Permit Fact Sheet

General Information

Permit Number	WI-0031801-09-0
Permittee Name and Address	VILLAGE OF CAZENOVIA 303 N Hwy 58 PO Box 151, Cazenovia, WI 53924
Permitted Facility Name and Address	Cazenovia Wastewater Treatment Facility STATE LANE, NEQ, SEC 5, T12N, R3E, IRONTON TWP, CAZENOVIA, WI
Permit Term	October 01, 2025 to September 30, 2030
Discharge Location	Southwest bank of the Little Baraboo River. NE ¼ NE ¼, Section 5, T12N, R3E.
Receiving Water	Little Baraboo River (Crossman Creek/Little Baraboo River Watershed, LW23 – Lower Wisconsin River Basin) in Sauk County
Stream Flow ($Q_{7,10}$)	6.4 cfs
Stream Classification	Warm Water Sport Fish (WWSF), non-public water supply, and recreational use
Discharge Type	Existing, Intermittent
Annual Average Design Flow (MGD)	0.035 MGD
Industrial or Commercial Contributors	None
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System; P - Total Phosphorus
Approved Pretreatment Program?	N/A

Facility Description

Cazenovia Wastewater Treatment Facility is a three-cell stabilization lagoon system which consists of a single primary cell of 5.1 million gallons capacity followed by two secondary cells of 2.2 million gallon each. Between the primary cell and secondary cells, ferric chloride is added to assist in phosphorus treatment. The facility presently treats wastewater from Cazenovia, Ironton, and Germantown Sanitary District. The Cazenovia Wastewater Treatment Facility is designed for a fill and draw operation with three to four draw cycles. Chemical phosphorus removal was added in May of 2023. Sludge has not been removed from the lagoons for many years and there are no plans to remove sludge during the permit term.

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 June 24, 2024, this facility has been found to be in substantial compliance with their current permit.

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	0.87 MGD (2024 Average)	Influent: Representative grab samples shall be collected from the influent manhole (Cazenovia, Germantown Sanitary District and Ironton combined). An ultrasonic flow meter is located in the influent manhole.
002	0.065 MGD (March 2020 – April 2025 Average)	Effluent: Representative grab samples shall be collected from the effluent manhole, prior to discharge to the Little Baraboo River. An ultrasonic flow meter is located in the effluent manhole.
003	Lagoon System – Sludge was not removed	Representative composite grab lagoon sludge samples shall be taken from each lagoon and then combined for one sample. The sample must be completed in 2026. If a lagoon is scheduled for desludging, a composite grab sample of just that lagoon sludge may be needed prior to land spreading.

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	2/Week	Grab	
Suspended Solids, Total		mg/L	2/Week	Grab	

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.

Flow: The sample frequency for flow has been changed from "Continuous" to "Daily" and the sample type has been changed from "Total Daily" to "Continuous" for eDMR reporting purposes.

BOD and Total Suspended Solids (TSS): The sample frequency for these parameters has increased to align with effluent monitoring.

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: 002- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate	Daily Max	0.46 MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	2/Week	Grab	
BOD5, Total	Monthly Avg	30 mg/L	2/Week	Grab	
Suspended Solids, Total	Weekly Avg	45 mg/L	2/Week	Grab	
Suspended Solids, Total	Monthly Avg	30 mg/L	2/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Nitrogen, Ammonia Variable Limit		mg/L	2/Week	See Table	Look up the variable ammonia limit from the 'Variable Ammonia Limitation' table and report the variable limit in the Ammonia Variable Limit column on the eDMR.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	2/Week	Grab	Report the daily maximum Ammonia result in the Nitrogen, Ammonia (NH3-N) Total column of the eDMR. See Ammonia Limitation Section.
E. coli		#/100 ml	Weekly	Grab	Monitoring only, May - September 2026.
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Monitoring and limit effective May through September annually per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective May through September annually per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit section. Enter the result in the DMR on the last day of the

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					month.
Phosphorus, Total	Monthly Avg	1.0 mg/L	2/Week	Grab	This is an interim MDV limit effective throughout the permit term.
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' 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.
Chloride		mg/L	Weekly	Grab	Monitoring only, during periods of discharge, in 2029.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	Grab	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	Grab	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.

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.

Flow: The sample frequency for flow has been changed from “Continuous” to “Daily” and the sample type has been changed from “Total Daily” to “Continuous” for eDMR reporting purposes.

Total Suspended Solids (TSS): The TSS effluent limits have changed from 60 mg/L as a monthly average to 45 mg/L as a weekly average and 30 mg/L as a monthly average.

pH: The sample frequency has changed from “2/Week” to “5/Week”.

Disinfection & E. coli: At the end of the compliance schedule, disinfection requirements and E. coli limits of 126 #/100 ml as a monthly geometric mean that may not be exceeded and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply. Monitoring is required during May –

September in 2026. After the 2026 monitoring season, monitoring is not required until the limit becomes effective at the end of the compliance schedule.

Phosphorus MDV: The permittee has applied for a multi-discharger variance (MDV) for phosphorus for this permit term and the application has been approved by the Department. An MDV interim limit of 1.0 mg/L is effective upon permit reissuance and is effective for the entire permit term. The permittee is now required to report the total amount of phosphorus discharged in lbs/month and lbs/year. By March 1 of each year the permittee shall make a payment(s) to participating county(s) of $66.62 per pound of phosphorus discharged during the previous year in excess of the target value of 0.2 mg/L.

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 for the Cazenovia Wastewater Treatment Facility dated June 26, 2025, prepared by Sarah Luck, and used for this reissuance.

TSS: The TSS variance category limit, as described in s. NR 210.07(2), Wis. Adm. Code, is no longer applicable since significant improvements to treatment quality at the facility have occurred.

Disinfection & E. coli: Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020.

