Permit Fact Sheet

General Information

Permit Number	WI-0020311-11-0
Permittee Name and Address	CITY OF MELLEN PO BOX 708, 102 E BENNETT ST, MELLEN, WI 54546
Permitted Facility Name and Address	City of Mellen 500 LAGOON DRIVE, MELLEN, WI
Permit Term	April 01, 2026 to March 31, 2031
Discharge Location	NW ¼ Section 6, T44N, R02W (east bank of the Bad River, behind Tri-M Sanitary)
Receiving Water	Bad River within the Upper Bad River Watershed in the Lake Superior Drainage Basin in Ashland County
Stream Flow ($Q_{7,10}$)	5.4 cfs
Stream Classification	Cold Water (CW) community, Exceptional Resource Water (ERW), non-public water supply and recreational use; within the ceded territory.
Wild Rice Impacts *(no specific wild rice standards exist at this time)*	No impacts identified at this location. Wild rice beds are documented downstream within the Bad River Slough (associated with the mouth of the river approximately 43.5 river miles downstream). The conclusion of no impact is based on low effluent volumes in comparison to the river volume, the distance to wild rice water and the slough is biologically productive with vast beds of wild rice (Manomin) which has been recognized as a Wetland of International Importance (tribal website). Evaluation completed August 2025.
Discharge Type	Existing; Continuous
Annual Average Design Flow	0.207 MGD
Industrial or Commercial Contributors	None
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; D - Disinfection; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The City of Mellen Wastewater Treatment Facility serves a population of approximately 700 with no significant industrial contributors. Treatment consists of two lagoons operated in series. The first lagoon is aerated and the second lagoon consists of aerated and quiescent sections separated by a baffle curtain. Wastewater is seasonally disinfected via UV light during May – September. Effluent is discharged on a continuous basis via Outfall 002 to the east bank of the Bad River.

Substantial Compliance Determination

Enforcement During Last Permit: Chronic effluent limit violations have been occurring since the facility upgrade (1/2018) and are ongoing; therefore, the City was not in compliance with the current permit at the time of the last

inspection (11/4/2024). Effluent limit violations for CBOD occurred during most years of the current permit term, particularly during warmer periods, and periodically for bacteria (2021 and 2022) and TSS (2022 and 2024).

During the current permit term, four Notices of Noncompliance (NONs) were issued on 11/2/2021, 10/12/2022, 8/29/2023, and 10/16/2024. Enforcement action by the Department was elevated, including a combined compliance inspection and enforcement meeting (on 11/4/2024) with additional compliance staff following the 10/16/2024 NON.

The City has been cooperatively working with the Department on corrective actions to address any potential causes of the chronic effluent violations. Actions identified in the 11/19/2024 Compliance Meeting Summary and Compliance Inspection Report have been or are currently being addressed as part of the enforcement process.

After a desktop review on 8/4/2025 of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on 11/4/2024, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Eric de Venecia, Wastewater Engineer, on 8/4/2025.

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	0.127 MGD (4/1/20 – 6/30/25)	Representative samples shall be collected from the influent to Cell #1.
002	0.14 MGD (4/1/20 – 6/30/25)	Representative samples shall be collected in the control building after the disinfection unit prior to discharge to the Bad River.
004	N/A – sludge was last removed in 2017; there are no plans to remove sludge during the permit term	Representative samples shall be collected from the accumulated sludge in the ponds at various locations and depths that are composited for analysis.
102	N/A – no flow monitoring required	At least one field blank shall be collected for each day a sample of mercury is collected from Outfall 002. The purpose of the field blank is to determine if the field or sample transporting procedures and environment have contaminated the sample.

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	Weekly	24-Hr Flow Prop Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
CBOD5		mg/L	Weekly	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	Weekly	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	See the Mercury Monitoring permit section.

1.1.1 Changes from Previous Permit

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

- The Flow Rate sample frequency has been changed from Continuous to Daily for eDMR reporting purposes.
- Where appropriate, the sample type was changed from Grab to 24-Hr Flow Prop Comp to be consistent with how sampling is conducted.

1.1.2 Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD_5 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 In-plant - Monitoring and Limitations

2.1 Sample Point Number: 102- FIELD BLANK

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Quarterly	Blank	See the Mercury Monitoring permit section.

2.1.1 Changes from Previous Permit

In-plant limitations and monitoring requirements were evaluated for this permit term and no changes were required.

2.1.2 Explanation of Limits and Monitoring Requirements

Mercury Field Blank – Monitoring is included in the permit pursuant to s. NR 106.145, Wis. Adm. Code. Field blanks must meet the requirements under s. NR 106.145(9) and (10), Wis. Adm. Code. The permittee shall collect a mercury field blank for each set of mercury samples (a set of samples may include a combination of influent, effluent or other samples all collected on the same day). Field blanks are required to verify a sample has not been contaminated during collection, transportation or analysis.

3 Surface Water - Monitoring and Limitations

3.1 Sample Point Number: 002- SURFACE WATER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
CBOD5	Monthly Avg	25 mg/L	Weekly	24-Hr Flow Prop Comp	
CBOD5	Weekly Avg	40 mg/L	Weekly	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	Weekly	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	Weekly	24-Hr Flow Prop Comp	
pH Field	Daily Max	9.0 su	Weekly	Grab	
pH Field	Daily Min	6.0 su	Weekly	Grab	
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Monitoring and limit effective May through September annually.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective May through September annually. See the E. coli Percent Limit permit section. Enter the result in the eDMR on the last day of the month.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	32 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective April through May.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	89 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective June through September.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	37 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective October through March.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	47 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective April through May.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	108 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective June through September.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	54 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective October through March.
Nitrogen, Ammonia	Daily Max -	mg/L	Weekly	24-Hr Flow	Limit effective year-round.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
(NH3-N) Total	Variable			Prop Comp	See the Daily Maximum Ammonia Nitrogen (NH3-N) Limits permit section.
Phosphorus, Total	Monthly Avg	4.9 mg/L	Weekly	24-Hr Flow Prop Comp	Interim Limit. Limit effective at permit issuance. See the Phosphorus permit subsections and the WQBELs for Total Phosphorus Schedule.
Phosphorus, Total		lbs/day	Weekly	Calculated	Monitoring only until final limits become effective per the Schedule. See the Phosphorus permit subsections and the WQBELs for Total Phosphorus Schedule.
Mercury, Total Recoverable	Daily Max	5.9 ng/L	Quarterly	Grab	Alternative Effluent Limit. See the Mercury Monitoring permit section and the Mercury Pollutant Minimization Program Schedule.
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring only January-December 2029.
Temperature		deg F	Monthly	Grab	Monitoring only January-December 2029. See the Effluent Temperature Monitoring permit section.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See the Nitrogen Series Monitoring permit section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See the Nitrogen Series Monitoring permit section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Annual in rotating quarters. See the Nitrogen Series Monitoring permit section. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See the Whole Effluent Toxicity (WET) Testing permit section.
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See the Whole Effluent Toxicity (WET) Testing permit section.

3.1.1 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.

- The Flow Rate sample frequency has been changed from Continuous to Daily for eDMR reporting purposes.
- Fecal Coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits.
- Addition of an interim limit for Phosphorus including a schedule for complying with the final effluent limits.
- Decreased the mercury variance alternative effluent limit to 5.9 ng/L as a daily maximum (from 6.5 ng/L) and updated pollutant minimization program measures (PMPs) throughout the permit term.
- Addition of monthly effluent monitoring for one year (Jan-Dec 2029) for chloride and temperature.
- Addition of annual Total Nitrogen (TKN, NO_2+NO_3 and Total N) effluent monitoring, in rotating quarters, throughout the permit term.
- Addition of annual Acute and Chronic Whole Effluent Toxicity (WET) testing, in rotating quarters, throughout the permit term.
- Removed Sulfate effluent monitoring.

3.1.2 Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the Water Quality-Based Effluent Limitations (WQBEL) Memo, by Michael Polkinghorn, Water Resources Engineer, dated July 2, 2025.

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.

Expression of Limits – In accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code, limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. Minor changes have been made to the limits for ammonia nitrogen.

E. coli – E. coli effluent 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 are effective at permit reissuance. 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. As part of the reissuance process, the requirements for disinfection were reviewed under s. NR 210.06(3), Wis. Adm. Code.

Phosphorus – Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters and was revised on December 1, 2010, with the addition of Subchapter III, which includes WQBELs for phosphorus, based upon criteria contained in Chapter NR 102. WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards.

In accordance with ch. NR 217.13(2), Wis. Adm. Code, the applicable WQBELs are 1.8 mg/L and 3.2 lbs/day expressed as monthly averages, in order to be protective of the receiving water. Chapter 217.14(2), Wis. Adm. Code, requires phosphorus concentration WQBELs to be expressed as monthly average limits.

A 7-year compliance schedule (extending beyond the length of this permit term) is incorporated in the permit, as provided under s. NR 217.17(2), Wis. Adm. Code. The final phosphorus WQBELs are scheduled to take effect on April 1, 2033, unless the Department modifies, revokes and reissues, or reissues the permit to incorporate a revised limit prior to that time. Such revision may occur to implement a TMDL, or if the permittee submits either: a Watershed Adaptive Management Request Form with a watershed adaptive management plan; an application for water quality trading; an application for a variance; or new information or additional data that supports a recalculation of the WQBELs.

Consistent with s. NR 217.17(3)(c), Wis. Adm. Code, and the "Implementation Guidance for Wisconsin's Phosphorus Water Quality Standards", an interim effluent limit must be applied until the final phosphorus limits become effective. The Department has determined that an interim limit of 4.9 mg/L (as a monthly average) is appropriate in this situation. The interim limit becomes effective upon permit issuance, applies for the duration of the permit term, and will continue to apply until the final limits become effective.

Mercury – Requirements for mercury are included in s. NR 106.145, Wis. Adm. Code. (See http://dnr.wi.gov/topic/Mercury/). The City of Mellen applied for a mercury variance, under the provisions of s. NR 106.145, Wis. Adm. Code, with its application for permit reissuance. The previous permit also included a mercury variance. The Department reviewed Mellen's application for a mercury variance. The information supplied in the application supports the request. The proposed permit requires the permittee to implement a Mercury Pollutant Minimization Program (PMP) and submit annual progress reports each year by March 31st.

The Department concludes that the City of Mellen is qualified for a variance from the water quality standard for mercury and proposes reissuance of this permit with the proposed variance.

Chloride – Monitoring for one year is included to determine the need for limits at the next permit issuance.

Temperature – Monitoring for one year is included to determine the need for limits at the next permit issuance.

Total Nitrogen Monitoring (TKN, NO_2+NO_3, and Total N) – The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under s. 283.55(1)(e), Wis. Stats. Testing is required during the following quarters: October – December 2026; July – September 2027; April – June 2028; January – March 2029; and October – December 2030.

Acute and Chronic WET – Testing is required during the following quarters: October – December 2026; July – September 2027; April – June 2028; January – March 2029; and October – December 2030.

Sulfate – In the Bad River Band of the Lake Superior Tribe of Chippewa Indians Water Quality Standards (WQS), effective July 6, 2011, there is a narrative criterion for sulfate that is applicable to the Bad River (provision E.6.ii.c.). Based on monitoring results, the Department made a determination on whether a numeric limit needed to be derived and incorporated into the permit to ensure the narrative criterion is being met. All available effluent data from the current permit term was considered in determining the need for a numeric limit and continued sulfate monitoring. The

effluent concentrations for sulfate have been significantly below the calculated WQBELs; therefore, sulfate monitoring has been removed. The need for sulfate monitoring may be reevaluated at the next permit reissuance.

4 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
004	B	Liquid	Fecal Coliform	N/A – sludge was last removed in 2017; there are no plans to remove sludge during the permit term.		
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.						

4.1 Sample Point Number: 004- LAGOON SLUDGE

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	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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	Per Application	Composite	
Nitrogen, Ammonia (NH3-N) Total		Percent	Per Application	Composite	
Phosphorus, Total		Percent	Per Application	Composite	
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	
Potassium, Total Recoverable		Percent	Per Application	Composite	
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.

4.1.1 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.

- The year in which sludge monitoring is required has been updated to 2027.
- Because it's recommended that List 2 (Nutrients) parameters are monitored at the same time as the List 1 monitoring, List 2 monitoring has been added.
- Addition of PFAS (PFOA + PFOS) monitoring, once during the permit term, pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

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

List 2 Nutrient monitoring – 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 (2027). 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 Sludge Management Schedule (see Schedules for more information).

PFAS – The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a 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.

