phosphorus discharged in lbs/month on the last day of the month on the DMR. See Standard Requirements for 'Appropriate Formulas' in the permit to calculate the Total Monthly Discharge in lbs/month.
Phosphorus, Total		lbs/yr	Annual	Calculated	Report the sum of the total monthly discharges (for the months that the MDV is in effect) for the calendar year on the Annual report form.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Monitoring required annually in specific quarters. See Nitrogen Series Monitoring section in permit for specific monitoring quarters.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Monitoring required annually in specific quarters. See Nitrogen Series Monitoring section in permit for specific

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					monitoring quarters.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Monitoring required annually in specific quarters. See Nitrogen Series Monitoring section in permit Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET testing section in permit for specific monitoring quarters. Samples shall be collected at the same time as a quarterly copper & monthly zinc sample.

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:1) the sample frequency for flow has changed from "continuous" to "daily" and the sample type has changed from "continuous" to "total daily" for eDMR reporting purposes, 2) monitoring for PFOS and PFOA added every other month in accordance with s. NR 106.98(2)(c), Wis. Adm. Code along with an associated compliance schedule, 3) zinc limits added, along with an associated compliance schedule, 4) addition of hardness monitoring, and 5) addition of two acute WET tests.

2.1.2 Explanation of Limits and Monitoring Requirements

Limits were determined for Wazee's existing discharge to the Black River using chs. NR 102, 104, 105, 106, 207, 210, 212 and 217 of the Wisconsin Administrative Code (where applicable). For additional information on any of the limits see the August 18, 2025 memo from Ben Hartenbower to Holly Heldstab titled "Water Quality-Based Effluent Limitations for the Wazee Area Wastewater Commission WPDES Permit No. WI-0036889".

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. After consideration, it was determined that no effluent monitoring frequency changes were necessary.

MUNICIPAL EFFLUENT LIMITS – In accordance with the federal regulation 40 CFR 122.45(d), and to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, limits in this permit are to be expressed a weekly average and monthly average limits whenever practicable.

PFOS and PFOA – NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. At the first reissuance of a WPDES permit after August 1, 2022, the new rule requires WPDES

permits for municipal dischargers with an average flow rate less than 1 MGD, to be evaluated on a case-by-case basis to determine if monitoring is required pursuant to s. NR 106.98(2)(c), Wis. Adm. Code. The department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, it was identified that previous PFOS/PFOA sample results were within 1/5 of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code. Therefore, monitoring once every two months is included. A sample frequency of 1/2 months means one sample is taken during any two-month period. Examples of 1/2 month sample would be every other month (Jan, March, May, etc.) or back-to-back months with a break in between (February & March, May & June, Aug & Sept, etc.). DMR Short Forms will be generated for the following time periods: January-February, March-April, May-June, July-August, September-October, and November-December. At a minimum one sample result will be present on each form.

The initial determination of the need for sampling shall be conducted for up to two years in order to determine if the permitted discharge has the reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code.

Phosphorus: Water quality based effluent limits of 0.300 mg/L (monthly average) and 0.100 lbs/day & 0.38 lbs/day (6-month averages) were set to become effective unless a variance was granted. The permittee applied for, and was granted, a multi-discharge variance (MDV) for phosphorus during the previous permit term and has re-applied for the MDV as provided for in s. 283.16, Wis. Stats., and approved by USEPA on February 6, 2017 for a 10-year duration. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden. Wazee's MDV application was conditionally approved by the DNR on August 7, 2025.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the permit term, comply with interim limits and make annual payments to participating county(s) by March 1 of each year based on the pounds of phosphorus discharged during the previous year in excess of the specified target value. A reopener clause is included in the permit to address the current MDV's expiration date, as a permit action may be required to update or remove variance provisions if the MDV is altered or unavailable after February 6, 2027.

The "price per pound" value is $50.00 adjusted for CPI annually during the first quarter as defined by s. 283.16(8)(a)2, Wis. Stats and takes effect for reissued permits with effective dates starting April 1. This may differ from the "price per pound" that is public noticed; however, the "price per pound" is set upon reissuance and is applicable for the entire permit term. The participating county(s) uses these payments to implement non-point source phosphorus control strategies at the watershed level.

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)**
002	B	Liquid	Fecal coliform	Injection	Land application	• 2024: 45 dry tons • 2023: no land application • 2022: 36 dry tons 2021: 48 dry tons
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						
Is a priority pollutant scan required? No 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: 002- SLUDGE

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

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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 (NH4-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 2026
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2026
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 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: annual PFAS monitoring has been added 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). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k).

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 Zinc Compliance Schedule

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent discharges of zinc with conclusions regarding compliance.	06/30/2026
Action Plan: Submit an action plan for complying with the effluent zinc limitations. If construction is required, include plans and specifications with the submittal.	03/31/2027
Initiate Actions: Initiate actions identified in the plan.	03/31/2028
Complete Actions: Complete actions necessary to achieve compliance with the effluent zinc limitations. Limitations become effective 01/01/2029.	12/31/2028

Explanation of Schedule: The compliance schedule for zinc provides a schedule for conducting the actions necessary to comply with the new limits. The compliance schedule lays out a timeline for the permittee to investigate and implement a plan to comply with the limits by the end of the schedule.

4.2 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	10/31/2026
Report on Effluent Discharge and Evaluation of Need: Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results. The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan. If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department approval no later than 90 days after written notification was sent from the Department. The	10/31/2027

Department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued. If, however, the Department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.	

4.3 Phosphorus Payment per Pound to County

The permittee is required to make annual payments for phosphorus reductions to the participating county or counties in accordance with s. 283.16(8), Wis. Stats, and the following schedule. The price per pound will be set at the time of permit reissuance and will apply for the duration of the permit.

Required Action	Due Date
Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: [(lbs of phosphorus discharged minus the permittee's target value) times ($66.62 per pound)] or $640,000, whichever is less. See the payment calculation steps in the Surface Water section. The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date. Note: The applicable Target Value is 0.2 mg/L as defined by s. 283.16(1)(h), Wis. Stats. The "per pound" value is $50.00 adjusted for CPI.	03/31/2026
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/31/2027
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/31/2028
Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/31/2029
Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/31/2030
Continued Coverage: If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharger Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats.	
Annual Verification of Payment After Permit Expiration: In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit Form 3200-151 to the Department indicating total amount remitted to the participating counties by March 1 each year.	