Section NR 102.04(5)(a), Wis. Adm. Code, states that all surface waters shall be suitable for recreational use and meet the E. coli criteria established to protect this use. Section NR 102.04(5)(b), Wis. Adm. Code, states that exceptions to the disinfection requirement can be made if the department determines, in accordance with the procedures specified in s. NR 210.06(3), Wis. Adm. Code, that disinfection is not required to meet water quality criteria. As part of the reissuance process, the requirements for disinfection were reviewed under s. NR 210.06(3), Wis. Adm. Code.

It was determined that the permittee is required to disinfect, during the following months, May – September. See WQBEL for further explanation.

Chlorine: If Cazenovia Wastewater Treatment Facility decides to use chlorination for disinfection, effluent limitation would be recommended to ensure proper operation of the de-chlorination system and would become effective May 01, 2030 with the E. coli limitations. Specifically, a daily maximum limit of 38 µg/L and a weekly average limit of 26 µg/L would be required. See the attached water quality-based effluent limits (WQBEL) memo for the Cazenovia Wastewater Treatment Facility dated June 26, 2025, for more information.

Phosphorus: Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorous. The final phosphorus WQBELs are 36 lb/yr expressed as an annual total and were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) for phosphorus 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. The interim effluent limit for total phosphorus is 1.0 mg/L as an average monthly limit. This limit became effective during the previous permit term and is the level currently achievable. The WQBEL memo includes a highest attainable condition interim limit of 0.60 mg/L, the permittee, in accordance with s. 283.16(6)(am), Wis. Stats., has certified that the interim limit of 1.0 mg/L is the highest attainable condition without a major facility upgrade. The 1.0 mg/L interim limit will be retained throughout the permit term.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the proposed 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.

Total Nitrogen Monitoring: The department has included effluent monitoring for Total Nitrogen through the authority under s. 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the "Guidance for Total Nitrogen Monitoring in Wastewater Permits" dated October 1, 2019.

PFOS and PFOA: NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), 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, the department has determined the permittee does not need to sample for PFOS or PFOA in the effluent as part of this permit reissuance. 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.

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 sample frequency for pH was increased from 2/Week to 5/Week per department guidance, specifically to align Cazenovia with facilities of similar size and to better capture effluent quality of this operational parameter.

Requirements in administrative code (NR 108, 205, 210, and 214 Wis. Adm. Code) and Sections 283.55, Wis. Stats., were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. The department has determined at this time that the aforementioned changes in monitoring frequency are warranted based on the size and type of the facility.

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)**
003	B	Liquid	Fecal Coliform	Injection or Incorporation	Land Application	N/A Lagoon System
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						

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)**
Is a priority pollutant scan required? **No, design flow is less than 5 MDG.** 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: 003- LAGOON SLUDGE

Sludge Management: The permittee shall contact the Department prior to recycling/disposing of any sludge. The permittee shall monitor for the following parameters during the second year of the permit, (**2026**). Analysis shall be submitted by **January 31, 2027**.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Nitrogen, Total Kjeldahl		Percent	Once	Composite	Once when land application occurs.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonium (NH4-N) Total		Percent	Once	Composite	Once when land application occurs.
Phosphorus, Total		Percent	Once	Composite	Once when land application occurs.
Phosphorus, Water Extractable		% of Tot P	Once	Composite	Once when land application occurs.
Potassium, Total Recoverable		Percent	Once	Composite	Once when land application occurs.
Radium 226 Dry Wt		pCi/g	Once	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	Once	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

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.

The parameter order has changed, Radium 226 and PCB are listed after List 2 – Nutrients.

List 2 Nutrients: List 2 Nutrients have been added should land application occur and for planning purposes.

Radium: The sample frequency has changed from “Annual” to “Once”.

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

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). Radium requirements are addressed in s. NR 204.07(3)(n).

List 2 Nutrient: Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in year 2 of the permit (2025). Results will assist in the determination of the acres needed for land application of sludge should it be necessary. The number of acres needed is also required for the Land Application Management Plan Schedule (see schedules for more information). List 2 nutrient sampling is required when land application occurs.

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 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" may 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.

Change in form submittal: In prior permit reissuances when it has been noted in the application that sludge would not be removed during the permit term, the department required sampling during the second year of the permit term and the sludge characteristic report (3400-049) would be generated only during that year. Due to moving to electronic submittal of forms via Switchboard, forms 3400-049 ("Characteristics Report"), 3400-052 ("Other Methods of Disposal") and 3400-055 ("Annual Land Application") will now be generated by the department and the permittee will be required to submit all three reports each year of the permit term. This change was adopted to provide the permittee flexibility because many lagoon desludging projects can be unexpected, are delayed or staggered over multiple years. Additionally, it is used to officially report that no land application of sludge has occurred, and annual submittal of the forms is required per the standard requirements section.

4 Schedules

4.1 Disinfection and Effluent Limitations for E. coli

Required Action	Due Date
Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.	11/21/2025
Report on Effluent Discharge: The permittee shall prepare and submit a report on effluent discharge. The report shall include an evaluation of collected effluent data and the facility's ability to comply with final E. coli limitations. The report shall state whether current treatment results in compliance with the final E. coli limitations. The permittee shall also submit a request to the department to evaluate the need for disinfection pursuant s. NR 210.06(3), Wis. Adm. Code. MODIFICATION - If the department determines, based on the information submitted in the Report on Effluent Discharges, that disinfection is not required pursuant s. NR 210.06(3), Wis. Adm. Code, the department will modify or revoke and reissue the permit in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to remove monitoring, the final E. coli limitation, and the remaining actions in this schedule of compliance. FACILITY PLAN - If the Report on Effluent Discharge concludes that current treatment does not results in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance.	10/31/2026
Submit Facility Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code for meeting disinfection requirements and complying with E. coli surface water limitations. The permittee may submit an abbreviated facility plan if the Department determines that the modifications	04/30/2027

are minor.	
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to meet disinfection requirements per s. NR 210.06(1), Wis. Adm Code, achieve compliance with final E. coli limitations, and a schedule for completing construction of the upgrades by the complete construction date specified below.	03/31/2028
Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	09/30/2028
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2029
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	03/31/2030
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2030