5 Schedules

5.1 Mercury Pollutant Minimization Program

As a condition of the variance to the water quality based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
Annual Mercury Progress Reports: Submit an annual mercury progress report related to the pollutant minimization activities for the previous year. The annual mercury progress report shall: Indicate which mercury pollutant minimization activities or activities outlined in the Pollutant Minimization Program Plan have been implemented and state which, if any, activities from the Pollutant Minimization Program Plan were not pursued and why; Include an assessment of whether each implemented pollutant minimization activity appears to be effective or ineffective at reducing pollutant discharge concentrations and identify actions planned for the upcoming year; Identification of barriers that have limited program effectiveness and adjustments to the program that will be implemented during the next year to help address these barriers; Include an analysis of trends in total effluent mercury concentrations based on mercury sampling; and Include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury. The first annual mercury progress report is to be submitted by the Due Date.	03/31/2027
Annual Mercury Progress Report #2: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.	03/31/2028
Annual Mercury Progress Report #3: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.	03/31/2029
Annual Mercury Progress Report #4: Submit a mercury progress report, related to the pollutant minimization activities for the previous year, as defined above.	03/31/2030

Final Mercury Report: Submit a final report documenting the success in reducing mercury concentrations in the effluent, as well as the anticipated future reduction in mercury sources and mercury effluent concentrations. The report shall: Summarize mercury pollutant minimization activities that have been implemented during the current permit term and state which, if any, activities from the Pollutant Minimization Program Plan were not pursued and why; Include an assessment of which pollutant minimization activities appear to have been effective or ineffective. Evaluate any needed changes to the pollutant reduction strategy accordingly; Identification of barriers that have limited program effectiveness and adjustments to the program that will be implemented during the next variance term (if applicable) to help address these barriers; Include an analysis of trends in mercury concentrations based on sampling and data during the current permit term; and Include an analysis of how influent and effluent mercury varies with time and with significant loadings of mercury. If the permittee intends to reapply for a mercury variance per s. NR 106.145, Wis. Adm. Code, for the reissued permit, a detailed Pollutant Minimization Program Plan outlining the pollutant minimization activities proposed for the upcoming permit term shall be submitted along with the final report. An updated pollutant minimization plan shall: Include an explanation of why or how each pollutant minimization activity will result in reduced discharge of the target pollutant; Evaluate any new available information on pollutant sources, timing, and concentration to update the mass balance assumptions and expected sources of the pollutant, and Identify any information needs that would help to better determine pollutant sources and make plans to collect that information.	09/30/2030
Annual Mercury Reports After Permit Expiration: In the event that this permit is not reissued by the date the permit expires, the permittee shall continue to submit annual mercury reports for the previous year following the due date of Annual Mercury Progress Reports listed above. Annual Mercury Progress reports shall include the information as defined above.	

5.1.1 Explanation of Schedule

This schedule is included as a condition of the variance from the water quality-based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code. The schedule requires annual reports be submitted each year by the due date.

5.2 Water Quality-Based Effluent Limits (WQBELs) for Total Phosphorus

The permittee shall comply with the WQBELs for Phosphorus as specified. No later than 14 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification requirement.

Required Action	Due Date
Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of collected effluent data, possible source reduction measures, operational improvements or other minor facility	03/31/2027

modifications that will optimize reductions in phosphorus discharges from the treatment plant during the period prior to complying with final phosphorus WQBELs and, where possible, enable compliance with final phosphorus WQBELs by April 1, 2029. The report shall provide a plan and schedule for implementation of the measures, improvements, and modifications as soon as possible, but not later than April 1, 2029, and state whether the measures, improvements, and modifications will enable compliance with final phosphorus WQBELs. Regardless of whether they are expected to result in compliance, the permittee shall implement the measures, improvements, and modifications in accordance with the plan and schedule specified in the operational evaluation report. If the operational evaluation report concludes that the facility can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the permittee shall comply with the final phosphorus WQBEL by April 1, 2029, and is not required to comply with the milestones identified below for years 3 through 7 of this compliance schedule ('Preliminary Compliance Alternatives Plan', 'Final Compliance Alternatives Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet WQBELs', 'Complete Construction', 'Achieve Compliance'). STUDY OF FEASIBLE ALTERNATIVES - If the Operational Evaluation Report concludes that the permittee cannot achieve final phosphorus WQBELs with source reduction measures, operational improvements and other minor facility modifications, the permittee shall initiate a study of feasible alternatives for meeting final phosphorus WQBELs and comply with the remaining required actions of this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the Department may reopen and modify the permit to include an implementation schedule for achieving the final phosphorus WQBELs sooner than April 1, 2033.	
Compliance Alternatives, Source Reduction, Improvements and Modifications Status: The permittee shall submit a 'Compliance Alternatives, Source Reduction, Operational Improvements and Minor Facility Modification' status report to the Department. The report shall provide an update on the permittee's: (1) progress implementing source reduction measures, operational improvements, and minor facility modifications to optimize reductions in phosphorus discharges and, to the extent that such measures, improvements, and modifications will not enable compliance with the WQBELs, (2) status evaluating feasible alternatives for meeting phosphorus WQBELs.	03/31/2028
Preliminary Compliance Alternatives Plan: The permittee shall submit a preliminary compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee’s wastewater treatment facility is necessary to achieve final phosphorus WQBELs, the submittal shall include a preliminary engineering design report. If the plan concludes Adaptive Management will be used, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 without the Adaptive Management Plan. If water quality trading will be undertaken, the plan must state that trading will be pursued.	03/31/2029
Final Compliance Alternatives Plan: The permittee shall submit a final compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee’s wastewater treatment is necessary to meet final phosphorus WQBELs, the submittal shall include a final engineering design report addressing the treatment plant upgrades, and a facility plan if required pursuant to ch. NR 110, Wis. Adm. Code. If the plan concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an engineering report	03/31/2030

addressing any treatment system upgrades necessary to meet interim limits pursuant to s. NR 217.18, Wis. Adm. Code. If the plan concludes water quality trading will be used, the submittal shall identify potential trading partners. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.) Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	03/31/2031
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats. 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. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2031
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2032
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	03/31/2033
Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	04/01/2033

5.2.1 Explanation of Schedule

A 7-year compliance schedule (extending beyond the length of this permit term) is included, as provided under s. NR 217.17(2), Wis. Adm. Code. The schedule allows the permittee time to come into compliance with the final phosphorus WQBELs that are scheduled to take effect on April 1, 2033.

5.3 Update Capacity, Management, Operation, and Maintenance (CMOM) Program

Required Action	Due Date
Update & Submit CMOM Program: The permittee shall update the Capacity, Management, Operation, and Maintenance (CMOM) Program as required by s. NR 210.23, Wis. Adm. Code, and submit it to the Department for review. The update shall address all required components, including but not limited to identifying and addressing significant sources of infiltration and inflow (I/I).	03/31/2027

5.3.1 Explanation of Schedule

The permittee completed a basic CMOM Program as required during the previous permit term; however, the document did not adequately address all of the requirements in s. NR 210.23, Wis. Adm. Code. In addition, one of the primary sources of mercury in the City's wastewater system is believed to be through atmospheric deposition; therefore, reduction of I/I has been identified in the City's mercury PMP as a means to reduce this potential mercury source. This schedule is included to allow the permittee time to develop an updated document that meets the requirements in ch. NR 210, Wis. Adm. Code.

5.4 Sludge Management Plan

Required Action	Due Date
Sludge Management Plan Submittal: Submit an update to the management plan for approval if removal of sludge will occur during this permit term. The plan shall demonstrate compliance with ch. NR 204, Wis. Adm. Code. This management plan shall 1) specify how and where sludge is sampled; 2) identify available sludge storage details and location(s); 3) describe how sludge will be removed with details on volume, characterization, and how the treatment plant will continue to function during the drawdown; 4) describe the type of transporting and spreading vehicle(s) and loading and unloading practices; 5) identify approved land application sites, application for needed sites, site limitations, total acres needed, and vegetative cover management; 6) specify record keeping procedures including site loading; 7) address contingency plans for adverse weather and odor/nuisance abatement; and 8) include any other pertinent information. Once approved, all sludge management activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes. No desludging may occur unless approval from the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed. The plan is due at least 60 days prior to desludging.	

5.4.1 Explanation of Schedule

If the lagoons are to be desludged during this permit term, then a management plan is needed to show compliance with ch. NR 204, Wis. Adm. Code. As stated in the Schedule, the updated plan is due at least 60 days prior to desludging. Outlines are available to assist in plan development.

Attachments

WQBEL Memo: Water Quality-Based Effluent Limitations for the City of Mellen WPDES Permit No. WI-0020311-11-0, by Michael Polkinghorn, Water Resources Engineer, dated July 2, 2025

Mercury Variance EPA Data Sheet

PMP (Pollutant Minimization Program) Plan, dated September 2025 (covering April 1, 2026 – March 31, 2031)

Justification Of Any Waivers From Permit Application Requirements

No waivers from permit application requirements were requested or granted.

Prepared By: Sarah Donoughe, Wastewater Specialist-Adv **Date:** September 16, 2025

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 2, 2025

TO: Sarah Donoughe – NER/Green Bay Service Center

FROM: Michael Polkinghorn – NOR/Rhinelander Service Center

SUBJECT: Water Quality-Based Effluent Limitations for the City of Mellen
WPDES Permit No. WI-0020311-11-0

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 City of Mellen in Ashland County. This municipal wastewater treatment facility (WWTF) discharges to the Bad River, located in the Upper Bad River Watershed in the Lake Superior 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 002:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1
$CBOD_5$			40 mg/L	25 mg/L	1, 2, 3
TSS			45 mg/L	30 mg/L	1, 3
pH	9.0 s.u.	6.0 s.u.			1, 3
E. coli May – September				126 #/100 mL geometric mean	4
Ammonia Nitrogen Year round April – May June – September October – March	Variable		 **47 mg/L** **108 mg/L** **54 mg/L**	 **32 mg/L** **89 mg/L** **37 mg/L**	1, 5, 6
Phosphorus					7
Interim				4.9 mg/L	
Final				1.8 mg/L 3.2 lbs/day	
Mercury (Total Recoverable)	5.9 ng/L				8
Chloride					9
TKN, Nitrate+Nitrite, and Total Nitrogen					10
Temperature					9
Acute WET					11, 13
Chronic WET					12, 13

Footnotes:

1. No changes from the current permit.

2. This facility meets the conditions as described in s. NR 210.07(4), Wis. Adm. Code. An additional requirement is the 30-day average $CBOD_5$ percent removal may not be less than 85%. Significant improvements to treatment quality at the facility will prompt a re-evaluation of this variance. Otherwise the need for $CBOD_5$ limits does not need to be demonstrated at subsequent permit reissuances if the treatment quality is expected to remain similar as compared to when the limits were implemented in the permit.
3. These limits are based on the Cold Water community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.
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.
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. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit.

Daily Maximum Ammonia Nitrogen Limits

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

7. The monthly average limit of 4.9 mg/L, based on the 1-day P_{99} of effluent phosphorus data, will serve as the interim limit for the phosphorus compliance schedule.
8. An alternative effluent limitation of 5.9 ng/L, equal to the 1-day P_{99} of representative data, as a daily maximum may be included in the permit in place of the WQBELs if a mercury variance application is submitted and approved by EPA. In the absence of a mercury variance, the monthly average mercury WQBEL or 1.3 ng/L, mass limits, and additional concentration limits to meet the expression of limits requirements in s. NR 106.07, Wis. Adm. Code, would be required.
9. Monthly monitoring for 1 year is recommended to determine the need for limits at the next permit issuance.
10. 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).
11. Annual acute whole effluent toxicity (WET) testing is recommended during the reissued permit term. 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.

12. Annual chronic WET testing is recommended during the reissued permit term. The Instream Waste Concentration (IWC) to assess chronic test results is 19%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 30%, 10%, 3% & 1%. The primary control water used in chronic WET tests conducted on Outfall 002 shall be a grab sample collected from the Bad River upstream of the confluence with Outfall 002.
13. 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. Testing should continue after the permit expiration date (until the permit is reissued).

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Michael Polkinghorn at (715) 360-3379 or Michael.Polkinghorn@wisconsin.gov and Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, discharge area map, & thermal table.

PREPARED BY: Michael A. Polkinghorn – Water Resources Engineer

E-cc: Sheri Snowbank, Regional Permit Drafter – NOR/Spooner Service Center
Eric de Venecia, Regional Wastewater Engineer – NOR/Superior Service Center
Michelle BalkLudwig, Regional Wastewater Supervisor – NOR/Spooner Service Center
Diane Figiel, Water Resources Engineer – WY/3
Nate Willis, Wastewater Engineer – WY/3

Attachment #1

Water Quality-Based Effluent Limitations for
City of Mellen

WPDES Permit No. WI-0020311-11-0

Prepared by: Michael A. Polkinghorn

PART 1 – BACKGROUND INFORMATION

Facility Description

Treatment consists of two lagoons operated in series. The first lagoon is aerated and the second lagoon consists of aerated and quiescent sections separated by a baffle curtain. Wastewater is seasonally disinfected via UV light during May – September. Effluent is discharged on a continuous basis via Outfall 002 to the east bank of the Bad River, behind Tri-M Sanitary.