Explanation of County Payment Schedule: Subsection 283.16(6)(b), Wis. Stats., requires permittees that have received approval for the multi-discharger variance (MDV) to implement a watershed project that is designed to reduce non-point sources of phosphorus within the HUC 8 watershed in which the permittee is located. The permittee has selected the "Payment to Counties" watershed option described in s. 283.16(8), Wis. Stats. Under this option the permittee shall make annual payment(s) to participating county(s) that are calculated based on the amount of phosphorus actually discharged during a calendar year in pounds per year less the amount of phosphorus that would have been discharged had the

permittee discharged phosphorus at a target value concentration of 0.2 mg/L. The pounds of phosphorus discharged in excess of the target value is multiplied by a per pound phosphorus charge that will equal $66.62 per pound. This schedule requires the permittee to submit Form 3200-151 to the Department indicating the total amount remitted to the participating county(s).

4.4 Phosphorus Schedule - Continued Optimization

The permittee is required to optimize performance to control phosphorus discharges per the following schedule.

Required Action	Due Date
Optimization: The permittee shall continue to implement the optimization plan as previously approved to optimize performance to control phosphorus discharges. Submit a progress report on optimizing removal of phosphorus by the Due Date.	09/30/2026
Progress Report #2: Submit a progress report on optimizing removal of phosphorus.	09/30/2027
Progress Report #3: Submit a progress report on optimizing removal of phosphorus.	09/30/2028
Progress Report #4: Submit a progress report on optimizing removal of phosphorus.	09/30/2029
Progress Report #5: Submit a progress report on optimizing removal of phosphorus.	09/30/2030

Explanation of Continued Optimization Schedule: Per s. 283.16(6)(a), Wis. Stats. the Department may include a requirement that the permittee optimize the performance of a point source in controlling phosphorus discharges, which may be necessary to achieve compliance with multi-discharger variance interim limits. This compliance schedule requires the permittee to continue to implement the optimization plan that was approved during the previous permit term.

Other Comments

Publishing newspaper: The Banner Journal, 409 E. Main St., Black River Falls, WI 54615-1460

Attachments

- August 18, 2025 memo from Ben Hartenbower to Holly Heldstab titled “Water Quality-Based Effluent Limitations for the Wazee Area Wastewater Commission WPDES Permit No. WI-0036889”.

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Holly Heldstab, Wastewater Specialist **Date:** 08/29/2025

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: August 18, 2025

TO: Holly Heldstab – WCR/Eau Claire

FROM: Benjamin Hartenbower – WCR/Eau Claire

SUBJECT: Water Quality-Based Effluent Limitations for Wazee Area Wastewater Commission
WPDES Permit No. WI-0036889

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 Wazee Area Wastewater Commission in Jackson County. This municipal wastewater treatment facility (WWTF) discharges to the Black River, located in the Morrison Creek Watershed in the Black River Basin.

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	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5			45 mg/L	30 mg/L		1,3
TSS			45 mg/L	30 mg/L		1,3
pH	9.0 s.u.	6.0 s.u.				1
E. coli				126 #/100 mL geometric mean		4
Copper						1,2
Zinc	146 µg/L, 0.87 lbs/day		**146 µg/L**	**146 µg/L**		5
Hardness						6
PFOS and PFOA						2,7
Phosphorus HAC Interim Limit Final WQBEL				 0.6 mg/L 0.300 mg/L	 0.100 mg/L, 0.38 lbs/day	8
TKN, Nitrate+Nitrite, and Total Nitrogen						1,9
Acute WET						10

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. These limits are based on the Warm Water Sport Fish (WWSF) community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.
4. Bacteria limits apply during the disinfection season of May through October. Additional limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.

5. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are included in bold.
6. Hardness monitoring is recommended because of the relationship between hardness and daily maximum limits based on acute toxicity criteria.
7. PFOS and PFOA monitoring is recommended once every two months in accordance with s. NR 106.98(2), Wis. Adm. Code.
8. Under the phosphorus MDV, the highest attainable condition (HAC) limit of 0.6 mg/L should be effective upon permit reissuance. The final WQBELs remain at 0.300 mg/L as a monthly average and 0.100 mg/L as a six-month average.
9. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees.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 (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).
10. Two Acute WET tests are recommended in the reissued permit. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Benjamin Hartenbower at (715) 225-4705 or benjamin.hartenbower@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, Thermal Table, & Map

PREPARED BY: _____ Date: 08/18/2025

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Attachment #1

Water Quality-Based Effluent Limitations for

WPDES Permit No. WI-

Prepared by: Benjamin P. Hartenbower

PART 1 – BACKGROUND INFORMATION

Facility Description
The Wazee Area Wastewater Commission services the Jackson Correctional Institution and the Ho-Chunk Nation. Wastewater treatment consists of an oxidation ditch with biological nutrient removal. The treatment system also includes alum addition and UV disinfection. The discharge is to the east bank of the Black River, four miles upstream of the Black River Falls Dam.

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

Existing Permit Limitations
The current permit, expiring on 09/30/2025, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5			45 mg/L	30 mg/L		1,3
TSS			45 mg/L	30 mg/L		1,3
pH	9.0 s.u.	6.0 s.u.				1
Fecal Coliform May - September				400#/100 mL Geometric Mean		4
E. coli May - September				400#/100 mL Geometric Mean		
Copper						2
Zinc						2
Phosphorus Interim MDV Interim Final WQBEL				 0.8 mg/L 0.6 mg/L 0.300 mg/L	 0.100 mg/L	5
TKN, Nitrate+Nitrite, and Total Nitrogen						2

Footnotes:

1. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
2. Monitoring only.

3. These limits are based on the Warm Water Sport Fish (WWSF) community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.
4. A compliance schedule is in the current permit for the E. coli limit to replace the Fecal Coliform limit by May 1, 2023.
5. A compliance schedule is in the current permit to meet the MDV Interim Limit by October 1, 2023.