Explanation of Schedule

A compliance schedule is included in the permit to provide time for the permittee to submit plans and specs and install disinfection treatment for meeting effluent E. coli water quality-based effluent limits and disinfection requirements pursuant s. NR 210.06, Wis. Adm. Code. If the facility chooses to utilize chlorine for disinfection purposes, the permit may be modified to include total residual chlorine limits as suggested by the document, Water Quality-Based Effluent limits (WQBEL) memo for the Cazenovia Wastewater Treatment Facility dated June 26, 2025.

4.2 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 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.

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.	03/01/2026
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2027
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2028
Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2029
Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2030
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 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 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date

Land Application Management Plan Submittal: If the permittee proposes to land apply sludge, a management plan shall be submitted and approved by the Department. The management plan shall be consistent with the requirements of this permit, and s. NR 204.07, Wis. Adm. Code. At a minimum, the plan shall describe how the application rate has been calculated as well as how the sludge will be land applied and incorporated. Record keeping and tracking of site loadings shall also be described. Requests for land application site approvals shall also be included. The plan is due sixty (60) days prior to land applying.	

Explanation of Schedule

If the permittee wishes to land apply sludge from the lagoons during the permit term, they must submit a plan detailing how the sludge land application will comply with relevant code and permit requirements. The plan must be submitted at least 60 days prior to the sludge being applied.

4.5 Desludging Management Plan

Required Action	Due Date
Desludging Management Plan Submittal: The permittee shall submit a management plan for approval if removal of the sludge will occur during this permit term. At a minimum, the plan shall address how the sludge will be sampled, removed, transported, and disposed of. No desludging may occur unless approval by the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed. The plan is due sixty (60) days prior to desludging.	

Explanation of Schedule

If the lagoons are to be de-sludged during this permit term, a management plan is needed to show compliance with ch. NR 204, Wis. Adm. Code. A management plan needs to be submitted 60 days prior to desludging. At minimum, the plan should address how the sludge will be sampled, removed, transported, and disposed of. There are outlines available to assist in plan development.

Attachments

Water Quality Based Effluent Limits, dated June 26, 2025

MDV Conditional Approval Letter, dated November 22, 2024

MDV Evaluation Checklist, dated November 8, 2024

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance.

Prepared By: BetsyJo Howe, Wastewater Specialist **Date:** 8/7/2025

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: June 26, 2025

TO: BetsyJo Howe – SCR/Fitchburg

FROM: Sarah Luck – SCR/Fitchburg

SUBJECT: Water Quality-Based Effluent Limitations for the Cazenovia Wastewater Treatment Facility WPDES Permit No. WI-0031801-09-0

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 Cazenovia Wastewater Treatment Facility in Sauk County. This municipal wastewater treatment facility (WWTF) discharges to the Little Baraboo River, located in the Crossman Creek/Little Baraboo River Watershed (LW23) in the Lower Wisconsin River Basin. This discharge is included in the Wisconsin River TMDL as approved by EPA on April 26, 2019, with site-specific criteria approved by EPA on July 9, 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 002:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Annual Total	Footnotes
Flow Rate	0.46 MGD					1
BOD_5			45 mg/L	30 mg/L		1
TSS			45 mg/L	30 mg/L		2
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen Year-round	Variable					1,3
E. coli May – September				126 #/100 mL geometric mean		4
Chlorine, Total Residual	38 µg/L		24 µg/L			5
Chloride						6
Phosphorus LCA Interim Limit HAC Interim Limit Final TMDL				1.0 mg/L 0.60 mg/L	36 lbs/yr	7
TKN, Nitrate+Nitrite, and Total Nitrogen						8

Footnotes:

1. No changes from the current permit.
2. The TSS variance category limit of 60 mg/L as a monthly average, as described in s. NR 210.07(2), Wis. Adm. Code, is no longer applicable since significant improvements to treatment quality at the facility have occurred (addition of phosphorus removal chemical). TSS limits are now based on the Warm Water Sport Fish community of the immediate receiving water as described in s. NR 210.05(1)(b), Wis. Adm. Code.

3. The daily effluent pH will determine the daily maximum ammonia nitrogen limit per the table included below.

Effluent pH (s.u.)	Ammonia Limit (mg/L)	Effluent pH (s.u.)	Ammonia Limit (mg/L)	Effluent pH (s.u.)	Ammonia Limit (mg/L)
$6.0 < pH \leq 6.1$	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

4. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL. Since this is a new limit, a compliance schedule may be included in the permit.
5. If chlorine is used to comply with disinfection requirements, these limits would apply.
6. Monitoring at a frequency to ensure that a minimum of 11 samples are available at the next permit issuance.
7. Under the phosphorus MDV, a level currently achievable (LCA) interim limit of 1.0 mg/L should be effective upon permit reissuance. A compliance schedule may be included in the permit until the highest attainable condition (HAC) limit of 0.60 mg/L can be met. The final phosphorus mass limit is based on the Total Maximum Daily Load (TMDL) for the Wisconsin River Basin and is expressed as an annual total due to the non-continuous nature of the discharge.
8. 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. Code, 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).

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

Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code, are not required due to the non-continuous nature of the discharge.