Attachment #2 is a discharge area map of Outfall 002.

Existing Permit Limitations

The current permit, which expired on 03/31/2025, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1
$CBOD_5$			40 mg/L	25 mg/L	2, 3, 4
TSS			45 mg/L	30 mg/L	2, 4
pH	9.0 s.u.	6.0 s.u.			2, 4
Fecal Coliform May – September			**656#/100 mL** **geometric mean**	400#/100 mL geometric mean	5
Ammonia Nitrogen Year round April – May June – September October – March	Variable		 **47 mg/L** **108 mg/L** **54 mg/L**	 **32 mg/L** **89 mg/L** **37 mg/L**	2, 5, 6
Mercury (Total Recoverable)	6.5 ng/L				7
Phosphorus					1
Sulfate (Total)					1
Temperature					1

Footnotes:

1. Monitoring only.
2. **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.

3. This facility meets the conditions as described in s. NR 210.07(4), Wis. Adm. Code. An additional requirement is the 30-day average $CBOD_5$ percent removal may not be less than 85%. Significant improvements to treatment quality at the facility will prompt a re-evaluation of this variance. Otherwise the need for $CBOD_5$ limits does not need to be demonstrated at subsequent permit reissuances if the treatment quality is expected to remain similar as compared to when the limits were implemented in the permit.
4. These limits are based on the Cold Water community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.
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. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit.

Daily Maximum Ammonia Nitrogen Limits

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
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$6.5 < pH \leq 6.6$	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

7. This interim limit is an alternative mercury effluent limit based on the variance granted by EPA as described in s. NR 106.145(4), Wis. Adm. Code, for the current permit term. This limit is based on the 1-day P_{99} of effluent data and includes implementation of a pollutant minimization plan.

Receiving Water Information

- Name: Bad River
- Waterbody Identification Code (WBIC): 2891900
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Cold Water (CW) community, Exceptional Resource Water (ERW), non-public water supply and recreational use. Public Water Supply criteria are used for bioaccumulating compounds of concern, because the discharge is within the Great Lakes basin.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following $7\text{-}Q_{10}$ and $7\text{-}Q_2$ values are from USGS for Station LS33 or NW ¼, NE ¼, Section 6, T44N – R2W, at Highway 13 in Mellen WI, in close proximity of Outfall 002.

  $7\text{-}Q_{10}$ = 5.4 cubic feet per second (cfs)

  $7\text{-}Q_2$ = 12 cfs

  Harmonic Mean Flow = 23 cfs using a drainage area of 98.3 mi^2

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 = 68 mg/L as $CaCO_3$. This value represents the geometric mean of data (n = 198, April 1961 – September 1997) from the Bad River at USH 2 (SWIMS ID: 023001).
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%. A mixing zone is not allowed for discharges of bioaccumulating compounds of concern (BCCs) in the Great Lakes system as described in s. NR 106.06(2)(br), Wis. Adm. Code.
- Source of background concentration data: Metals data from two monitoring sites along the Bad River are used for this evaluation. For all arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc, background concentrations were gathered from a monitoring site on the Bad River at Gilman Park, just upstream of the City of Mellen discharge. For chloride, background concentrations were taken from the monitoring site at Gilman Park in addition to a monitoring site downstream at USH 2 near Odanah, WI. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for phosphorus are described later.
- Multiple dischargers: There are several other dischargers to the Bad 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: There are no known impairments to the Bad River or to downstream surface water within a reasonable distance from Outfall 002.

Effluent Information

- Design flow rate(s):
  Annual average = 0.207 million gallons per day (MGD)
  For reference, the actual average flow from April 2020 – April 2025 was 0.139 MGD.
- Hardness = 212 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in September 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 with 3 industrial contributors.
- Water supply: Municipality waterworks.
- Additives: None.
- 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 chloride and hardness. The current permit required monitoring for sulfate, temperature, 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.

Ammonia Nitrogen Effluent Data

Statistics (mg/L)	April - May	June - September	October - March
1-day P_{99}	21	22	28
4-day P_{99}	13	12	19
30-day P_{99}	9.6	7.3	12.8

Mean*	7.8	5.1	9.7
Std	3.8	4.4	5.4
Sample size	47	88	129
Range	0.2 - 16	<0.2 - 15	<0.2 - 19

*Values lower than the limit of detection were substituted with a zero

Chloride & Copper Effluent Data

Sample Date	Chloride (mg/L)	Copper (µg/L)
08/13/2024		<5.2
08/16/2024		<5.2
08/19/2024		6.0
08/22/2024		6.2
08/25/2024		7.4
08/28/2024		9.6
08/31/2024		7.2
09/03/2024	10	9.2
09/06/2024	220	8.3
09/09/2024	220	13.2
09/12/2024	220	<5.2
Mean*	168	6.1

*Values lower than the limit of detection were substituted with a zero

Mercury Effluent Data

Statistics	Conc. (ng/L)
1-day P_{99}	5.88
4-day P_{99}	3.78
30-day P_{99}	2.71
Mean	2.20
Std	1.09
Sample size	20
Range	0.841 - 4.66

Sulfate Effluent Data

Statistics	Conc. (mg/L)
1-day P_{99}	26
4-day P_{99}	21
30-day P_{99}	18
Mean	17
Std	3.3
Sample size	16
Range	11 - 23

The following table presents the average concentrations and loadings at Outfall 002 from April 2020 – 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*
$CBOD_5$	25 mg/L
TSS	19 mg/L
pH field	7.4 s.u.
Fecal Coliform	15 #/100 mL**
Ammonia Nitrogen	7.8 mg/L
Mercury	2.20 ng/L

*Any 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 City of Mellen, 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/sulfate/chloride (mg/L) and mercury (ng/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)
RECEIVING WATER FLOW = 4.3 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.
Arsenic		340	679.6	135.9	16.7		16.7
Cadmium	212	10.3	20.7	4.1	<0.41		<0.41
Chromium	212	3,342	6,684.4	1,337	1.2		1.2
Copper	212	31.6	63.2	12.6	6.1		13.2
Lead	212	221	442.9	88.6	<1.4		<1.4
Mercury (ng/L)**		830	830			5.88	4.66
Nickel	212	888	1,775.1	355	<1.5		<1.5
Zinc	212	233	465.3	93.1	<4.5		<4.5
Chloride (mg/L)		757	1,514.0	303	168		220
Sulfate (mg/L)***		612	612			26	23

* 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.
** A mixing zone is not allowed for discharges of bioaccumulating compounds of concern (BCCs) in the Great Lakes system as described in s. NR 106.06(2)(br), Wis. Adm. Code.
*** The limit for this substance is based on a secondary value. Acute limits are set equal to the secondary value rather than two times or using the 1-Q_{10} s. NR 106.06(3)(b)2 and s. NR 105.05(2)(f)6), Wis. Adm Code.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)
RECEIVING WATER FLOW = 1.4 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	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Arsenic		148.0	0.71	769	153.8	16.7	
Cadmium	68	1.81	0.02	9.35	1.9	<0.41	
Chromium	68	62.64	0.64	324	64.8	1.2	
Copper	68	7.41	1.31	33.1	6.62	6.1	
Lead	68	19.22	0.28	99.1	19.8	<1.4	

Attachment #1

SUBSTANCE	REF. HARD. mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Mercury (ng/L)*		440	4.87	440			3.78
Nickel	68	37.53	0.79	192	38.5	<1.5	
Zinc	68	85.6	3.45	432	86.4	<4.5	
Chloride (mg/L)		395	3.79	2,044	409	168	
Sulfate (mg/L)**		401		2,091			21

* A mixing zone is not allowed for discharges of bioaccumulating compounds of concern (BCCs) in the Great Lakes system as described in s. NR 106.06(2)(br), Wis. Adm. Code.
** The limit for this substance is based on a secondary value.

Monthly Average Limits based on Wildlife Criteria (WC)
RECEIVING WATER FLOW = 2.6 cfs (¼ of the 90-Q_{10}), as specified in s. NR 106.06(4), Wis. Adm. Code

SUBSTANCE	WC	MO'LY AVE. LIMIT	30-day P_{99}
Mercury (ng/L)*	1.3	**1.3**	**2.71**

* A mixing zone is not allowed for discharges of bioaccumulating compounds of concern (BCCs) in the Great Lakes system as described in s. NR 106.06(2)(br), Wis. Adm. Code.

Monthly Average Limits based on Human Threshold Criteria (HTC)
RECEIVING WATER FLOW = 5.8 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P_{99}
Cadmium	370	0.02	7050	1,410	<0.41	
Chromium	3,818,000	0.64	72,753,602	14,550,720	1.2	
Lead	140	0.28	2,663	532.5	<1.4	
Mercury (ng/L)*	1.5	4.87	**1.5**			**2.71**
Nickel	43,000	0.79	819,369	163,874	<1.5	

* A mixing zone is not allowed for discharges of bioaccumulating compounds of concern (BCCs) in the Great Lakes system as described in s. NR 106.06(2)(br), Wis. Adm. Code.

Monthly Average Limits based on Human Cancer Criteria (HCC)
RECEIVING WATER FLOW = 5.8 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3	0.71	240.6	48	16.7

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 mercury.** Limits and/or monitoring recommendations are made in the paragraphs below:

Chloride – Considering available effluent data from the current permit term (September 2024), the mean effluent concentration was 168 mg/L. This effluent concentration is below the calculated chloride WQBELs; **therefore, no chloride limits are needed. Chloride monitoring is recommended to ensure that 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.85, Wis. Adm. Code.**

Sulfate – Considering available effluent data from the current permit term (August 2020 – January 2025), the 1 and 4-day P_{99} concentrations are 26 and 21 mg/L respectively. These effluent concentrations are significantly below the calculated sulfate WQBELs; **therefore, sulfate limits or monitoring are not recommended during the reissued permit term.**

Mercury – Mercury field blanks (Sample Point 101) have not indicated contamination was present from either sample transportation or environmental sources. Therefore, no effluent mercury samples were excluded from this evaluation due to this consideration. A review of data from June 2020 – February 2025 indicates the 30-day P_{99} is 2.71 ng/L, which is above the wildlife criterion of 1.3 ng/L. **Therefore, 1.3 ng/L as a monthly average is recommended during the reissued permit term.**

Section NR 106.145(4), Wis. Adm. Code, allows for eligibility for an alternative mercury effluent limitation if the permittee applies for an alternative mercury limit, which includes the submittal of a pollutant minimization plan. The City of Mellen has submitted this application. Section NR 106.145(5), Wis. Adm. Code, specifies that an alternative limitation shall equal the 1-day P_{99} of the effluent data and shall be expressed as a daily maximum concentration. The 1-day P_{99} of effluent mercury data is 5.9 ng/L. **Therefore, if a variance is granted and approved by US Environmental Protection Agency, then an alternative mercury limitation of 5.9 ng/L as a daily maximum would be recommended during the reissued permit term.** The current permit included an alternative mercury effluent limit of 6.5 ng/L as a daily maximum.

In the absence of a mercury variance, mass limits and additional concentration limits to meet the expression of limits requirements in s. NR 106.07, Wis. Adm. Code, would be required.

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, the types of indirect dischargers contributing to the collection system, and the nondetectable levels of PFOS/PFOA in the source water, **PFOS and PFOA monitoring is not recommended during the reissued permit term.** 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 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.

E. coli monitoring is recommended at the same frequency that fecal coliform monitoring is required in the current permit. Because the City of Mellen's permit requires weekly monitoring, the 410 counts/100 mL limit will effectively function as a daily maximum limit unless the facility performs additional monitoring. Any additional monitoring beyond what is required by the permit must also be reported on the DMR as required in the standard requirements section of the permit.

These limits are required during May through September. No changes are recommended to the current recreational period and the required disinfection season.

Effluent Data

The City of Mellen has monitored effluent *E. coli* from May 2024 – September 2024 and a total of 22 results are available. A geometric mean of 126 counts/100 mL was never exceeded, with a maximum monthly geometric mean of 15 counts/100 mL. Effluent data has never exceeded 410 counts/100 mL, with a maximum reported value of 242 counts/100 mL. **Based on this effluent data it appears that the facility can meet new *E. coli* limits and a compliance schedule is not needed in the reissued permit.**

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.