Receiving Water Information

- Name: Black River
- Waterbody Identification Code (WBIC):
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, N/A, non-public water supply.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q_{10} and 7-Q_2 values are from previous limit memos for the Wazee Area Wastewater Commission dating back to February 10, 2005. .
  7-Q_{10} = 54 cubic feet per second (cfs)
  7-Q_2 = 137 cfs
  Harmonic Mean Flow = 347 cfs
- Hardness = 42 mg/L as $CaCO_3$. This value represents the geometric mean of data collected in the Black River from 10/03/1994 to 06/05/2001 (n = 79).
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%
- Source of background concentration data: Metals and Chloride data from the Black River are used for this evaluation.
- Multiple dischargers: There are several other dischargers to the Black River however they are not in the immediate vicinity and the mixing zones do not overlap. Therefore, the other dischargers do not impact this evaluation
- Impaired water status: The Black River is impaired for Mercury (multiple segments between miles 14.52 and 180.98), PCBs from mile 14.52 to 73.36, and Total Phosphorus from mile 14.52 to 203.42.

Effluent Information

- Design flow rates:
  Annual average = 0.461 million gallons per day (MGD)
  Peak daily = 0.71 MGD (Estimated)
  The peak design flows were estimated from the annual average design flow and a peaking factor based on data from 10/01/2020 to 04/30/2025.
  For reference, the actual average flow from 10/01/2020 to 04/30/2025 was 0.150 MGD.
  Hardness = 56 mg/L as $CaCO_3$ This value represents the geometric mean of data (n = 12) from August 2014 to March 2024 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.
- Water supply: Water supply from Ho Chunk Nation and Village of Brockway.
- Additives: Alum for phosphorus removal and soda ash for alkalinity adjustment.

- 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 Hardness, Chloride, and Ammonia Nitrogen. The permit-required monitoring for Copper, Phosphorus, and Zinc from 10/01/2020 to 02/28/2025 is used in this evaluation.
- 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
11/23/2020	<0.034	05/16/2022	<0.034	10/23/2023	<0.034
02/15/2021	5	07/18/2022	<0.034	01/29/2024	3.4
05/24/2021	<0.034	11/07/2022	2.68	07/01/2024	0.985
07/26/2021	<0.034	03/27/2023	2.55	09/30/2024	1.75
11/29/2021	<0.034	04/17/2023	0.72	11/25/2024	2.417
03/14/2022	<0.034	08/21/2023	<0.034	01/06/2025	<0.034
Mean = 1.083 µg/L					

"<" 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 results.

Chloride Effluent Data

Sample Date	Chloride (mg/L)
03/22/2024	78
03/25/2024	75
03/28/2024	76
03/31/2024	73
Mean	76 mg/L

The following table presents the average concentrations and loadings at Outfall 001 from October 2020 to February 2025 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
BOD_5*	5.5 mg/L
TSS*	4.9 mg/L
pH	7.09 su
Ammonia Nitrogen	0.25 mg/L
E. *coli***	10 #/100 ml
Fecal Coliform**	55 #/100 ml
Phosphorus*	0.33 mg/L
Copper*	1.08 ug/L
Zinc*	22.33 ug/L

*Results below the limit of detection (LOD) were included as zeroes in calculation of average.
** The average 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 P_{99}) 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-Q_{10}

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. 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-Q_{10} 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.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

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

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-Q_{10} 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 Wazee Area Wastewater Commission, 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 and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)
RECEIVING WATER FLOW = 43 cfs, (1-Q_{10} (estimated as 80% of 7-Q_{10})), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MEAN BACK-GRD.	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Arsenic		340		680	136	<1.1		
Cadmium	56	5.33	0.0090	10.65	2.13	<0.12		
Chromium (+3)	56	1125	0.6220	2251	450	<1.2		
Copper	56	9.01	1.2650	18.03	3.61	1.08		5
Lead	56	61.32	0.1784	122.64	24.53	<0.25		
Nickel	56	288.33		576.67	115.33	1.8		
Zinc	56	72.77	1.7100	145.55			197	196
Chloride (mg/L)		757	10	1514	303	76		78

* * The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q_{10} 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 = 14 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4), 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		152		3033	607	<1.1	
Cadmium	42	1.24	0.0090	24.51	4.90	<0.12	
Chromium (+3)	42	65	0.6220	1274	255	<1.2	
Copper	42	4.89	1.2650	73.60	14.72	1.08	
Lead	42	12.02	0.1784	236.24	47.25	<0.25	
Nickel	42	24.89		496.10	99.22	1.8	
Zinc	42	56.00	1.7100	1083.61			109
Chloride (mg/L)		395	10	7679	1536	76	

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 Threshold Criteria (HTC)
RECEIVING WATER FLOW = 87 cfs (¼ of the 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.	30-day P_{99}
Cadmium	370.00	0.0090	4069.91	813.98	<0.12	
Chromium (+3)	3818000	0.6220	41997994	8399599	<1.2	
Lead	140.0	0.1784	1538.2	307.6	<0.25	
Nickel	43000		473000	94600	1.8	

Monthly Average Limits based on Human Cancer Criteria (HCC)
RECEIVING WATER FLOW = 87 cfs (¼ of the 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.	30-day P_{99}
Arsenic	13.30		146.30	29.26	<1.1	

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, effluent limitations are required for Zinc. Limit and monitoring recommendations are made in the paragraphs below:

Zinc - Considering available effluent data from the current permit term (October 2020 to February 2025), the 1-day P_{99} is 197 µg/L, with a maximum of 196 µg/L and the 4-day P_{99} is 109 µg/L. These values exceeds the calculated daily maximum effluent limit. Therefore concentration and mass limits, as well as monthly monitoring, are required. **The daily maximum is 146 µg/L.**

The acute mass limitation of 0.87 lbs/day is based on the concentration limit and the peak daily design flow rate of 0.714 MGD (145.55 µg/L * 0.714 MGD * 8.34/1,000) in accordance with s. NR 106.07(2)(a), Wis. Adm. Code.

Quarterly hardness monitoring is also recommended because of the relationship between hardness and daily maximum limits based on acute toxicity criteria.

Mercury - The permit application did not require monitoring for mercury because Wazee Area Wastewater Commission 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 2021 to 2024 was 2.00 mg/kg, with a maximum reported concentration of 3.90 mg/kg. **Therefore, no monitoring is recommended for 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.