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 (3) – Narrative, Site Map, and Thermal Table

PREPARED BY: Sarah Luck _____ Date: June 26, 2025

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 Engineer – WY/3

Attachment #1

Water Quality-Based Effluent Limitations for
Cazenovia Wastewater Treatment Facility

WPDES Permit No. WI-0031801-09-0

PART 1 – BACKGROUND INFORMATION

Facility Description

Cazenovia Wastewater Treatment Facility is a three-cell stabilization lagoon system which consists of a single primary cell of 5.1 million gallons capacity followed by two secondary cells of 2.2 million gallons each. Between the primary cell and secondary cells, ferric chloride is added to assist in phosphorus treatment. The facility presently treats wastewater from Cazenovia, Ironton, and Germantown Sanitary District. The Cazenovia Wastewater Treatment Facility is designed for fill and draw operation with three to four draw cycles. Chemical phosphorus removal was added in May 2023.

Attachment #2 is a map of the area showing the approximate location of Outfall 002.

Existing Permit Limitations

The current permit, which expired on December 31, 2024, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Annual Total	Footnotes
Flow Rate	0.46 MGD					-
BOD_5			45 mg/L	30 mg/L		1
TSS				60 mg/L		2
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen	Variable					3
Chloride						4
Phosphorus LCA HAC Final TMDL				 4.7 mg/L 1.0 mg/L	 36 lbs/yr	5
TKN, Nitrate+Nitrite, and Total Nitrogen						4

Footnotes:

1. These limits are based on the Warm Water Sport Fish community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code. These limitations are not being evaluated as part of this review since the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed.
2. The TSS limit is a variance limit according to s. NR 210.07(2), Wis. Adm. Code, where aerated lagoons and stabilization ponds are the principal treatment processes.

3. The daily effluent pH will determine the daily maximum ammonia nitrogen limit per the table below.

Effluent pH (s.u.)	Ammonia Limit (mg/L)	Effluent pH (s.u.)	Ammonia Limit (mg/L)	Effluent pH (s.u.)	Ammonia Limit (mg/L)
$6.0 < pH \leq 6.1$	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
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$6.6 < pH \leq 6.7$	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

4. Monitoring only.
5. The facility was covered under the multi-discharger variance (MDV), with a level currently achievable (LCA) interim limit of 4.7 mg/L that was effective upon permit reissuance. The highest attainable condition (HAC) limit of 1.0 mg/L went into effect January 1, 2024.

Receiving Water Information

- Name: Little Baraboo River
- Waterbody Identification Code (WBIC): 1282500
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply and recreational use.
- 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 USGS based on flow information at NE ¼ of Section 5, T12N-R3E one mile west of Ironton.

  7-Q_{10} = 6.4 cubic feet per second (cfs)
  7-Q_2 = 8.8 cfs
  Harmonic Mean Flow = 19.7 cfs using a drainage area of 60 mi^2 (the drainage area was estimated using the WPDES Viewer's Minimum Seven Day Streamflow layer)
  The Harmonic Mean has been estimated based on average flow and the 7-Q_{10} 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 = 181 mg/L as $CaCO_3$. Effluent hardness is used in place of receiving water because there is no hardness data available for the receiving water.
- % 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: Background concentrations for metals are not included because they do not impact the WQBEL recommendations. Background data for calculating effluent limitations for ammonia nitrogen are described later.
- Multiple dischargers: None.
- Impaired water status: The receiving water is not listed as impaired, but it is located within the Wisconsin River TMDL area to address phosphorus impairment in the watershed.

Effluent Information

- Flow rate:
  Design annual average = 0.035 MGD million gallons per day (MGD); however, for the purposes of this memo, an effluent flow rate of 0.46 MGD will be used in limit calculation since this is the permitted flow rate.
  For reference, the actual average flow from March 2020 through April 2025 was 0.065 MGD (excluding zero flow days).
- Hardness = 181 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in November 2023 which were reported on the permit application.
- Wastewater source: Domestic wastewater with no industrial contributors.
- Water supply: Municipality waterworks (Cazenovia /Ironton).
- Additives: Ferric chloride (phosphorus removal)
- Total Phosphorus Wasteload Allocation: 36 lbs/year (Appendix K of the TMDL document)
- 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)
11/13/23	2.74	11/25/23	3.10	12/07/23	2.89
11/16/23	2.76	11/28/23	2.94	12/11/23	3.29
11/19/23	2.61	12/01/23	3.16	01/02/24	5.85
11/22/23	3.35	12/04/23	4.10		
1-day P_{99} = 6.06 µg/L					
4-day P_{99} = 4.56 µg/L					

"<" means that the pollutant was not detected at the indicated limit of detection. The mean concentration was calculated using zero in place of the non-detected results.

Chloride Effluent Data

Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)
07/25/23	104	08/30/23	115	11/28/23	130
07/26/23	105	08/31/23	125	11/29/23	134
08/01/23	108	09/05/23	119	12/05/23	139
08/08/23	104	09/06/23	119	12/06/23	134
08/15/23	107	11/14/23	128		
08/23/23	110	11/15/23	126		
1-day P_{99} = 150 mg/L					
4-day P_{99} = 134 mg/L					

The following table presents the average concentrations and loadings at Outfall 002 from March 2020 through April 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	Average Mass Discharged
BOD_5	10 mg/L*	
TSS	13 mg/L	
pH field	7.6 s.u.	
Ammonia Nitrogen	4.52 mg/L	
Phosphorus	2.34 mg/L	91 lbs/year

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

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 Cazenovia 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 and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)
RECEIVING WATER FLOW = 5.1 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	MAX. EFFL. LIMIT*	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Chlorine		19.0	38.1	7.61			
Arsenic		340	679.6	135.9	<0.77		
Cadmium	181	20.3	40.6	8.1	<0.084		
Chromium	181	2926	5851.5	1170	<0.70		
Copper	181	27.1	54.2			6.06	5.85
Lead	181	189	378.5	75.7	<1.08		
Nickel	181	774	1547.1	309	1.58		
Zinc	181	202	403.7	80.7	<26		
Chloride (mg/L)		757	1514.0			150	139

* 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 = 1.6 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD.* mg/L	CTC	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Chlorine		7.28	23.65	4.73		
Arsenic		152.2	494	98.9	<0.77	
Cadmium	175	3.82	12.41	2.5	<0.084	
Chromium	181	214.77	698	139.5	<0.70	
Copper	181	17.20	55.9			4.56
Lead	181	49.68	161.4	32.3	<1.08	
Nickel	181	86.22	280	56.0	1.58	
Zinc	181	202.25	657	131.4	<26	
Chloride (mg/L)		395	1283			134

* 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.