Because the City of Mellen does not currently have an existing technology-based limit, the need for this limit in the reissued permit is evaluated. The data demonstrates that the annual monthly average phosphorus loading is less than 150 lbs/month, which is the threshold for municipalities in accordance with s. NR 217.04(1)(a)1, Wis. Adm. Code. **Therefore, a technology-based limit is not recommended during the reissued permit term.** In addition, the need for a WQBEL for phosphorus must be considered.

Annual Average Mass Total Phosphorus Loading

Month	Result mg/L	Total Flow MG/month	Total Phosphorus lb./mo.
Jan 2022	2.4	5.8	117
Feb 2022	3.1	4.9	127
Mar 2022	3.9	9.1	296
April 2022	2.1	22	378
May 2022	0.95	15	117
June 2022	0.98	7.3	59
July 2022	1.6	5.4	72

Attachment #1

Aug 2022	2.1	4.8	84
Oct 2022	1.2	4.7	47
Nov 2022	1.7	7.6	107
Jan 2023	2.6	6.1	131
Feb 2023	2.0	6.2	104
		Average =	137

Total P (lbs/month) = Result (mg/L) × total flow (MG/month) × 8.34 (lbs/gallon)
Where total flow is the sum of the actual flow (MGD) for that month

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 0.075 mg/L applies for the Bad 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 = 0.075 mg/L for the Bad River.
Qs = 100% of the 7-Q_2 of 12 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 = 0.207 MGD = 0.320 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. Adm. 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 previous limit evaluation (September 2019) resulted in a WQBEL of 1.8 mg/L using a background concentration of 0.03 mg/L. Section NR 217.13(2)(d), Wis. Adm. Code, states that the determination of upstream concentrations shall be evaluated at each permit reissuance. Additional data were considered in estimating the background phosphorus concentration. The previous background value was generated considering the following background data in the Surface Water Integrated Monitoring System (SWIMS) database:

Attachment #1

Background Phosphorus Values – September 2019 WQBEL Memo

			Downstream
SWIMS ID	10034375	10012906	023129
Station Name	Monitoring station Upstream Ballou Confluence	Monitoring station at Hwy 77	Monitoring station at East Taylor Bridge
Waterbody	Devils Creek	Tyler Forks	Bad River
Sample Count	8	38	5
First Sample	08/22/2012	08/22/2012	07/28/2007
Last Sample	09/01/2014	10/25/2016	09/26/2007
Mean (mg/L)	0.026	0.031	0.045
Median (mg/L)	0.027	0.029	0.047
NR 217 Median (mg/L)	0.027	0.031	0.047

A review of all available in stream total phosphorus stored in the Surface Water Integrated Monitoring System database shows the Bad River at Gilman Park (SWIMS ID: 10033485) has 4 monthly samples from June 2013 – August 2018, which result in a median value of 0.028 mg/L. This location is just upstream of Outfall 002. Substituting a median value of 0.028 mg/L into the limit calculation equation above, the calculated limit is 1.8 mg/L.

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from January 2022 – February 2023.

Total Phosphorus Effluent Data

Statistics	Conc. (mg/L)
1-day P_{99}	4.9
4-day P_{99}	3.3
30-day P_{99}	2.5
Mean	2.1
Std	0.87
Sample size	12
Range	0.95 - 3.9

Reasonable Potential Determination

The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion because the 30-day P_{99} of reported effluent total phosphorus data is greater than the calculated WQBEL**.** Therefore, **the monthly average limit of 1.8 mg/L is recommended during the reissued permit term.**

Mass Limits

A mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code, because the Bad River is an ERW at the point of discharge. **This final mass limit shall be 1.8 mg/L × 8.34 × 0.207 MGD = 3.2 lbs/day expressed as a monthly average.**

Interim Limit

An interim limit is required per s. NR 217.17, Wis. Adm. Code, when a compliance schedule is needed in

the permit to meet the WQBEL. The interim limit should reflect a concentration that the facility is able to meet without investing in additional "temporary" treatment, but also should prevent backsliding from current conditions. **Therefore, it is recommended that the interim limit be set equal to 4.9 mg/L as a monthly average for permit reissuance along with requirements for optimization of phosphorus removal.** This value is chosen over other statistical values due to the concern of high effluent variability of a small dataset and of a municipal facility with no current phosphorus treatment.

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 April 2020 – April 2025.

The table below summarizes the maximum temperatures reported during monitoring from August – September 2022. Temperature data from April – October 2014 is used for comparison to the calculated limits for April – July and October. Temperature monitoring during November – March was not recommended since reasonable potential was not demonstrated. The complete temperature limit calculations are included as attachment #3.

Monthly Temperature Effluent Data & Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)*	Daily Maximum Effluent Limitation (°F)
JAN			NA	120
FEB			112	120
MAR			93	120
APR	44	45	74	103
MAY	64	66	76	98
JUN	70	71	83	99
JUL	73	74	74	91
AUG	70	70	71	103
SEP	68	69	73	120
OCT	51	59	72	120

Attachment #1

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)*	Daily Maximum Effluent Limitation (°F)
NOV			73	120
DEC			87	100

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

Reasonable Potential

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

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

Based on the available effluent data, **no effluent limits are recommended for temperature. Monthly temperature monitoring for 1 year is recommended to have updated temperature data to determine the need for limits at the next permit issuance.**

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 19%, 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 = 0.207 MGD = 0.320 cfs.
f = fraction of the Q_e withdrawn from the receiving water = 0.
Q_s = ¼ of the 7-Q_{10} = 5.4 cfs ÷ 4 = 1.4 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 002 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 002. 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.

WET Data History

Date Test Initiated	Acute Results LC_{50} %				Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	
11/04/2009	>100	>100	Pass	Yes	

- 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.

WET Checklist Summary

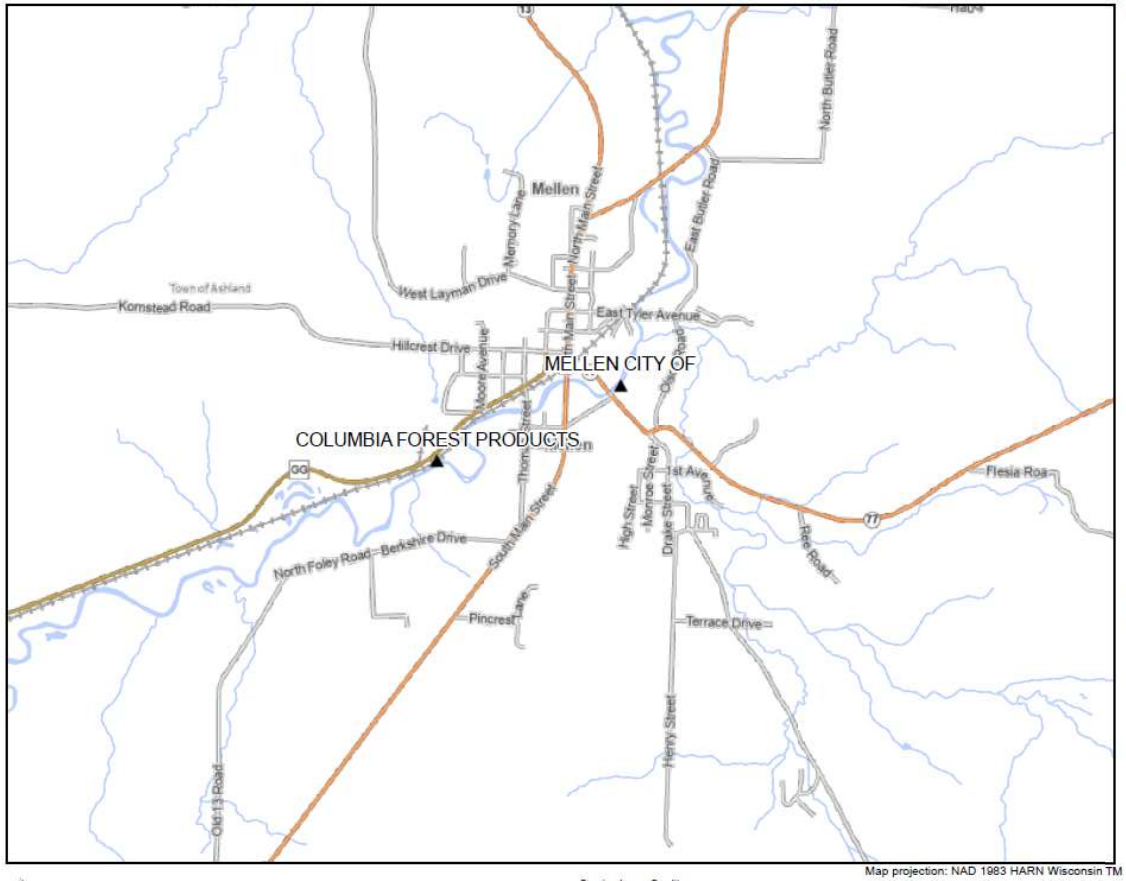
	Acute	Chronic
AMZ/IWC	Not applicable. **0 Points**	IWC = 19%. **0 Points**
Historical Data	One test used to calculate RP. No tests failed. No acute tests available within last 5 years. **5 Points**	No chronic tests available. **5 Points**
Effluent Variability	Multiple NONs for CBOD and TSS limit exceedances likely due to slug loading and WWTP performance. **10 Points**	Same as acute. **10 Points**
Receiving Water Classification	ERW. **12 Points**	Same as acute. **12 Points**
Chemical-Specific Data	Reasonable potential for limits for ammonia nitrogen based on ATC; Multiple substances detected. Additional Compounds of Concern: No. **8 Points**	No reasonable potential for limits based on CTC; Ammonia nitrogen limit carried over from the current permit. Multiple substances detected. Additional Compounds of Concern: No. **3 Points**
Additives	None. **0 Points**	None. **0 Points**
Discharge Category	Three industrial contributors. **8 Points**	Same as acute. **8 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:	**43 Points**	**38 Points**

	Acute	Chronic
Recommended Monitoring Frequency (from Checklist):	Annual acute tests recommended.	Annual chronic tests 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, **annual acute and chronic 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. Testing should continue after the permit expiration date (until the permit is reissued).

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

City of Mellen Outfall 002 Discharge Area



Legend: (some map layers may not be displayed)

- Surface Water Outfalls
- Rivers and Streams
- Intermittent Streams
- Open Water

Notes:
WPDES viewer, WDNR

Map projection: NAD 1983 HARN Wisconsin TM

N

Map: 0 2,000 4,000 Feet
0 610 1,220 Meters

Service Layer Credits:
Basic Basemap (Cached):

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

Date Printed: 6/16/2025 2:08 PM

Attachment #3

Temperature Limits for Receiving Waters with Unidirectional Flow

(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	City of Mellen		**7-Q_{10}:**	5.4	cfs		
Outfall(s):	002		**Dilution:**	25%		**Start:** 08/10/22	04/01/20
Date Prepared:	6/16/2025		**f:**	0		**End:** 09/09/22	04/30/25
Design Flow (Qe):	0.207	MGD	**Stream type:**	Cold water community			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	4.2	: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	35	47	68	5.40	0.122	0.130	0			NA	120
FEB	36	47	68	5.40	0.148	0.160	0			112	120
MAR	39	51	69	5.40	0.248	0.285	0			93	120
APR	47	57	70	5.40	0.524	0.605	0	44	45	74	103
MAY	56	63	72	5.40	0.475	0.530	0	64	66	76	98
JUN	62	67	72	5.40	0.274	0.320	0	70	71	83	99
JUL	64	67	73	5.40	0.351	0.435	0	73	74	74	91
AUG	63	65	73	5.40	0.279	0.295	0	70	70	71	103
SEP	57	60	72	5.40	0.209	0.230	0	68	69	73	120
OCT	49	53	70	5.40	0.179	0.185	0	51	59	72	120
NOV	41	48	69	5.40	0.248	0.350	0			73	120
DEC	37	47	69	5.40	0.217	0.900	0			87	100

Facility Specific Mercury Variance Data Sheet

Directions: Please complete this form electronically. Record information in the space provided. Select checkboxes by double clicking on them. Do not delete or alter any fields. For citations, include page number and section if applicable. Please ensure that all data requested are included and as complete as possible. Attach additional sheets if needed.

Section I: General Information

A. Name of Permittee: City of Mellen

B. Facility Name: Mellen Wastewater Treatment Facility (WWTF)

C. Submitted by: Wisconsin Department of Natural Resources

D. State: Wisconsin **Substance:** Mercury **Date completed:** September 16, 2025

E. Permit #: WI-0020311-11-0 **WQSTS #:** (EPA USE ONLY)

F. Duration of Variance **Start Date:** April 1, 2026 **End Date:** March 31, 2031

G. Date of Variance Application: October 31, 2024

H. Is this permit a: ☐ **First time submittal for variance**
☒ **Renewal of a previous submittal for variance** *(Complete Section X)*

I. Description of proposed variance:

The City of Mellen seeks a variance to the water quality standards for mercury for its WWTF. The proposed variance for mercury, from the chronic water quality-based effluent limit of 1.3 ng/L, to an alternative mercury effluent limit (AMEL) of 5.9 ng/L, is expressed as a daily maximum limit.