Monitoring of the water supply produced a PFOS result of 38.10 ng/L and a PFOA result of 4.20 ng/L. The PFOS result is greater than one fifth of the criterion for the substance. Based on the known levels of PFOS/PFOA in the source water, **PFOS and PFOA monitoring is recommended once every two months.**

PART 3 – 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. Given the fact that Wazee Area Wastewater Commission does not currently have ammonia nitrogen limits, the need for limits is evaluated at this time.

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:

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

Where:

A = 0.411 and B = 58.4 for a Warm Water Sport fishery, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 1673 sample results were reported from 10/01/2020 to 04/30/2025. The maximum reported value was 8.20 s.u. (Standard pH Units). The effluent pH was 7.60 s.u. or less 99% of the time.The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 7.59 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 7.58 s.u. Therefore, a value of 7.60 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 7.60 s.u. into the equation above yields an ATC = 17.03 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-Q_{10} 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-Q_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit mg/L
2×ATC	34.06
1-Q_{10}	1,044

The 2xATC method yields the most stringent limits for Wazee Area Wastewater Commission.

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.

Attachment #1

Daily Maximum Ammonia Nitrogen Limits – WWSF/WWFF

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
$6.0 \leq pH \leq 6.1$	108	$7.0 < pH \leq 7.1$	66	$8.0 < pH \leq 8.1$	14
$6.1 < pH \leq 6.2$	106	$7.1 < pH \leq 7.2$	59	$8.1 < pH \leq 8.2$	11
$6.2 < pH \leq 6.3$	104	$7.2 < pH \leq 7.3$	52	$8.2 < pH \leq 8.3$	9.4
$6.3 < pH \leq 6.4$	101	$7.3 < pH \leq 7.4$	46	$8.3 < pH \leq 8.4$	7.8
$6.4 < pH \leq 6.5$	98	$7.4 < pH \leq 7.5$	40	$8.4 < pH \leq 8.5$	6.4
$6.5 < pH \leq 6.6$	94	$7.5 < pH \leq 7.6$	34	$8.5 < pH \leq 8.6$	5.3
$6.6 < pH \leq 6.7$	89	$7.6 < pH \leq 7.7$	29	$8.6 < pH \leq 8.7$	4.4
$6.7 < pH \leq 6.8$	84	$7.7 < pH \leq 7.8$	24	$8.7 < pH \leq 8.8$	3.7
$6.8 < pH \leq 6.9$	78	$7.8 < pH \leq 7.9$	20	$8.8 < pH \leq 8.9$	3.1
$6.9 < pH \leq 7.0$	72	$7.9 < pH \leq 8.0$	17	$8.9 < pH \leq 9.0$	2.6

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

The ammonia limit calculation also warrants evaluation of weekly and monthly average limits based on chronic toxicity criteria for ammonia, because those limits relate to the assimilative capacity of the receiving water.

Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code.

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as a Warm Water Sport Fish Community is calculated by the following equation, according to subchapter IV of NR 106, Wis. Adm. Code.

$$CTC = E \times \{[0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})]\} \times C$$

Where:

pH = the pH (s.u.) of the receiving water,
E = 0.854,
C = the minimum of 2.85 or $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or
C = $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and
T = the temperature of the receiving (ºC) – (Early Life Stages Present), or
T = the maximum of actual temperature (ºC) and 7 – (Early Life Stages Absentt)

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q_{10} (4-Q_3, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q_5 (estimated as 85% of the 7-Q_2 if the 30-Q_5 is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature; 100% of the flow is used if the Temperature ≥ 16 ºC, 25% of the flow is used if the Temperature < 11 ºC, and 50% of the flow is used if the Temperature ≥ 11 ºC but < 16 ºC.

The "default" basin assumed values are used for Temperature, because minimum ambient data is available. Values for pH and ammonia concentrations are from the Black River. These values are shown in the table below, with the resulting criteria and effluent limitations.

Attachment #1

Weekly and Monthly Ammonia Nitrogen Limits – WWSF/WWFF

		April & May	June - September	October - March
Effluent Flow	Qe (MGD)	0.461	0.461	0.461
Background Information	7-Q_{10} (cfs)	54	54	54
	7-Q_2 (cfs)	137	137	137
	Ammonia (mg/L)	0.14	0.15	0.10
	Average Temperature (°C)	11.7	18.6	3.5
	Maximum Temperature (°C)	14.4	20.6	10.0
	pH (s.u.)	7.39	7.63	7.53
	% of Flow used	50	100	25
	Reference Weekly Flow (cfs)	27	54	14
	Reference Monthly Flow (cfs)	58	116	29
Criteria mg/L	4-day Chronic			
	Early Life Stages Present	11.95	6.53	10.65
	Early Life Stages Absent	12.01	6.53	14.26
	30-day Chronic			
	Early Life Stages Present	4.78	2.61	4.26
	Early Life Stages Absent	4.80	2.61	5.70
Effluent Limitations mg/L	Weekly Average			
	Early Life Stages Present	459	490	210
	Early Life Stages Absent			
	Monthly Average			
	Early Life Stages Present	383	405	174
	Early Life Stages Absent			

Effluent Data

Samples for ammonia nitrogen were taken March 2024, and their results were as follows:

Ammonia Nitrogen Effluent Data

Sample Date	Ammonia Nitrogen mg/L
03/22/2024	0.297
03/25/2024	0.325
03/28/2024	0.199
03/31/2024	0.161
Mean	0.246

Reasonable Potential
Based on available data, there is no reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits.

Conclusions and Recommendations
In summary, **no ammonia nitrogen limitations or monitoring are recommended**.

PART 4 – 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 May through October. No changes are recommended to the current recreational period and the required disinfection season.

Effluent Data
Wazee Area Wastewater Commission has monitored effluent *E. coli* from 05/03/2021 to 09/25/2024 and a total of 88 results are available. A geometric mean of 126 counts/100 mL was exceeded in 1 of the last 18 months, with a maximum monthly geometric mean of 149 counts/100 mL. Effluent data did not exceed 410 counts/100 mL. The maximum reported value was 268 counts/100 mL.

PART 5 – 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 Wazee Area Wastewater Commission has phosphorus limits in effect that are more stringent than 1.0 mg/L, the need for a TBEL will not be considered further.