Attachment #1

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 4.9 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370	2927	585.4	<0.084
Chromium (+3)	3818000	30202455	6040491	<0.70
Lead	140	1107	221.5	<1.08
Nickel	43000	340153	68031	1.58

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 4.9 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3	105.2	21.04	<0.77

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.**

Chloride – Considering available effluent data from the current permit term (n=16, July 2023 through December 2023), the 1-day P_{99} chloride concentration is 150 mg/L, and the 4-day P_{99} of effluent data is 134 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 a minimum of 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 Cazenovia 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 shows a single sample was collected. The sample result was within expected analytical ranges and well below the 17 mg/kg level. The concentration in the sludge on 08/17/2021 was less than 0.083 mg/kg. Therefore, **no mercury monitoring is recommended at Outfall 002**.

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based on the type of discharge, the effluent flow rate, and lack of indirect dischargers, **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 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 limits. These limits are re-evaluated at this time due to the following changes:

- 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:

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

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 219 sample results were reported from March 2020 through April 2025. The maximum reported value was 7.9 s.u. (Standard pH Units). The effluent pH was 7.9 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 8.0 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 8.0 s.u. Therefore, a value of 7.9 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 7.9 s.u. into the equation above yields an ATC = 10.13 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	20
1-Q	962

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

The current permit has variable daily maximum effluent limits based on effluent pH, as shown in the table below.

Daily Maximum Ammonia Nitrogen Limits – WWSF, WWFF & LFF

Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 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 since those limits relate to the assimilative capacity of the receiving water. These limits are being recalculated using the permitted flow rate of 0.46 MGD.

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 (ºC) of the receiving water – (Early Life Stages Present), or
T = the maximum of the actual temperature (ºC) and 7 - (Early Life Stages Absent)

Section NR 106.32 (3), Wis. Adm. Code, provides a mechanism for less stringent weekly average and monthly average effluent limitations when early life stages (ELS) of critical organisms are absent from the receiving water. This applies only when the water temperature is less than 14.5 ºC, during the winter and spring months. Burbot, an early spawning species, are not believed to be present in the Little Baraboo River. So "ELS Absent" criteria apply from October through March, and "ELS Present" criteria will apply from April through September for a warm water sport fish classification.

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

Weekly and Monthly Ammonia Nitrogen Limits – WWSF

		Spring	Summer	Winter
		April & May	June – Sept.	Oct. - March
Effluent Flow	Qe (MGD)	0.46	0.46	0.46
Background Information	7-Q_{10} (cfs)	6.4	6.4	6.4
	7-Q_2 (cfs)	8.8	8.8	8.8
	Ammonia (mg/L)	0.06	0.06	0.06
	Temperature (°C)	14	21	10
	pH (s.u.)	8.03	8.04	8.05
	% of Flow used	50	100	25
	Reference Weekly Flow (cfs)	3.2	6.4	1.6
	Reference Monthly Flow (cfs)	3.7	7.5	1.9
Criteria mg/L	4-day Chronic			
	Early Life Stages Present	**5.82**	**3.89**	5.65
	Early Life Stages Absent	5.85	3.89	**7.57**
	30-day Chronic			
	Early Life Stages Present	**2.33**	**1.56**	2.26
	Early Life Stages Absent	2.34	1.56	**3.03**
Effluent Limitations mg/L	Weekly Average			
	Early Life Stages Present	**32**	**38**	
	Early Life Stages Absent			**24**
	Monthly Average			
	Early Life Stages Present	**14**	**17**	8
	Early Life Stages Absent			**11**

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from March 2020 through April 2025.

Ammonia Nitrogen Effluent Data

	April & May (mg/L)	June – Sept. (mg/L)	Oct. – March (mg/L)
1-day P_{99}	21.5	16.7	13.9
4-day P_{99}	13.7	9.47	7.63
30-day P_{99}	9.69	5.75	4.35
Mean	7.82	4.13	2.96
Std	4.03	3.34	2.81
Sample size	44	109	66
Range	0.95 - 17.4	0.057 - 12.2	0.097 - 13.3

Reasonable Potential

The need to include ammonia limits in the Cazenovia Wastewater Treatment Facility permit is determined by calculating 99th upper percentile (or P_{99}) values for ammonia and comparing those to the calculated limits. Based on this comparison, **a daily maximum limit is required in April – May**. However, since the permit currently has a daily maximum limit year-round, **the limit 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)
Year-round	pH-dependent	-	-

Additional limits to meet the requirements in s. NR 106.07, Wis. Adm Code, are not required due to the non-continuous nature of the discharge.

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.

For facilities with a detention time of at least 180 days, the resulting discharged effluent is thought to not pose a risk to human and animal heath, as described in s. NR 210.06(3)(h), Wis. Adm. Code. The maximum 180-day rolling average flow rate for Cazenovia Wastewater Treatment Facility is 0.072 MGD (March 2020 – April 2025). The volumetric capacity of the lagoons is approximately 9.5 million gallons (MG). The estimated shortest detention time for the facility is approximately 132 days (9.5 MG / 0.072 MGD) and is less than the 180-day minimum. Therefore, **disinfection is required May through September.** Since this is a new limit, a compliance schedule may be included in the permit.