The Department concludes that the City of Mellen has met the requirements of s. NR 106.145, Wisconsin Administrative Code, and s. 283.15, Wisconsin Statutes. The Department further concludes that requiring the City of Mellen to meet the water quality standard for mercury would result in substantial and widespread adverse social and economic impacts in its service area. Furthermore, the Department concludes that there is no feasible pollutant control technology that can be applied to achieve compliance with the mercury effluent limits that are equal to the mercury criteria. The Department therefore proposes that this permit include a discharger-specific variance to the mercury water quality standards for wildlife and human health.

The Department concludes that the AMEL reflects the greatest pollutant reduction achievable by the permittee with the pollutant control technologies currently applied in the permittee's WWTF. The permit requires the permittee to implement its Mercury Pollutant Minimization Program (PMP). The Department considers the highest attainable condition (HAC) of the receiving water to be the AMEL – applied as an interim effluent limit for the term of the variance – combined with the permittee's implementation of its Mercury PMP. The term of the proposed variance is five years, concurrent with the term of the proposed WPDES permit. The underlying designated uses and criteria of Wisconsin's mercury water quality standards (WQS) will be retained, and all other applicable WQS will remain in effect with adoption of the proposed variance.

Citation: An alternative mercury effluent limitation under s. NR 106.145, Wis. Adm. Code represents a variance to water quality standards authorized by s. 283.15, Wis. Stats.

J. List of all who assisted in the compilation of data for this form

Name	Email	Phone	Contribution
Sarah Donoughe	Sarah.Donoughe@wisconsin.gov	920-366-6076	Permit Drafter/Variance Coordinator
Eric de Venecia	Eric.deVenecia@wisconsin.gov	715-685-4155	Compliance Engineer
Michael Polkinghorn	Michael.Polkinghorn@wisconsin.gov	715-360-3379	Limit Calculator

Section II: Criteria and Variance Information

A. Water Quality Standard from which variance is sought: 1.3 ng/L Wildlife Criterion

B. List other criteria likely to be affected by variance: 1.5 ng/L Human Threshold Criterion

C. Source of Substance: The majority of the mercury in the wastewater is from atmospheric deposition. Small contributions may come from such facilities as the school, industries, commercial establishments, and residences, or legacy contamination in the collection system downstream from these facilities.

D. Ambient Substance Concentration: Not needed. ☐ **Measured** ☐ **Estimated** ☒ **Default** ☐ **Unknown**

E. If measured or estimated, what was the basis? Include citation.
A mixing zone is not allowed for discharges of bioaccumulating compounds of concern (BCCs) in the Great Lakes system as described in s. NR 106.06(2)(br), Wis. Adm. Code.

F. Average effluent discharge rate: 0.139 MGD (April 2020 – April 2025). **Maximum effluent discharge rate:** 0.605 MGD (04/06/2022)

G. Effluent Substance Concentration: 5.88 ng/L (1-day P_{99}); 3.78 ng/L (4-day P_{99}); 2.71 ng/L (30-day P_{99}); Mean = 2.20 ng/L ☒ **Measured** ☐ **Estimated** ☐ **Default** ☐ **Unknown**

H. If measured or estimated, what was the basis? Include Citation. 30-day P_{99} calculated using methods described in s. NR 106.05(5), Wis. Adm. Code, and based on effluent mercury data (June 2020 – February 2025).

I. Type of HAC:
☐ **Type 1: HAC reflects waterbody/receiving water conditions**
☐ **Type 2: HAC reflects achievable effluent conditions**
☒ **Type 3: HAC reflects current effluent conditions**

J. Statement of HAC: The Department has determined the highest attainable condition of the receiving water is achieved through the application of the variance limit in the permit, combined with a permit requirement that the permittee implement its Mercury PMP. Thus, the HAC at commencement of this variance is 5.9 ng/L, which reflects the greatest mercury reduction achievable with the current treatment processes, in conjunction with the implementation of the permittee's Mercury PMP. The current effluent condition is reflective of on-site optimization measure that have already occurred. This HAC determination is based on the economic feasibility of available compliance options for Mellen WWTF at this time (see Economic Section below). The permittee may seek to renew this variance in the subsequent reissuance of this permit; the Department will reevaluate the HAC in its review of such a request. A subsequent HAC cannot be defined as less stringent than this HAC.

K. Variance Limit: 5.9 ng/L

L. Level currently achievable (LCA): 5.9 ng/L

M. What data were used to calculate the LCA, and how was the LCA derived? (*Immediate compliance with LCA is required.)*
1-day P_{99} calculated using methods described in s. NR 106.05(5), Wis. Adm. Code, and based on effluent mercury data (June 2020 – February 2025).

Citation: s. NR 106.145(5), Wis. Adm. Code.

N. Explain the basis used to determine the variance limit (which must be ≤ LCA). Include citation.
The variance limit = 1 Day P99. The limit is established in accordance with s. NR 106.145(5), Wis. Adm. Code.

O. Select all factors applicable as the basis for the variance provided under 40 CFR 131.10(g). Summarize justification below: ☐ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5** ☒ **6**
Section NR 106.145(1), Wis. Adm. Code, outlines several findings that justify variances for mercury. The Department intended that this provision be generally applicable to all dischargers of mercury, which produce large volumes of effluent with already extremely low mercury concentrations. The Department considers treating to produce effluent at concentrations to meet the limit to be technically and economically infeasible.

Citation: Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy, April 24, 1997, Ohio Environmental Protection Agency, Division of Surface Water and Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of Amended and New Rules in OAC Chapters 3745-1, -2, and -33.

Section III: Location Information

A. Counties in which water quality is potentially impacted: Ashland

B. Receiving waterbody at discharge point: Bad River

C. Flows into which stream/river? Lake Superior **How many miles downstream?** 43 mi.

D. Coordinates of discharge point (UTM or Lat/Long): Outfall 002: Lat 46.213769° N / Long 90.411418° W

E. What are the designated uses associated with this waterbody?
Cold Water (CW) community, Exceptional Resource Water (ERW), non-public water supply and recreational use.

F. What is the distance from the point of discharge to the point downstream where the concentration of the substance falls to less than or equal to the chronic criterion of the substance for aquatic life protection?
Ambient mercury concentrations in surface water resulting from the variance will be substantially less than levels that result in direct toxicity to aquatic organisms. EPA's current chronic aquatic life criterion for mercury is 0.9081 µg/L, which is approximately three orders of magnitude greater than the wildlife criteria (0.0013 µg/L). Wisconsin's criteria are 0.44 µg/L and 0.83 µg/L for chronic and acute toxicity, respectively. Therefore, instream concentrations are assumed to be well below the chronic criterion immediately at the point of effluent discharge.

G. Provide the equation used to calculate that distance. See above.

H. Identify all other variance permittees for the same substance which discharge to the same stream, river, or waterbody in a location where the effects of the combined variances would have an additive effect on the waterbody: None.

Permit Number	Facility Name	Facility Location	Variance Limit [µg/L]
N/A			

Please attach a map, photographs, or a simple schematic showing the location of the discharge point as well as all variances for the substance currently draining to this waterbody on a separate sheet
(See attached map, City of Mellen WWTF)

I. Is the receiving waterbody on the CWA 303(d) list? If yes, please list the impairments below. ☐ Yes ☒ No ☐ Unknown

River Mile	Pollutant	Impairment
N/A		

Section IV: Pretreatment (complete this section only for POTWs with DNR-Approved Pretreatment Programs. See w:\Variances\Templates and Guidance\Pretreatment Programs.docx)

A. Are there any industrial users contributing mercury to the POTW? If so, please list.
N/A

B. Are all industrial users in compliance with local pretreatment limits for mercury? If not, please include a list of industrial users that are not complying with local limits and include any relevant correspondence between the POTW and the industry (NOVs, industrial SRM updates and timeframe, etc)
N/A

C. When were local pretreatment limits for mercury last calculated?
N/A

D. Please provide information on specific SRM activities that will be implemented during the permit term to reduce the industry's discharge of the variance pollutant to the POTW
N/A

Section V: Public Notice

A. Has a public notice been given for this proposed variance? ☒ Yes ☐ No

B. If yes, was a public hearing held as well? ☒ Yes ☐ No ☐ N/A

C. What type of notice was given?
☒ Notice of variance included in notice for permit ☐ Separate notice of variance

D. Date of public notice: TBD (October 1 or 8, 2025) **Date of hearing:** November 24, 2025

E. Were comments received from the public in regards to this notice or hearing? *(If yes, please attach on a separate sheet)* ☐ Yes ☐ No

Section VI: Human Health

A. Is the receiving water designated as a Public Water Supply? ☐ Yes ☒ No

B. Applicable criteria affected by variance: 1.5 ng/L Human Threshold Criterion

C. Identify any expected impacts that the variance may have upon human health, and include any citations:

- The proposed variance will not adversely affect human health directly through the drinking water.
- Wisconsin's fish consumption advisory program is designed to mitigate the effect of any ambient mercury concentration above the 1.5 ng/L water quality criterion for the protection of the fish-consuming human population by providing advice to the public to guide them on the amount of fish that may be consumed safely.
- Given the lack of wastewater treatment technologies capable of reducing mercury concentrations to achieve a 1.3 ng/L effluent limit, granting a variance in this situation is consistent with protecting the public health, safety and welfare because of the substantial public health and safety benefits of providing wastewater treatment, the continued commitment towards further mercury pollutant minimization, the Wisconsin fish advisory program, and the limited impact of the elevated effluent concentrations given the background mercury concentrations.
- The Department's findings suggest that mercury in walleye from Wisconsin lakes changed in the range of 0.5 to 0.8% per year depending on geographical position in the state during the period of 1982–2005. These trends may reflect geographically differing temporal trends in the amount of mercury deposited to Wisconsin lakes. However, long-term changes in other factors, such as water chemistry, fish growth rates, and lake levels, known to impact mercury bioavailability and accumulation may also be important. (Temporal trends of mercury concentrations in Wisconsin walleye (Sander vitreus), 1982–2005, Paul W. Rasmussen, Candy S. Schrank, Patrick A. Campfield. Ecotoxicology (2007) 16:541–550)

Section VII: Aquatic Life and Environmental Impact

A. Aquatic life use designation of receiving water: Cold Water (CW)

B. Applicable criteria affected by variance: 1.3 ng/L Wildlife Criterion

C. Identify any environmental impacts to aquatic life expected to occur with this variance, and include any citations:

Not Likely to Adversely Affect

- Ambient mercury concentrations resulting from the variance will be substantially less than levels that result in direct toxicity to aquatic organisms. EPA's current chronic aquatic life criterion for mercury is 0.9081 µg/L, which is approximately three orders of magnitude greater than the wildlife criteria (0.0013 µg/L). Wisconsin's criteria are 0.44 µg/L and 0.83 µg/L for chronic and acute toxicity, respectively.
    - Hine's emerald dragonfly (Somatochlora hineana, endangered)
    - Higgins' Eye mussel (Lampsilis higgnsii, endangered)
    - Winged Mapleleaf mussel (Quadrula fragosa, endangered)
    - Spectaclecase (Cumberlandia monodonta, candidate)
    - Sheepnose (Plethobasus cyphyus, candidate)

- Low trophic level prey where mercury in prey is unlikely to accumulate to toxic levels in the organism.
    - Piping plover (Charadrius melodus, endangered)
    - Eastern massasauga rattlesnake (Sistrurus catenatus catenatus, candidate)

May Affect, Not Likely to Adversely Affect

- Bald eagle (Haliaeetus leucocephalus, Delisted due to Recovery)

Bald eagles consume fish and waterfowl from surface waters, which puts them at risk of exposure to toxic levels of mercury due to bioaccumulation of mercury in their prey organisms. However, despite the potential for exposure, ambient surface water data show that in recent decades, mercury levels have not increased and bald eagle populations have continued to grow. This indicates that current ambient concentrations of mercury and mercury concentrations in prey organisms do not appear to be limiting recovery of bald eagle populations in Wisconsin. Although this variance will allow permitted dischargers additional time to identify and control sources of mercury in their discharges, the pollutant minimization component of the variances should result in a net reduction in the amount of mercury discharged to Wisconsin surface waters from permitted point sources, further reducing any risk to bald eagles. In addition, the pollutant minimization programs encourage other pollution prevention efforts, which has a beneficial indirect effect of reducing the use and production of products and processes that use or contribute mercury to the environment. These efforts will also benefit bald eagles.