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

Water Quality-Based Effluent Limits (WQBEL)

Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.100 mg/L applies for the Black River.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream phosphorus concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Qs+(1-f)\ Qe) - (Qs-f\ Qe)\ (Cs)]/Qe$$

Where:

WQC = 0.100 mg/L for the Black River
Qs = 100% of the 7-Q_2 of 137 cfs
Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code
Qe = effluent flow rate = 0.461 MGD = 0.713 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall be calculated as a median using the procedures specified in s. NR 102.07(1)(b) to (c), Wis. Code. All representative data from the most recent 5 years shall be used, but data from the most recent 10 years may be used if representative of current conditions.

The following data were considered in estimating the background phosphorus concentration:

SWIMS ID	273038
Station Name	Monitoring station at Black River - Below Power House-Hatfield Dam
Waterbody	Black River
Sample Count	6
First Sample	05/18/2015
Last Sample	10/19/2015
Mean	0.134 mg/L
Median	0.135 mg/L
NR 217 Median	0.135 mg/L

Substituting a background concentration above criteria into the limit calculation equation above would result in a calculated limit that is less than the applicable criterion of 0.100 mg/L. However, s. NR 217.13(7), Wis. Adm. Code, specifies that "if the WQBEL calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06, Wis. Adm. Code, for the water body, the effluent limit shall be set equal to the criterion."

Effluent Data
The following table summarizes effluent total phosphorus monitoring data from October 2020 to March 2025.

Total Phosphorus Effluent Data

	Phosphorus mg/L
1-day P_{99}	0.940
4-day P_{99}	0.595
30-day P_{99}	0.416
Mean	0.333
Std	0.177
Sample size	669
Range	<0.07 - 1.45

Reasonable Potential Determination
Since the 30-day P_{99} of reported effluent total phosphorus data is greater than the calculated WQBEL, the discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion. Therefore, **a WQBEL is required.**

Limit Expression
According to s. NR 217.14(2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.100 may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.300 mg/L, equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. Code shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

Mass Limits
A mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code, because the discharge is to a surface water that is to or upstream of a . **This final mass limit shall be 0.100 mg/L × 8.34 × 0.461 MGD = 0.38 lbs/day expressed as a six-month average.**

Multi-Discharge Variance Interim Limit
With the permit application, Wazee Area Wastewater Commission has re-applied for the phosphorus multi-discharger variance (MDV). Conditions of the phosphorus MDV require the facility to comply with an interim phosphorus limit in lieu of meeting the final WQBEL. The recommended interim limit during the 2nd permit under MDV approval, pursuant to s. 283.16(6)(a)2, Wis. Stats., is **0.6 mg/L as a monthly average.**

Attachment #1

PART 6 – 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 October 2020 to April 2025.

Monthly Temperature Effluent Data & Limits

Month	Calculated Effluent Limit	
	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	NA	120
FEB	NA	120
MAR	NA	120
APR	NA	120
MAY	NA	120
JUN	NA	120
JUL	NA	120
AUG	NA	120
SEP	NA	120
OCT	NA	120
NOV	NA	120
DEC	NA	120

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

Reasonable Potential

Due to the amount of upstream flow available for dilution in the limit calculation, the lowest calculated limitation is 120° F (s. NR 106.55(6)(a), Wis. Adm. Code). For activated sludge treatment systems of domestic waste, there is no reasonable potential for the discharge to exceed this limit.

Therefore, limits and monitoring for temperature are not recommended.

Attachment #1

PART 7 – 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 *Whole Effluent Toxicity (WET) Program Guidance Document* (2022).

- 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 LC_{50} (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 IC_{25} (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 5%**, shown in the WET Checklist summary below, was calculated according to the follow equation, as specified in s. NR 106.03(6), Wis. Adm. Code:

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

Where:

Qe = annual average flow = 0.461 MGD
f = fraction of the Qe withdrawn from the receiving water = 0
Qs = ¼ of the 7-Q_{10} = 54.0 cfs ÷ 4 = 13.5 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. The 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 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.

Attachment #1

WET Data History

Date Test Initiated	Acute Results LC50 %				Chronic Results IC25 %					Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	*C. dubia*	Fathead Minnow	Algae (IC50)	Pass or Fail?	Use in RP?	
09/24/1996	>100	>100	Pass	No	64				No	1
09/23/1997	>100	>100	Pass	No	>100	>100			No	1
09/26/2001	>100	>100	Pass	No						1
07/24/2012	>100	>100	Pass	Yes						
09/18/2013	>100	>100	Pass	Yes						
12/10/2014	>100	>100	Pass	Yes						
02/11/2015	>100	>100	Pass	Yes						

Footnotes:

1. *Data Not Representative.* Significant changes were made to WET test methods in 2004 and these changes were assumed to be fully implemented by certified labs by no later than June 2005.

- 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.**

  Acute Reasonable Potential = [(TUa effluent) (B)(AMZ)]

  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 LC_{50}, IC_{25} or $IC_{50} \geq 100\%$).

  Acute 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 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.

Attachment #1

WET Checklist Summary

	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 5% **0 Points**
Historical Data	Four tests used to calculate RP. No tests failed. **0 Points**	No data available. **5 Points**
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	WWSF (5 pts) **5 Points**	Same as Acute. **5 Points**
Chemical-Specific Data	Reasonable potential for Zinc limits based on ATC. (5 pts) Ammonia, Copper, Nickel and Chloride detected. (3 pts) Additional Compounds of Concern: None **8 Points**	No reasonable potential for limits based on CTC. Ammonia, Copper, Zinc and Chloride detected. (3 pts) Additional Compounds of Concern: None **3 Points**
Additives	Two Water Quality Conditioners (2 pts) Permittee has proper P chemical SOPs in place. **2 Points**	All additives used more than once per 4 days. **2 Points**
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:	**20 Points**	**15 Points**
Recommended Monitoring Frequency (from Checklist):	2 tests during permit term	No chronic monitoring recommended.
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

- After consideration of the guidance provided in the Department's *WET Program Guidance Document* (2022) and other information described above, two Acute WET tests are recommended in the reissued permit. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge.