Total Residual Chlorine – **If Cazenovia Wastewater Treatment Facility decides to use chlorination for disinfection, effluent limitations would be recommended to assure proper operation of the de-chlorination system.** Section NR 210.06(2)(b), Wis. Adm. Code, states, "When chlorine is used for disinfection, the daily maximum total residual chlorine concentration of the discharge may not exceed 0.10 mg/L." Because the WQBELs are more restrictive, they are recommended instead. Specifically, **a**

daily maximum limit of 38 µg/L would be required if Cazenovia decides to use chlorination for disinfection. Due to revisions to s. NR 106.07(2), Wis. Adm. Code, mass limitations are no longer required. The calculated **weekly average effluent limitation of 24 µg/L would also be included in the permit because it is more restrictive than the daily maximum limit.** A monthly average limit to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code, is not required due to the non-continuous nature of the discharge.

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 Cazenovia Wastewater Treatment Facility has a phosphorus limit of 1.0 mg/L in effect, 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)
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 (*May 2020). The wasteload allocations (WLA) that implement site-specific criteria for Lakes Petenwell, Castle Rock, and Wisconsin are found in Appendix K of the *Total Maximum Daily Loads for Total Phosphorus in the Wisconsin River Basin* (WRB TMDL) report, dated April 26, 2019, and are expressed as maximum annual loads (lbs/year) and maximum daily loads (lbs/day). The WLA that implement statewide criteria found in Appendix J of the TMDL report are no longer applicable following approval of these site-specific criteria. The daily WLAs in the WRB TMDL equals the annual WLA divided by the number of days in the year. Therefore, the daily WLA is an annual average. Since the derivation of daily WLAs from annual WLAs does not take effluent variability or monitoring frequency into consideration, maximum daily WLAs from the WRB TMDL should not be used directly as permit effluent limits.

For non-continuous discharges, methods for converting WLAs into permit limits should be determined on a case-by-case basis. For example, some discharges do not occur continuously and often vary from year to year, depending on weather conditions or production processes. In these cases, it may be appropriate to express limits by season or as a total annual amount. In many cases, using shorter term limits (daily, monthly) might have the effect of unduly limiting operational flexibility and, since TMDLs are required to be protective of critical conditions, a seasonal or annual limit would be consistent with the TMDL and protective of water quality. In the case of Cazenovia Wastewater Treatment Facility, **it is recommended the TMDL allocation of 36 lbs/year is expressed as a total annual.**

The WRB TMDL establishes TP wasteload allocations to reduce the loading in the entire watershed including WLAs to meet water quality standards for tributaries to the Wisconsin River. Therefore, WLA-based WQBELs are protective of immediate receiving waters and total phosphorus WQBELs derived according to s. NR 217.13, Wis. Adm. Code, are not required.

Effluent Data
The following table summarizes effluent total phosphorus monitoring data from March 2020 through

April 2025. Chemical phosphorus removal began in May 2023.

Total Phosphorus Effluent Data

	March 2020 through April 2025 **(mg/L)**	**May 2023 through April 2025** (Chemical phosphorus removal implemented) **(mg/L)**
1-day P_{99}	5.90	4.02
4-day P_{99}	3.87	2.40
30-day P_{99}	2.83	1.59
Mean	2.34	1.22
Std	1.08	0.78
Sample size	219	60
Range	0.0856 - 4.56	0.0856 - 3.26

The table below shows the total annual phosphorus discharge reported by the facility from 2021 through 2024. For reference, the TMDL wasteload allocation is 36 lbs/yr.

Total Annual Phosphorus Effluent Data

Year	(lbs/yr)
2021	161.91
2022	168.64
2023	60.66
2024	49.36

Multi-Discharge Variance Interim Limit

Cazenovia Wastewater Treatment Facility was covered under the phosphorus multi-discharger variance (MDV) during the previous permit term. Conditions of the MDV require the facility to comply with an interim phosphorus limit in lieu of meeting the final WQBEL. The recommended interim limit during the second permit under MDV approval pursuant to s. 283.16 (6) (a), Wis. Stats., is 0.60 mg/L as a monthly average. A review of effluent phosphorus data indicates that Cazenovia Wastewater Treatment Facility may need a compliance schedule to meet this interim limit, but **compliance with 0.60 mg/L shall be no later than the end of the reissued permit.**

The current permit had a compliance schedule to meet the limit of 1.0 mg/L by January 1, 2024. **Therefore, 1.0 mg/L is the level currently achievable (LCA) for the discharge.** A limit of 1.0 mg/L as a monthly average should not be exceeded during the compliance schedule.

PART 6 – TOTAL SUSPENDED SOLIDS

The existing permit includes a variance limit for total suspended solids (TSS) of 60 mg/L as a monthly average in accordance with s. NR 210.07(2), Wis. Adm. Code, where aerated lagoons and stabilization ponds are the principal treatment processes. However, since Cazenovia Wastewater Treatment Facility is now using a phosphorus removal chemical (ferric chloride), the facility is no longer eligible for the variance limit since phosphorus removal chemicals will also improve (decrease) TSS because the

chemical helps solids, including algae, settle.

It is recommended that TSS limits be set equal to 45 mg/L as a weekly average and 30 mg/L as a monthly average, equal to the current BOD_5 limits and in accordance with categorical effluent limitations listed in s. NR 210.05(1), Wis. Adm. Code.

Effluent Data
The following table summarizes effluent TSS monitoring data from March 2020 through April 2025.