D. List any Endangered or Threatened species known or likely to occur within the affected area, and include any citations:

Because mercury is pervasive, persistent and bioaccumulating in the environment we considered all species listed for the entire state of Wisconsin. The following list contains the Federally Endangered and Threatened Species in Wisconsin From U.S. Fish and Wildlife Service, Region 3, July 2025.

BIRDS
Piping Clover (E)
CLAMS
Higgins Eye (E)
Sheepnose Mussel (E)
Snuffbox Mussel (E)
Spectaclecase (mussel) (E)
Winged Mapleleaf (E)
MAMMALS
Indiana bat (E)
Norther Long-eared Bat (E)
REPTILES
Eastern Massasauga (T)
SNAILS
Iowa Pleistocene snail (E)
INSECTS
Hine's emerald dragonfly (E)
Karner Blue Butterfly (E)
Poweshiek skipperling (E)
Rusty Patched Bumble Bee (E)
FLOWERING PLANTS
Dwarf lake iris (T)
Eastern prairie fringed orchid (T)
Fassett's locoweed (T)
Mead's Milkweed (T)
Northern wild monkswood (T)
Pitcher's thistle (T)
Prairie Bush Clover (T)

Citation: U.S. Fish & Wildlife Service – Environmental Conservation Online System (http://www.fws.gov/endangered/) and National Heritage Index (http://dnr.wi.gov/topic/nhi/)

Section VIII: Economic Impact and Feasibility

A. Describe the permittee's current pollutant control technologies in the treatment process:

Treatment consists of two lagoons operated in series. The first lagoon is aerated and the second lagoon consists of aerated and quiescent sections separated by a baffle curtain. Wastewater is seasonally disinfected via UV light during May – September. Effluent is discharged on a continuous basis via Outfall 002 to the east bank of the Bad River.

B. What modifications would be necessary to comply with the current limits? Include any citations.

The Department did not evaluate what actions or modifications or other changes would be needed to meet limits based on the water quality standard. As discussed below, the Department considers treating to produce effluent at concentrations to meet the limit to be technically and economically infeasible.

Citation: Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy, April 24, 1997, Ohio Environmental Protection Agency, Division of Surface Water and Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of Amended and New Rules in OAC Chapters 3745-1, -2, and -33.

C. Identify any expected environmental impacts that would result from further treatment, and include any citations:

See above.

D. Is it technically and economically feasible for this permittee to modify the treatment process to reduce the level of the substance in the discharge? ☐ Yes ☒ No ☐ Unknown

The Department considers treating to produce effluent at concentrations to meet the limit to be technically and economically infeasible.

Citation: Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy, April 24, 1997, Ohio Environmental Protection Agency, Division of Surface Water and Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of Amended and New Rules in OAC Chapters 3745-1, -2, and -33.

E. If treatment is possible, is it possible to comply with the limits on the substance? ☐ Yes ☒ No ☐ Unknown

F. If yes, what prevents this from being done? Include any citations.

See above.

G. List any alternatives to current practices that have been considered, and why they have been rejected as a course of action, including any citations:

The Department did not evaluate alternative treatment processes to comply with the mercury WQBELs, since the Department considers wastewater treatment to produce effluent at concentrations equal to the mercury criteria to be technically and economically infeasible. The Department considers mercury pollutant minimization to be a viable alternative to wastewater treatment for purposes of reducing the discharge of mercury from WWTFs. Successful implementation of Mercury PMPs has been demonstrated to result in reductions in the amount of mercury discharged to WWTFs (in the influent), leading to reductions in the amount of mercury discharged by WWTFs (in the effluent). Implementation of Mercury PMPs has been shown to be a cost-effective means for permittees to reduce the discharge of mercury from their WWTFs. In this case, the Department considers implementation of a Mercury PMP to be the best alternative for the permittee to reduce its discharge of mercury. Thus, the permit requires the permittee to implement its Mercury PMP and submit annual reports to the Department documenting activities conducted each year and progress made toward achieving compliance with the mercury WQBELs. It is noted that the HAC is partially fulfilled through the permittee's implementation of its Mercury PMP.

Section IX: Compliance with Water Quality Standards

A. Describe all activities that have been, and are being, conducted to reduce the discharge of the substance into the receiving stream. This may include existing treatments and controls, consumer education, promising centralized or remote treatment technologies, planned research, etc. Include any citations.

- Continue to sample influent and effluent as required by the current permit.
- Review sample data and submit annual reports as required by the current permit.
- On a yearly basis, contact and sample the wastewater from two different industries, schools, septic haulers, or nursing home and document the results and make assurance mercury BMPs are followed. All potential contributors will be contacted and sampled at least once during the current permit term.
- Continue to update the list of facilities in the mercury PMP plan to keep all the records current.
- Locate and identify new facilities in the collection system that may have mercury related wastes and add them to the current inventory.
- Speak to and send out educational flyers to businesses and the public on a yearly basis promoting the Ashland County's Clean Sweep program and maintaining BMPs.
- Continue to review and update the City Sewer Use Ordinance as needed to keep it relevant.

B. Describe all actions that the permit requires the permittee to complete during the variance period to ensure reasonable progress towards attainment of the water quality standard. Include any citations.

The permit contains a variance to the wildlife water quality-based criterion for mercury granted in accordance with s. 283.15, Stats. As conditions of this variance the permittee shall (a) maintain effluent quality at or below the interim effluent limitation specified in the permit, (b) implement the mercury pollutant minimization measures specified in the Pollutant Minimization Program Plan dated September 2025 (covering April 1, 2026 – March 31, 2030), and (c) perform the actions listed in the Mercury Pollutant Minimization Program Schedule (see the Schedules section of the proposed permit).

Section X: Compliance with Previous Permit *(Variance Reissuances Only)*

A. Date of previous submittal: February 11, 2020 **Date of EPA Approval:** March 26, 2020

B. Previous Permit #: WI-0020311-10-0 **Previous WQSTS #:** (EPA USE ONLY)

C. Effluent substance concentration: 2.71 ng/L (30-day P99) **Variance Limit:** 6.5 ng/L

D. Target Value(s): N/A **Achieved?** ☒ **Yes** ☐ **No** ☐ **Partial**

Condition of Previous Variance	Compliance
Continue to sample influent and effluent as required by the current permit.	☒ **Yes** ☐ **No**
Review sample data and submit annual reports as required by the current permit.	☒ **Yes** ☐ **No**
On a yearly basis, contact and sample the wastewater from two different industries, schools, septic haulers, or nursing home and document the results and make assurance mercury BMPs are followed. All potential contributors will be contacted and sampled at least once during the current permit term.	☒ **Yes** ☐ **No** Annual sampling included facilities and/or collection system MHs and/or lift stations. At least two samples collected annually from these areas.
Continue to update the list of facilities in the mercury PMP plan to keep all the records current.	☒ **Yes** ☐ **No**
Locate and identify new facilities in the collection system that may have mercury related wastes and add them to the current inventory.	☒ **Yes** ☐ **No**
Speak to and send out educational flyers to businesses and the public on a yearly basis promoting the Ashland County's Clean Sweep program and maintaining BMPs.	☒ **Yes** ☐ **No**
Continue to review and update the City Sewer Use Ordinance as needed to keep it relevant.	☒ **Yes** ☐ **No**

City of Mellen
Mercury Final Report and Pollutant Minimization Plan
Revised September 2025 (covers April 1, 2026 – March 31, 2031)

The City of Mellen (City) has developed this mercury final report and pollutant minimization plan (PMP) in accordance with Section 5.1 of WPDES Permit No. WI-0020311-10 (Permit). The City intends to apply for a variance to the water quality-based effluent limit for mercury as part of the permit re-application process, and therefore has included a revised PMP as a condition of the variance for approval by the department and EPA.

1. Background:

As part of a Memo of Understanding with the department, the City developed a Mercury PMP in 2014 to reduce the amount of mercury discharged into the Bad River (this was not a permit condition). Subsequently, a mercury variance was granted as part of the following (current) Permit (effective 4/1/2020) which included an interim limit for mercury (6.5 ng/L) along with implementation of a PMP. Initial PMP efforts were focused on identifying and removing the easy to mitigate mercury that was being discharged into the utility's collection system; however, the City has concluded that due to lack of industrial contributors, dentists, etc., the most likely sources include atmospheric deposition and legacy contamination in the sewer pipes and laterals from past practices. The City looked at the collection system businesses listed by the Department of Public Works (Appendix 1). Most of the businesses listed are not considered a potential source of mercury contribution to the wastewater collection system and additional follow-up beyond educational flyers and inclusion in the Ashland County Clean Sweep program was not needed.

To date, the City identified the following as possible sources of mercury:

School/Businesses

- School District of Mellen (One building housing K - 12)
- Mellen Manor (local nursing home)
- Dental office (now closed, building demolished)

Industries (major industries in Mellen, but unlikely mercury sources)

- Columbia Forest Products (Splicing, Truck Shop, Boiler Room & Flitchwood)
- North Country Lumber
- Superior Kilns

The Utilities will annually document further discussions/status on mercury usage and disposal with these or other businesses identified as potential sources. The City of Mellen businesses and general public also participated in the annual Northwest WI Clean Sweep. This program is held once a year for the community to get rid of all hazardous materials, including mercury. It provides safe hazardous waste collection sites for the general public, businesses, schools, farms, and municipalities.

As part of the Northwest WI Clean Sweep program (which includes Ashland County) there was a focus on the collection of Lake Superior Critical Pollutants, as designated by the Lake Superior Lakewide Management Plan (LaMP); the program also operated mercury thermometer exchange programs at all Lake Superior Basin collection events (citation Northwest WI Clean Sweep).

2. Current Efforts

2.1 Sampling

Sampling efforts during the current permit term are summarized in the following subsections.

2.1.1 WWTP Influent/Effluent Monitoring

A tabular summary and associated graphs from the current permit term are included below:

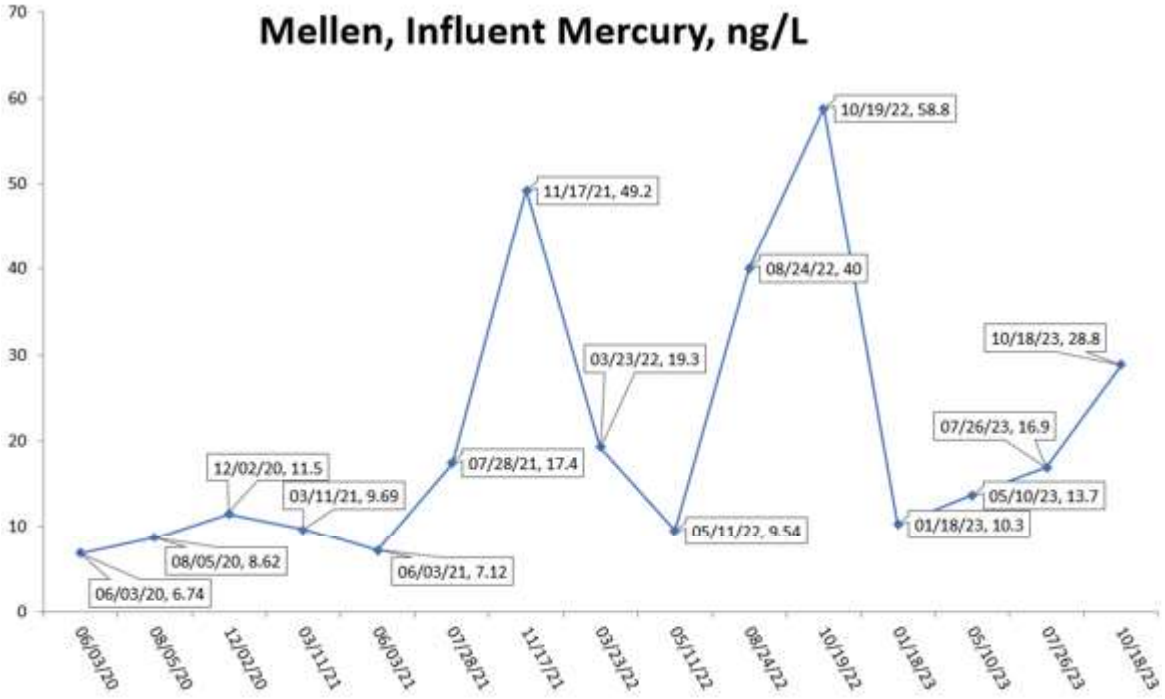
City of Mellen Mercury Summary [1/1/2020-12/31/2023] (current permit term)