Attachment #1

PART 8 – EXPRESSION OF LIMITS

Revisions to chs. NR 106 and 205, Wis. Adm. Code, align Wisconsin's WQBELs with 40 CFR 122.45(d), which requires WPDES permits contain the following concentration limits, whenever practicable and necessary to protect water quality:

- Weekly average and monthly average limitations for continuous discharges subject to ch. NR 210.
- Daily maximum and monthly average limitations for all other discharges.

Wazee Area Wastewater Commission is a municipal treatment facility and is therefore subject to weekly average and monthly average limitations whenever limitations are determined to be necessary.

This evaluation provides additional limitations necessary to comply with the expression of limits in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code. Pollutants already compliant with these rules or that have an approved impracticability demonstration, are excluded from this evaluation including water-quality based effluent limitations for phosphorus, temperature, pH, and *E. coli* among other parameters. Mass limitations are not subject to the limit expression requirements if concentrations limits are given.

Method for Calculation

The methods for calculating limitations for continuous discharges subject to ch. NR 210 to conform to 40 CFR 122.45(d) are specified in s. NR 106.07(3), Wis. Adm. Code, and are as follows:

1. Whenever a daily maximum limitation is determined necessary to protect water quality, a weekly and monthly average limitation shall also be included in the permit and set equal to the daily maximum limit unless a more restrictive limit is already determined necessary to protect water quality.
2. Whenever a weekly average limitation is determined necessary to protect water quality, a monthly average limitation shall also be included in the permit and set equal to the weekly average limit unless a more restrictive limit is already determined necessary to protect water quality.
3. Whenever a monthly average limitation is determined necessary to protect water quality, a weekly average limit shall be calculated using the following procedure and included in the permit unless a more restrictive limit is already determined necessary to protect water quality:

   Weekly Average Limitation = (Monthly Average Limitation × MF)

   Where:

   MF= Multiplication factor as defined in Table 1

   CV= coefficient of variation (CV) as calculated in s. NR 106.07(5m), Wis. Adm. Code.

   n= the number of samples per month required in the permit

s. NR 106.07(3)€4, Table 1, Wis. Adm. Code — Multiplication Factor (for CV = 0.6)

CV	n=1	n=2	n=3	n=4	n=8	n=12	n=16	n=20	n=24	n=30
0.6	1.00	1.31	1.51	1.64	1.95	2.12	2.23	2.30	2.36	2.43

Note: This methodology is based on the *Technical Support Document for Water Quality-based Toxics Control* (March 1991). PB91-127415.

Summary of Additional Limitations:
In conclusion, the following additional limitations are required to comply with ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code.

Expression of Limits Summary

Parameter	Daily Maximum	Weekly Average	Monthly Average	Multiplication Factor (CV)	Assumed Monitoring Frequency (n)
Zinc	146 µg/L	**146 µg/L**	**146 µg/L**		

Temperature limits for receiving waters with unidirectional flow

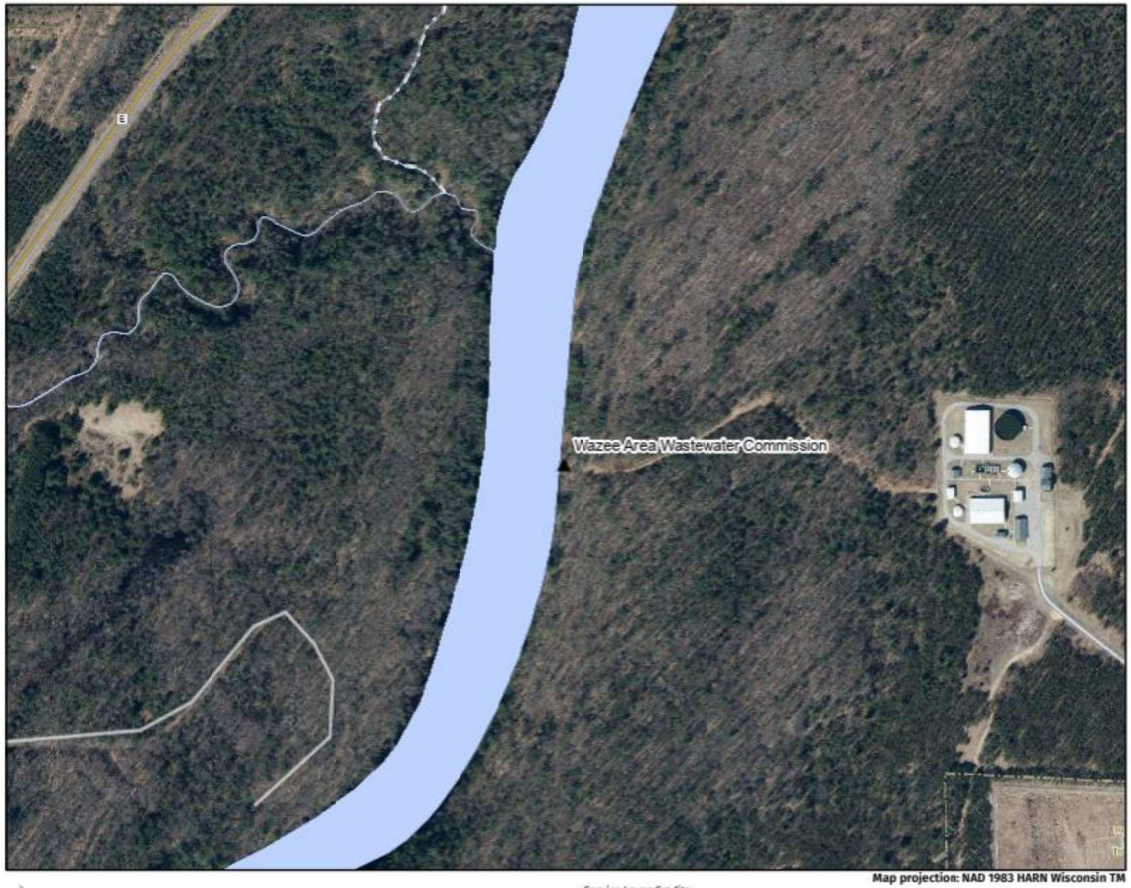
(calculation using default ambient temperature data)