TSS Effluent Data

	Concentration (mg/L)
1-day P_{99}	54
4-day P_{99}	30
30-day P_{99}	18
Mean	13
Std	11
Sample size	219
Range	1 - 51

Based on a preliminary review of the data, it does not appear that a compliance schedule is needed to meet the new TSS limits of 45 mg/L as a weekly average and 30 mg/L as a monthly average.

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 March 2020 through April 2025.

Attachment #1

Temperature Effluent Data & Limits by Month

Month	Calculated Effluent Limit	
	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	NA*	120
FEB	-	120
MAR	-	120
APR	114	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.
"-" denotes that there was no effluent flow during the permit term in which to calculate a limit.

At temperatures above approximately 103°F, conventional biological treatment systems do not function properly and experience upsets. There is no indication that this has ever occurred in this treatment system. Therefore, there is no reasonable potential for the discharge to exceed the calculated limits. **No monitoring or effluent limits are recommended for temperature.**

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 *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 31%**, 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:

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

Where:

Q_e = annual average flow = 0.46 MGD = 0.712 cfs
f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 6.4 cfs ÷ 4 = 1.6 cfs

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.

WET Checklist Summary

	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 31% **0 Points**
Historical Data	No data. **5 Points**	No data. **5 Points**
Effluent Variability	Little variability, no upsets or significant violations, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	WWSF **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, copper, and nickel detected. Additional Compounds of Concern: None. **3 Points**	No reasonable potential for limits based on CTC. Chloride, copper, and nickel detected. Additional Compounds of Concern: None. **3 Points**
Additives	No biocides and one water quality conditioner (ferric chloride) added. Permittee has proper P chemical SOP 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**

	Acute	Chronic
Recommended Monitoring Frequency (from Checklist):	None.	None.
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

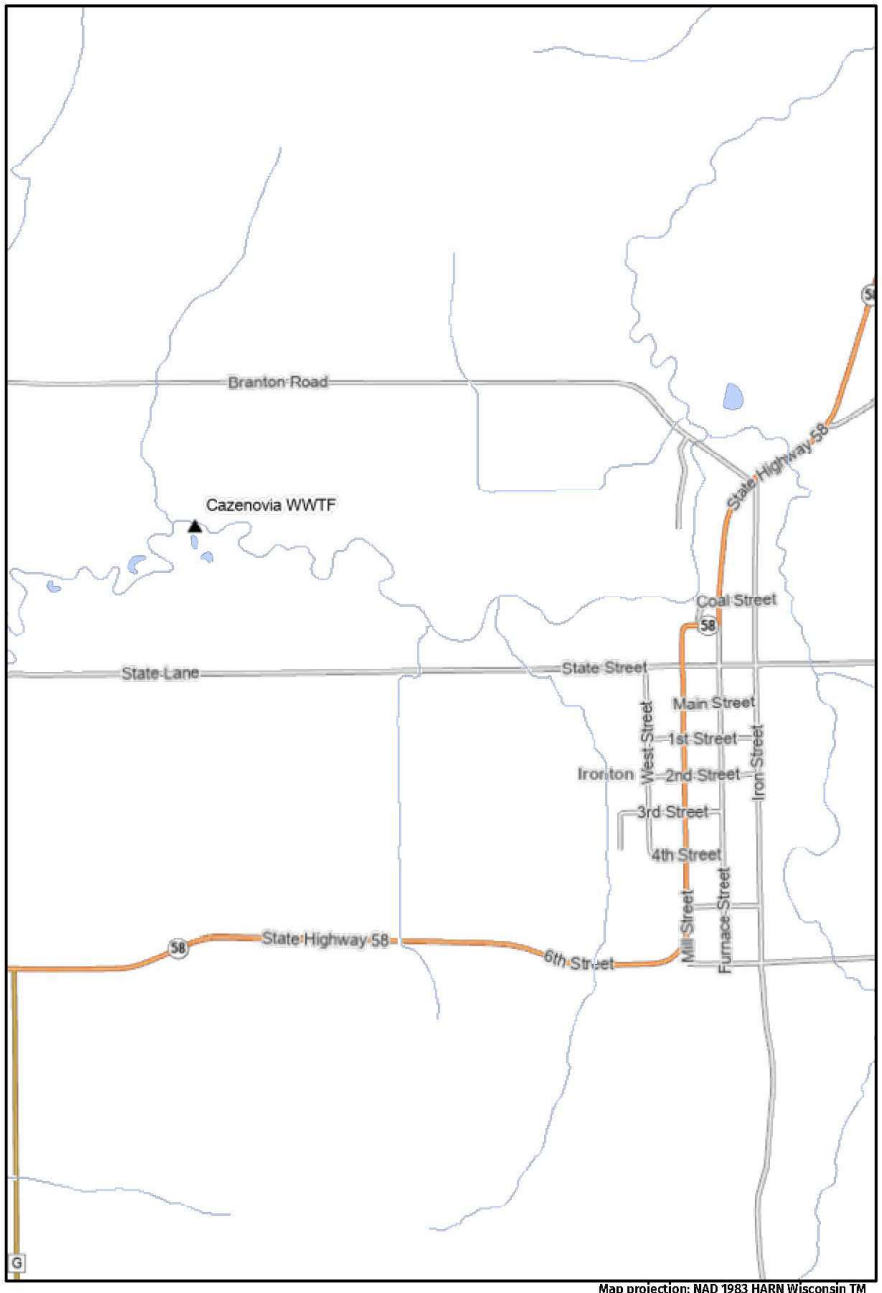
- **No WET testing is required** because information related to the discharge indicates the potential for effluent toxicity is believed to be low.

Attachment #2

Site Map

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Cazenovia Wastewater Treatment Facility



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
- City or Village
- County Boundaries

Major Roads
- State Highway

County and Local Roads
- County HWY
- Local Road

Notes:

No longer to scale.