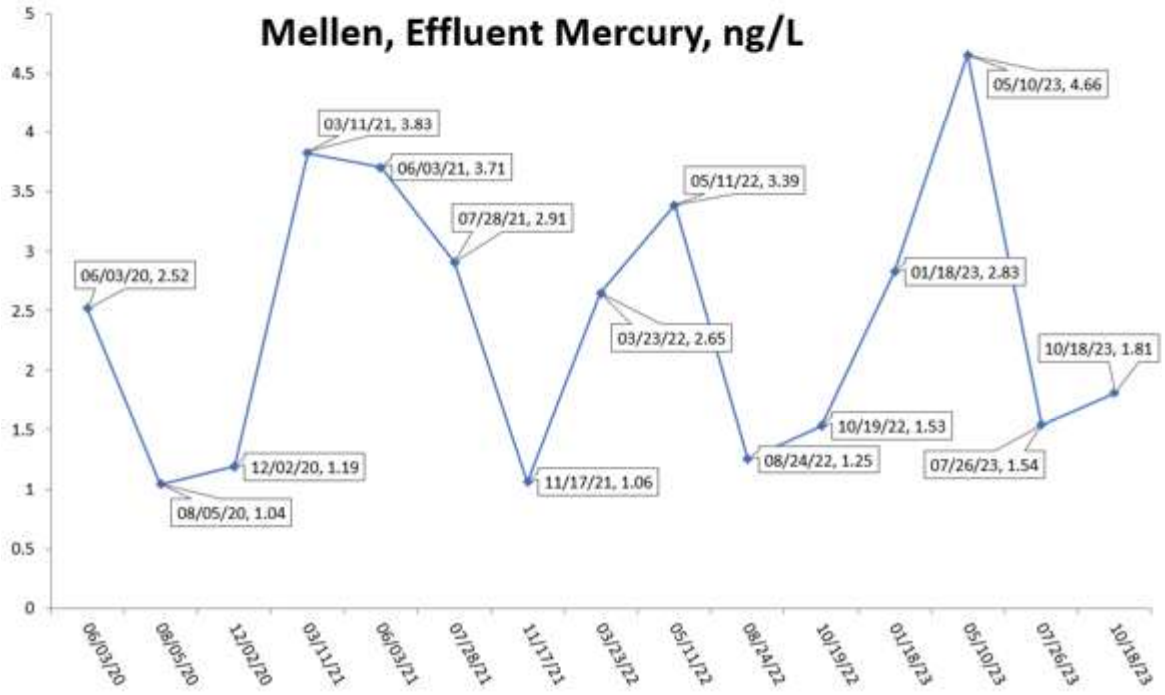
Sample point desc	Sample point	sample date	Mercury, Total Recoverable	parm_unit_type	lod_amt	loq_amt
SURFACE WATER	002	6/3/20	2.52	ng/L	0.2	0.67
SURFACE WATER	002	8/5/20	1.04	ng/L	0.203	0.68
SURFACE WATER	002	12/2/20	1.19	ng/L	0.203	0.681
SURFACE WATER	002	3/11/21	3.83	ng/L	0.205	0.687
SURFACE WATER	002	6/3/21	3.71	ng/L	0.203	0.68
SURFACE WATER	002	7/28/21	2.91	ng/L	0.203	0.508
SURFACE WATER	002	11/17/21	1.06	ng/L	0.203	0.508
SURFACE WATER	002	3/23/22	2.65	ng/L	0.4	1
SURFACE WATER	002	5/11/22	3.39	ng/L	0.2	0.5
SURFACE WATER	002	8/24/22	1.25	ng/L	0.407	1.02
SURFACE WATER	002	10/19/22	1.53	ng/L	0.406	1.02
SURFACE WATER	002	1/18/23	2.83	ng/L	0.406	1.02
SURFACE WATER	002	5/10/23	4.66	ng/L	0.406	1.02
SURFACE WATER	002	7/26/23	1.54	ng/L	0.61	1.52
SURFACE WATER	002	10/18/23	1.81	ng/L	0.609	1.52
FIELD BLANK	102	6/3/20	0.14	ng/L	0.2	0.67
FIELD BLANK	102	8/5/20	0.14	ng/L	0.203	0.68
FIELD BLANK	102	12/2/20	0.14	ng/L	0.203	0.68
FIELD BLANK	102	3/11/21	0.14	ng/L	0.205	0.687
FIELD BLANK	102	6/3/21	0.14	ng/L	0.203	0.68
FIELD BLANK	102	7/28/21	0.14	ng/L	0.203	0.507
FIELD BLANK	102	11/17/21	0.14	ng/L	0.203	0.508
FIELD BLANK	102	3/23/22	0.14	ng/L	0.2	0.5
FIELD BLANK	102	5/11/22	0.14	ng/L	0.2	0.5
FIELD BLANK	102	8/24/22	0.14	ng/L	0.203	0.508
FIELD BLANK	102	10/19/22	0.14	ng/L	0.203	0.508
FIELD BLANK	102	1/18/23	0.14	ng/L	0.203	0.5058
FIELD BLANK	102	5/10/23	0.14	ng/L	0.406	1.02
FIELD BLANK	102	7/26/23	0.14	ng/L	0.203	0.508
FIELD BLANK	102	10/18/23	0.14	ng/L	0.203	0.508
INFLUENT	701	6/3/20	6.74	ng/L	0.2	0.67
INFLUENT	701	8/5/20	8.62	ng/L	0.203	0.68
INFLUENT	701	12/2/20	11.5	ng/L	0.203	0.68
INFLUENT	701	3/11/21	9.69	ng/L	0.205	0.687
INFLUENT	701	6/3/21	7.12	ng/L	0.203	0.68
INFLUENT	701	7/28/21	17.4	ng/L	0.609	1.52
INFLUENT	701	11/17/21	49.2	ng/L	0.203	0.508
INFLUENT	701	3/23/22	19.3	ng/L	1.2	3
INFLUENT	701	5/11/22	9.54	ng/L	0.6	1.5
INFLUENT	701	8/24/22	40	ng/L	1.22	3.05
INFLUENT	701	10/19/22	58.8	ng/L	1.25	3.14
INFLUENT	701	1/18/23	10.3	ng/L	2.51	6.27
INFLUENT	701	5/10/23	13.7	ng/L	1.22	3.04
INFLUENT	701	7/26/23	16.9	ng/L	1.22	3.05
INFLUENT	701	10/18/23	28.8	ng/L	1.22	3.05

NOTE: Analyzed by WI State Lab of Hygiene, Test method: EPA 1631

	annual average, ng/L	
year	Influent	Effluent
2020	8.95	1.58
2021	20.85	2.88
2022	31.91	2.20
2023	17.42	2.71

City of Mellen Mercury Summary [1/1/2020-12/31/2023] (current permit term)





The mercury levels in the influent are still highly variable, even after educating and reaching out to the community. The results vary with seasons as well as atmospheric conditions. There is usually an influent spike in the fall, which corresponds with less flow. The slower flow is mainly from less rain and therefore less I/I. This leads us to believe there is a more concentrated amount of Legacy contamination or an unidentified source. Going forward it would be helpful to do collection system sampling during these 4th quarter spikes to possibly pinpoint sources.

2.1.2 Collection System/Source Identification Sampling.

Year 1 (2020):
- Mellen School Manhole = 20.5 ng/L
- CFP Boiler Lift Station = 2.9 ng/L

Year 2 (2021):
- Mellen School Manhole = 41.6 ng/L
- CFP Splicing Lift Station = 7.6 ng/L

Year 3 (2022):
- Mellen School inside sewer access = 0.7 ng/L
- Lincoln Drive Lift Station (public collection system) = 34.8 ng/L
- Lake Drive Lift Station (public collection system) = 22.3 ng/L

Year 4 (2023):
- Lincoln Drive Lift Station = 3.9 ng/L
- Lake Drive Lift Station = 6.3 ng/L

In years 1 and 2, the school was sampled from the manhole downstream of the school and in year 3 the school was sampled from access point inside the school. In year 1, the sample was taken on 3/11/2021 and in year 2, the sample was taken on 4/20/2022, school was in session but there was very low flow requiring a lengthy amount of time to fill sample bottles. In year 3, the samples were taken on 1/18/2023 inside the school and samples were filled quicker. The time taken as well as flow could explain possible legacy and higher concentrations.

In year 3, the collection system lift stations on Lake Dr and Lincoln Dr were sampled for a baseline and in year 4 were sampled again after 0.4 miles of sewer pipe was replaced during Hwy 13 construction project, including the line by the former dentist office. The building containing the former dentist office has been demolished and the property is owned by the city. The sewer lateral was capped off and if any future building takes place, a new line will be implemented.

2.2 Clean Sweep

The City continued promoting and participating in annual clean sweep events coordinated by Northwest WI Clean Sweep (including Ashland County). See attached summary of clean sweep promotional materials and recent accomplishments.

2.3 Collection System Maintenance

As mentioned previously, 0.4 miles of sewer main were removed during a 2023 highway 13 construction project. The lateral from the former dentist office is capped off and will not be sued again. If there is future construction there, the lateral will be removed by the utility department.

Future Plans:

3.1 Sampling/Source Identification

Based on results of influent sampling, peak concentrations appear to occur during the fourth quarter (refer to graph above). Therefore, the city will try to perform the additional sampling of businesses and/or collection system during this same time period going forward.

CFP – Results from the two CFP lift stations (Boiler and Splicing) were fairly low, so future sampling from CFP will include the Truck Lift and Flitchwood. The city will sample the remaining lift stations at CFP (1 each year). Sampling will also include 1 sample per year [upstream?] from the Lake Drive and Lincoln Drive lift stations to determine direction of higher levels.

Collection system – the sampling plan will focus on areas of former businesses each year that could have been a contributor to the Legacy deposits. This will include lift stations and manholes in older parts of town and areas with higher I/I. The plan will be adjusted as needed to prioritize higher sample results.

School Manholes and Laterals- elevated concentrations were reported from the manhole located downstream of the school, but concentrations were very low in areas sampled from inside the school. Therefore, legacy contamination may be present in the lateral between the school and the downstream manhole. The city will coordinate cleaning of this lateral and manhole and dispose of associated cleaning debris at a licensed landfill. Additional sampling from the associated manhole will be performed the following year (i.e. after the cleaning event) to recheck for elevated concentrations and effectiveness of the cleaning event for source removal.

Hauled Waste has been stopped for the foreseeable future in Mellen.

3.2 Source Cleaning

Similar to the school (described above), if a potential source of legacy contamination is discovered in the collection system, laterals, or lift stations, the city will coordinate a cleaning event to address the source. Resampling will occur the following year from the same location to verify removal of the source.

3.2 CMOM implementation

The city believes the two primary sources of mercury appear to be legacy contamination and atmospheric deposition. Atmospheric deposition sources can best be addressed through the reduction of inflow and infiltration (I/I) into the collection system. The city will continue to implement the CMOM program to identify, evaluate and address I/I. Future efforts to upgrade the collection system deficiencies that are found will be performed to the extent they are economically feasible. CMOM activities being planned in 2025 include cleaning and televising three river crossings. The plan (subject to change) for 2026 includes cleaning the city owned lift stations and making some necessary upgrades to these stations.

The city will increase frequency of cleaning/jetting of collection system piping to address potential legacy contamination and prioritizing older lines.

There is more road construction planned in and around Mellen over the next couple of years and the city will look to make upgrades to our collection system as that occurs.

3.3 Education and Outreach

Over the next permit term, the city will continue its current outreach education to the community. This will include promoting and participating in the annual Northwest WI Clean Sweep program and/or Ashland County.

3.4 Sewer Use Ordinance

Mercury levels are not explicitly identified in individual provisions in the SUO, but general provisions are included to protect the WWTP (current SUO is attached). Review annually and update SUO as needed to keep it relevant.

3.5 WWTP Additives

The City does not currently use additives in their wastewater treatment process. Any new additives will be analyzed for mercury content before using/approving that additive.