Facility:	Wazee Area Wastewater Commission		**7-Q10:**	54.00	cfs	**Temp Dates**	**Flow Dates**
Outfall(s):	001		**Dilution:**	25%	**Start:**	N/A	10/01/20
Date Prepared:	05/22/2025		**f:**	0	**End:**	N/A	04/30/25
Design Flow (Qe):	0.461	MGD	**Stream type:**	Small warm water sport or forage fish community			
Storm Sewer Dist.		ft	**Qs:Qe ratio:**	18.9	: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)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	13.50	0.191	0.218	0			NA	120
FEB	34	50	76	13.50	0.200	0.233	0			NA	120
MAR	38	52	77	13.50	0.208	0.208	0			NA	120
APR	48	55	79	13.50	0.187	0.217	0			NA	120
MAY	58	65	82	13.50	0.170	0.190	0			NA	120
JUN	66	76	84	13.50	0.168	0.193	0			NA	120
JUL	69	81	85	13.50	0.167	0.189	0			NA	120
AUG	67	81	84	13.50	0.172	0.196	0			NA	120
SEP	60	73	82	13.50	0.175	0.195	0			NA	120
OCT	50	61	80	13.50	0.184	0.201	0			NA	120
NOV	40	49	77	13.50	0.179	0.202	0			NA	120
DEC	35	49	76	13.50	0.183	0.207	0			NA	120

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Wazee Area Wastewater Commission



Legend: (some map layers may not be displayed)

- Surface Water Outfalls
- Rivers and Streams
- Intermittent Streams
- Open Water
- 24K Intermittent Streams
- 24K Lakes and Open Water
- 24K Streams and Rivers
- County Boundaries

County and Local Roads

- County HWY
- Local Road
- Tribal Lands
- Latest Leaf Off Imagery

Notes:

Map projection: NAD 1983 HARN Wisconsin TM

N

Map: 0 440 880 Feet / 0 125 250 Meters

Service Layer Credits:
Latest Leaf Off: , Permits & Determinations: WI DNR Bureau of Watershed Management, Cities, Roads & Boundaries: , Surface Water (Cached): WiDNR, USGS, and other data

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8/7/2025

Tim Wiesner, Wazee WWTF Manager
W 9450 WaKaJaHuk Road
Black River Falls, WI 54615

Subject: Conditional approval of a multi-discharger phosphorus variance
Receiving Stream: Black River in Jackson County
Permittee: Wazee Area Wastewater Commission, WPDES WI-0036889

Dear Mr. Wiesner:

In accordance with s. 283.16 of the Wisconsin Statutes, you have requested coverage under Wisconsin's multi-discharger phosphorus variance for Wazee Area Wastewater Commission Wastewater Treatment Facility in an application dated 6/27/2025. Wisconsin's multi-discharger phosphorus variance was approved by EPA on February 6, 2017. Coverage under the multi-discharger phosphorus variance may only be granted to an existing source that demonstrates a major facility upgrade is necessary to achieve phosphorus compliance and the upgrade will result in economic hardship as defined in the federally approved variance. The water quality criterion for which you are seeking a variance is contained in s. NR 102.06, Wis. Adm. Code.

After review of the application materials, the Department is tentatively approving coverage under the phosphorus multi discharger variance because the applicant has demonstrated that a major facility upgrade would be required to comply with the phosphorus water quality based effluent limitation, and the applicant meets the economic hardship eligibility criteria delineated in the federally approved variance. In addition, the permitted facility has agreed to comply with the interim limitations that will be included in the WPDES permit, and has agreed to reduce the amount of phosphorus entering surface waters by making payments to the counties pursuant to s. 283.16(6)(b)1., Wis. Stats.

Public comment on this decision will be solicited at the time of permit reissuance after which a final decision will be made. The Department appreciates your attention and interest in Wisconsin's multi-discharger phosphorus variance. Should you have further questions regarding this matter, please contact me at (608) 400 – 5596 or by email at matthew.claucherty@wisconsin.gov.

Sincerely,

Matt Claucherty, MDV Point Source Coordinator
Bureau of Water Quality

e-cc Kevin Gunderson, Wazee
Holly Heldstab, WDNR
Angela Parkhurst, WDNR
Jenna Monahan, WDNR
Geisa Bittencourt, WDNR
Michelle Woods, EPA Region 5
Tim Elkins, EPA Region 5

State of Wisconsin
Department of Natural Resources
Bureau of Water Quality
Permits Section - WQ/3

Multi-Discharger Variance Application Evaluation Checklist

Form 3200-145 (R 5/16)

Notice: This checklist is meant to be a tool to help Department of Natural Resources (DNR) staff review municipal and industrial multi-discharger variance (MDV) applications (Forms 3200-149 and 3200-150). Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31-19.39, Wis. Stats.).

Permittee Name

Wazee Area Wastewater Commission

WPDES Permit Number	County
WI- 0 | 0 | 3 | 6 | 8 | 8 | 9	Jackson

1. Did the point source apply for the MDV at the appropriate time?	(•) Yes ( ) No. *STOP- facility not eligible at this time.*	*See Questions 1-3.*
2. This operation is (check one):	( ) New or relocated outfall. *STOP- facility not eligible.* (•) Existing outfall	*See Questions 5-6.*
3. Is the point source is located in an MDV eligible area?	(•) Yes ( ) No. *STOP- facility not eligible.*	*Apply County information to Appendix H. Additional information provided in Q7 on municipal form & Q7-8 on industrial form.*
4. The secondary indicator score for the county (counties) the discharge is located is:	6	*See Appendices A-F. If the score is less than 2, stop; the facility is not eligible. See Q23 on municipal form & Q28 on industrial form.*
5. Is a major facility upgrade required to comply with phosphorus limits?	(•) Yes ( ) No. *STOP- facility not eligible.*	*See Q8 on municipal form/Q9 on industrial form.*
6. List the months where phosphorus limits cannot be achieved during the permit term:	☒ All ☒ Jan ☒ Apr ☒ Jul ☒ Oct ☒ Feb ☒ May ☒ Aug ☒ Nov ☒ Mar ☒ Jun ☒ Sep ☒ Dec	*Consider checking with limit calculator. If this does not match information in application, the application should be updated prior to approval.*

7. What is the current effluent level achievable?

Outfall Number(s)	Conc. (mg/L)	Method for calculation:	Does this concur with application?	
001	0.41	(•) 30-day P99 ( ) Other, specify:	( ) Yes (•) No, why not: Application used older dataset	*DNR staff should verify the effluent concentration value(s) provided. See Q11 on municipal form & Q12 on industrial form.*

8. What is the appropriate interim limitation(s) for the permit term?

0.6 mg/L as a monthly average pursuant to s. 283.16(6)(a)(2), Wis. Stats.
Target Value = 0.2 mg/L

Provide Rationale:

Effluent phosphorus data from the past three years (4/1/2022 - 3/31/2025, n=439) yield a 30-day P99 value of 0.41 mg/L. While this level of control is often achieved, late summer months tend to average within the 0.5 - 0.6 mg/L range. No schedule is recommended for this interim limit.