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

Map projection: NAD 1983 HARN Wisconsin TM

Map: 0 1,000 2,000 Feet / 0 400 800 Meters

N

This map is a product generated by a DNR web mapping application.

This map is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The user is solely responsible for verifying the accuracy of information before using for any purpose. By using this product for any purpose user agrees to be bound by all disclaimers found here: https://dnr.wisconsin.gov/legal

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Attachment #3

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Cazenovia WWTF		**7-Q_{10}:**	6.4	cfs		
Outfall(s):	002		**Dilution:**	25%		**Start:**	03/30/20
Date Prepared:	5/30/2025		**f:**	0		**End:**	04/09/25
Design Flow (Qe):	0.46	MGD	**Stream type:**	Small warm water sport or forage fis			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	2.2	: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	6.40	0.086	0.090	0			-	120
FEB	34	50	76	6.40			0			-	120
MAR	38	52	77	6.40			0			-	120
APR	48	55	79	6.40	0.122	0.122	0			114	120
MAY	58	65	82	6.40	0.084	0.090	0			-	120
JUN	66	76	84	6.40	0.089	0.097	0			-	120
JUL	69	81	85	6.40	0.099	0.100	0			-	120
AUG	67	81	84	6.40	0.098	0.100	0			-	120
SEP	60	73	82	6.40	0.091	0.099	0			-	120
OCT	50	61	80	6.40	0.098	0.100	0			-	120
NOV	40	49	77	6.40	0.088	0.099	0			-	120
DEC	35	49	76	6.40	0.089	0.097	0			-	120

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WISCONSIN DEPT. OF NATURAL RESOURCES

11/22/2024

Rita Bulin
PO Box 151
Cazenovia, WI 53924

Subject: Conditional approval of a multi-discharger phosphorus variance
Receiving Stream: Little Baraboo River in Sauk County
Permittee: Village of Cazenovia, WPDES WI-0031801

Dear Ms. Bulin:

In accordance with s. 283.16 of the Wisconsin Statutes, you have requested coverage under Wisconsin's multi-discharger phosphorus variance for the Village of Cazenovia Wastewater Treatment Facility in an application dated 7/19/2024. 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 Tim Stockman, Davy Engineering
Betsyjo Howe, WDNR
Tanner Connors, WDNR
Tim Elkins, EPA Region 5
Micah Bennett, 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

Village of Cazenovia

WPDES Permit Number	County
WI- 0 | 0 | 3 | 1 | 8 | 0 | 1	Sauk

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:	3	*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?	
002	2.36	◉ 30-day P99 ○ Other, specify:	○ Yes ◉ No, why not: Application used smaller data subset	*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?

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

Provide Rationale:

The past three years' total phosphorus effluent data (10/1/2021 - 9/30/2024, n=116) yield a 30-day P99 value of 2.36 mg/L. Effluent quality is highly variable due to shallow stabilization ponds and intermittent discharge. Monthly averages over the past year have generally achieved the interim limit of 1.0 mg/L (excepting one exceedance in July), but not reliably lower.

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:	$ 7,500,000.00 MDV Application / Facility Plan - Cost for a new facility w/tertiary process	*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:

A final compliance alternatives plan was prepared by Davy Engineering on behalf of Cazenovia in 2018. This document details efforts for addressing a low-level phosphorus limit. Alternatives to the WQBEL such as water reuse, alternative discharge location, and spray irrigation are evaluated but not deemed feasible. Compliance alternatives of water quality trading and adaptive management were deemed not practical or viable due to a lack of available projects. Since 2018, Cazenovia has worked towards compliance via water quality trading by identifying a number of trading partners with in-depth project planning occurring, including authoring of a draft MDV watershed plan. There is still a shortfall in available offset, however. Over the past permit term, the facility has attempted to optimize chemical feed to the stabilization ponds, but has encountered challenges due to the shallow ponds not being conducive to phosphorus treatment.

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.*

Save

Comments on economic demonstration:

The final compliance alternatives plan provides site-specific cost estimates for construction options to meet the WQBEL include a new mechanical EBNR (Activated Sludge Oxidation Ditch) facility with Effluent Filtration or New MBR (Membrane BioReactor) facility. The lowest cost option for a new facility is $8,618,500. This value is much higher than the statewide estimate (EIA Addendum, Appendix G) for installation of a chemical feed system followed by tertiary filtration at Cazenovia. Estimates are $924,448.00 (capital costs) and $72,270 (annual O&M). However, due to the poor performance of the stablization ponds, it is reasonable to assume that a new facility is needed, which goes beyond the assumptions of the EIA cost estimate. Captial costs were estimated at $6,873,200.00 with annual O&M increase at $129,470.00. Assuming financing with a CWFP loan at 2.2%, divided amongst 595 households, results in a per user increase of $ $909.63 per year. Current weighted average sewer rates for the service area are $270.89 per year, and future rates would be $1,180.52 per year. This value is 2.07% of the weighted MHI of $56,949. With service area in both Sauk and Richland counties, with secondary indicator scores of 4 and 3, respectively, sewer rates need to be greater than 1% to meet the primary screener. Cazenovia has met the primary screening threshold for economic eligibility.

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:

Save

Section 5. Payment to the County(ies)

24. At this time, the appropriate per pound payment is: $ 64.75

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

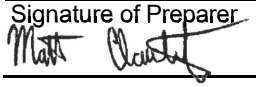
Section 6. Determination

Based on the available information, the MDV application is:

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

Additional Justification (if needed):
MDV application did not provide median household income values. DNR used SFY 2025 values for evaluation.

Certification

Preparer Name	Title	
Matt Claucherty	Water Resources Management Specialist	
Signature of Preparer 		Date 11/8/2024

A copy of this completed checklist should be saved in SWAMP, and a notification of the decision should be sent to the Phosphorus Implementation Coordinator.

Save