Note: See description in Section 2.02 of the MDV implementation guidance. Interim limitations should reflect the "highest attainable condition" for the permittee in question pursuant to s. 283.16(7), Wis. Stat.

9. *For Industries Only*- Where does the phosphorus in the effluent come from? (check all that apply)	☐ Process ☐ Additive Usage ☐ Water supply *Can intake credits be given or can the facility use an alternative water supply?* ◯ Not feasible ◯ Possibly, but further analysis needed ◯ Not evaluated at this time	*See Q14-15 & 19 on industrial form. If the answer is "possibly" or "not evaluated", the schedule section of the MDV permit should contain a requirement to perform this analysis.*
10. Has this facility optimized?	◉ Yes ◯ In progress ◯ No	*See Q14 on municipal form & Q16 & 20 on industrial form. Facility must optimize and operate at an optimize treatment level (s. 283.16(6)(a), Wis. Stat.)If no will need compliance schedule.*
11. Has a facility plan/compliance alternative plan been completed for the facility?	◉ Yes ◯ In progress ◯ No	*See Q15 on municipal form & Q17 on industrial form.*
12. What is the projected cost for complying with phosphorus? Source:	$ 6,000,000.00 MDV Application - 2018 estimate of 4.8M adjusted upwards for inflation	*Facility must submit site-specific compliance costs. If cost projections are used from EIA, the permittee must certify that these costs are reasonable for the facility in question. See "projected compliance costs" in Section 2.02 of the MDV Implementation Guidance for details.*

Comments on planning efforts:

MSA Professional Services Inc. authored a November 2019 Final Compliance Alternatives Plan which provides information regarding various strategies to achieve the stringent phosphorus limit. No trading partners were available at the time the Plan was written. More recently, Wazee has evaluated water quality trading. A project may be available, however the amount of offset and price is uncertain. The 2019 Plan evaluated tertiary treatment technologies to meet the stringent WQBEL for phosphorus. Site specific cost estimates are provided, the lowest of which is adjusted for inflation and used in the economic demonstration below.

13. Are adaptive management and water quality trading viable?	◯ Yes ◉ Perhaps. Additional analysis required. ◯ No	*See Q18-21 on municipal form & Q22-25 on industrial form. If additional analyses required, the applicant may need to complete this analysis during the MDV permit term.*
14. Has the point source met the appropriate primary screener?	◉ Yes ◯ No. *STOP- facility not eligible.*	*See Q4 of this form in addition to the "eligibility" guidance in Section 2.01 of the MDV Implementation Guidance.*

Comments on economic demonstration:

The Plan recommends chemical addition followed by disc filtration to achieve the 0.1 mg/L WQBEL. The site specific cost estimate arrives at capitals costs of $3,830,000 and annual O&M costs of 68,000 annually. Adjusting upwards for inflation (CPI, 1/2019 to 1/2025), these values are $4,833,619.10 for capital costs and $85,818.82 for O&M. Assuming a 2.2% interest rate on a 20-year CWFP loan, annual payments would be $301,344.34, or $387,163.16 total costs including O&M. With a 27% residential use rate, the residential share is $104,534.05. This cost, divided amongst 219 households, results in a per-user rate increase of $477.32 as an annual average. Projected sewer rates are $777.32, or 1.29% of Wazee's $60,250.47 median household income. In Jackson County with a secondary indicator score of 6, projected sewer user rates at 1% of MHI meet the primary screener. The applicant meets the primary screener.

15. What watershed option was selected?

- (•) County project option. *Complete Section 5.*
- ( ) Binding, written agreement with the DNR to construct a project or implement a watershed plan. *Complete Section 4.*
- ( ) Binding, written agreement with another person that is approved by the DNR to construct a project or implement a watershed plan. *Complete Section 4.*

Section 4. Watershed Plan Review

16. MDV Plan Number: *Note: This is for tracking purposes. Contact Statewide Phosphorus Implementation Coordinator for the plan number.*	_____
17. Did the point source complete Form 3200-148?	( ) Yes ( ) No
18. Is the project area in the same HUC 8 watershed as the point of discharge?	( ) Yes ( ) No. *STOP- Watershed plan must be updated.*
19. What is the annual offset required? *See Section 2.03 of the MDV implementation guidance. If this value is different from the offset target provided in form 3200-148, the watershed plan should be amended.*	_____
20. Does the plan ensure that the annual load is offset annually?	( ) Yes ( ) No. *STOP- Watershed plan must be updated.*

21. Are projects occurring on land owned/operated by a CAFO or within a permitted MS4 boundary?

- ( ) Yes. *Work with appropriate DNR staff to ensure projects are not working towards other permit compliance.*
- ( ) No.

22. Are other funding sources being used as part of the MDV watershed project?

- ( ) Yes. *Work with appropriate DNR staff to ensure that funding sources can be appropriately used in the plan area.*
- ( ) No.

23. Do you have any concerns about the watershed project? *Note: Coordinate with other DNR staff as appropriate.*	( ) Yes. *STOP- Watershed plan must be updated.* ( ) No.

Comments:

Section 5. Payment to the County(ies)

24. At this time, the appropriate per pound payment is: $ 66.62

See "Payment Calculator" document at \\central\water\WQWT_PROJECTS\WY_CW_Phosphorus\MDV.

Section 6. Determination

Based on the available information, the MDV application is:

- (•) Approved
- ( ) Request for more information
- ( ) Denied

Additional Justification (if needed):

Certification		
Preparer Name	Title	
Matt Claucherty	Water Resources Management Specialist	
Signature of Preparer		Date
Matt Claucherty		8/7/2025