City of Mellen
Mercury Final Report and Pollutant Minimization Plan
Revised September 2025 (covers April 1, 2026 – March 31, 2030)

PMP Activities	1st Year	2nd Year	3rd Year	4th Year	5th Year
1. Industry/Business Potential Source Sampling					
a. Evaluate and update list of businesses identified as potential sources. Annually contact each and document status.	X	X	X	X	X
b. Develop a sampling plan for evaluating the entities identified as being a potential source.	X				
c. Update list of facilities to keep records current. Update sampling plan as needed.		**	**	**	**
d. Implement sampling plan (sample from 1 different entity annually).		**	**	**	**
e. If elevated concentrations of mercury are identified, coordinate with the entity to identify/confirm possible source and how best to address the source.		**	**	**	**
2. Address Previously Identified Potential Source – Mellen School					
a. Coordinate with school to clean lateral and manhole	X				
b. Resample from same manhole		X			
c. If results continue to be elevated, reassess potential source			**	**	**
3. Collection System Sampling +					
a. Develop a sampling plan for evaluating mercury sources (current users and legacy deposits) within the collection system. This will include lift stations, and other manholes located in older parts of town, areas of heavy I/I, and potential key locations as the focus for monitoring. Re-prioritize plan annually based on sample results (i.e. move upstream from sample location).	X	X	X	X	X
b. Implement sampling plan (sample from 2 different areas annually).		**	**	**	**
c. Coordinate sewer main/lateral cleaning of suspected areas if identified. Cleaning debris will be collected and landfilled.			**	**	**

4. Capacity, Management, Maintenance & Operation (CMOM) ++					
a. Continue to implement O&M actions identified in the City's CMOM to reduce the amount of clear water (atmospheric mercury source) entering the system.	X	X	X	X	X
5. Education and Outreach					
a. Promote and Participate Clean Sweep Program	X	X	X	X	X
6. Sewer Use Ordinance					
a. Mercury levels are not explicitly identified in individual provisions in the SUO, but general provisions are included to protect the WWTP (current SUO is attached). Review and update SUO as needed to keep it relevant.	X	X	X	X	X
7. WWTP Additives					
a. Any new additives used in the wastewater treatment process will be evaluated for mercury content before using/approving the additive	X	X	X	X	X

Notes:

+ Annual sampling will be conducted during the 4th quarter based on previously collected influent sample results.

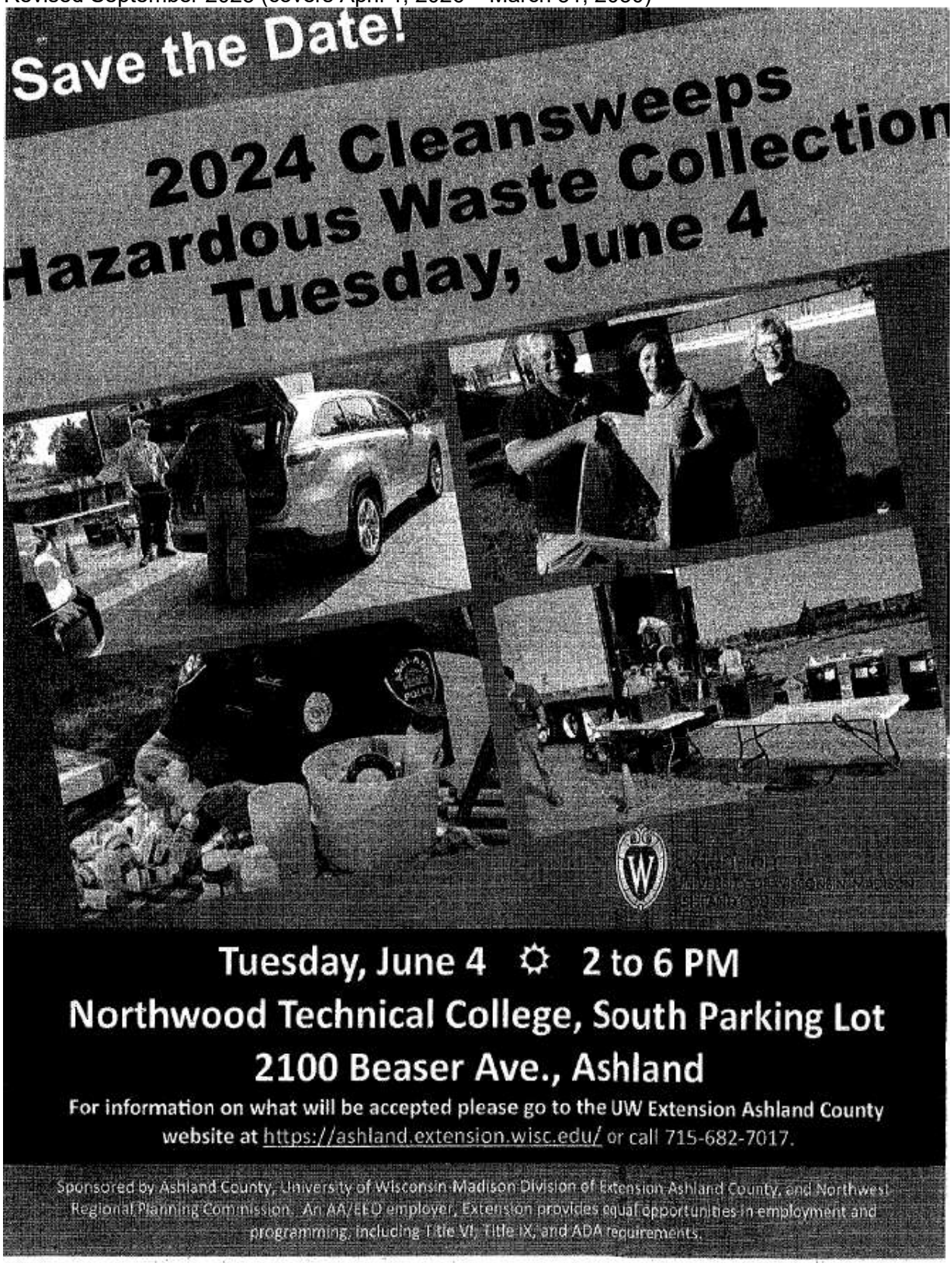
++ At a minimum, annual evaluation of CMOM program/goals will be performed through the Compliance maintenance annual report (CMAR). Deficiencies will be addressed as funding allows.

X Indicates action taken/started this year

** Indicates follow-up action that will be taken depending on previous results – see detailed descriptions.

Appendix 1 Commercial Facilities

Business	Address	Category
Ashland Co Housing Authority	124 Wilderness Dr	Office Building
Bottom's Up	530 Lake Dr	Taverns/Restaurants/Apartment
Bro's Bar	125 E Bennett Ave	Restaurant/Apartment
Canadian National	200 S Main St	Railroad office-vacant
Cenex	123 Wilderness Drive	Gas Station/grill/groceries
Centurylink	111 W Bennett Ave	Phone Company
Congregational U C C	117 S West St	Churches
Copper Ridge	129 E Bennett Ave	Bar & Grill
Dennis Rudie	115 N Main St	Motels
Dusty's Bar & Grill	351 Lake Dr	Taverns/Restaurants
E Fuller Inc	631 Crestview Ln	Apartment Referral Service
Elk River Properties	620 West Layman Dr	DNR Building
Evie Jokinen	117 E Bennett Ave	Apt Building
Express Mart	302 S Main St	Vacant Building
Holy Rosary Church	217 N Main St	Churches
Immanuel Lutheran Church Missouri	101 Thomas St	Churches
Jake Peters Logging	630 Lake Dr	Logging Garage
JRH Pharma	417 Olson Road	Business Building
Jeff Delegan	127 S Main St	Company Misc Office
Iron City Laundromat	107 S Main St	Laundromat
James Padjen	109 S Main St	Vacant bldg
Copper Falls Assisted Living	450 Lake Dr	Assisted Living Center
Mellen Weekly Record	116 E Bennett Ave	Newspapers
Mountain Funeral Home	220 Hillcrest Dr	Funeral Home Service/Apartment
Northern Highlights/Rudie Builders	107 N Main St	Beauty Salons/Construction
Northern State Bank	103 N Main St	Banks
Northland Foods	108 S Main St	Groceries
Northland Foods Car Wash/Vacant side building	120 S Main St	Car Wash & vacant office bldg
Salem Baptist Church	721 Fayette Ave	Church
Steve Padjen Black Granite	100 S Main St	Vacant bldg
Superior Choice Credit Union	117 S Main St	Credit Unions
Joe Kalmon	105 S Main St	Office/Apartment
Tom's Auto Repair	305 N Main St	Automobile - Repairs & Services
Tri-M Sanitary-Recycling	450 Olson Rd	Recycling Services
US Postal Service/Jokinen Apts	121 E Bennett Ave	Post Office/Apt Bldg
Vallis Fisher	109 E Bennett Ave	Apt bldg/empty front space
Jake Peters Logging LLC	425 Olson Road	Logging Company Garage


Save the Date!
2024 Cleansweeps
Hazardous Waste Collection
Tuesday, June 4
Tuesday, June 4 ☼ 2 to 6 PM
Northwood Technical College, South Parking Lot
2100 Beaser Ave., Ashland
For information on what will be accepted please go to the UW Extension Ashland County website at https://ashland.extension.wisc.edu/ or call 715-682-7017.
Sponsored by Ashland County, University of Wisconsin-Madison Division of Extension Ashland County, and Northwest Regional Planning Commission. An AA/EEO employer, Extension provides equal opportunities in employment and programming, including Title VI, Title IX, and ADA requirements.

NORTHWEST CLEANSWEEP

2024 NW Wisconsin Hc Hazardous Waste Collectic

DATE	COUNTY	LOCATION	TIME	
Tuesday, June 4th	Ashland	**City of Ashland** – Northwood Technical College, 2100 Beaser Ave., south parking lot	2:00 pm – 6:00 pm	Lissa Radke Ashland Cou Extension
Wednesday, June 5th	Taylor	**Medford** – Taylor County Fairgrounds, State Hwy 13 & WI-64 (No RX)	10:00 am – 2:00 pm	Kyle Noonar Taylor Coun Department
Tuesday, June 25th	Rusk	**Ladysmith** - County Hwy Shop, 500 W 9th St S	2:00 pm – 6:00 pm	Charmaine R Rusk County
Wednesday, June 26th	Burnett	**Siren** - Burnett Co. Hwy Shop 8150 St. Rd. 70	11:00 am – 3:00 pm	Autumn Tho NWRPC
Thursday, June 27th	Washburn	**Spooner**- HHW Site, 1650 Cottonwood Ave (No Rx)*	10:00 am – 2:00 pm	Autumn Tho NWRPC
Saturday, July 20th	Douglas	**Town of Parkland** – Parkland Town Hall 6221 E Veterans Drive, South Range	8:00 am – 12:00 pm	Autumn Tho NWRPC
Tuesday, September 24th	Price	**Park Falls**- St. Croix Rod and Gun Corp, 856 4th Ave N (no Rx)*	2:00 pm – 6:00 pm	Evan Lund Price County Conservatior
Tuesday, September 25th	Sawyer	**Hayward** – Sawyer County Fairgrounds 14655 Co. Hwy B	2:00 pm – 6:00 pm	Ariga Grigor Sawyer Cou Extension
Wednesday, September 28th	Bayfield	**Northern Great Lakes Visitor Center** - 29270 County Highway G – Town of Eileen (No RX)	8:00 am – 12:00 pm	Meagan Qua Renz Bayfield Cou Emergency I

CLEANSWEEP WILL ACCEPT

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
Bureau of Agrichemical Management
PO Box 8911 ⊕ Madison WI 53708-8911
Phone: (608) 224-4545 ⊕ Email: DATCPcswp@wisconsin.gov

2023 Wisconsin Clean Sweep Ag and/or HHW Collection Waste Summary

Grant Recipient: Northwest Regional Planning Commission - Ashland County

Grant Type: ☐ Temporary ☐ Continuous ☐ Permanent

HHW: Estimated households in collection area

Number of HHW Participants — Percent HHW Participation

AG: Estimated Farms in collection area — Number of Ag Participants

Percent Ag Participation

VSQG: Total number VSQG participants — Total receiving 50% ag subsidy

Note: If this is a multi-municipal/tribal collection, consolidate all collections on this sheet.

HHW Waste Data

Item	Total Weight (lbs.)
Pesticides/Poisons	1108
Lead/Oil Paint	1062
Caustics/Corrosives	205
Reactives	134
Solvents/Thinners	3500
Waste Oil	
PCBs	
Aerosol Cans	565
Mercury	18
Dioxins	
Latex Paint	
Other	788
Total ALL Collected Chemicals (lbs.)	**7380**
Average Weight Collected Per Participant (lbs.)	

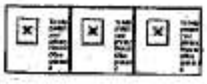
Ag Waste Data

Item	Total Weight (lbs.)
Agricultural waste collected	0
Average weight per participant (lbs.)	

VSQG Wastes

Item	Total Weight (lbs.)
VSQG Wastes Collected (Non-subsidized collected waste)	1640
VSQG Subsidized Waste (50% DATCP subsidized waste)	0
Avg. weight per VSQG participant	

Ashland WI 54806
715-682-7017
Lissa.radke@wisc.edu



SAVE THE DATE! FEED Summit - Green Bay, November 13-14, 2023: https://go.wisc.edu/234ov5

From: Autumn Thome
Sent: Wednesday, August 23, 2023 8:34 AM
To: Lissa.radke@wisc.edu
Cc: Ashtin Gronning <agronning@nwrpc.com>
Subject: Ashland Co 2023 HHW Event Information

Attached is the weight summary from the 2023 HHW event. There was no reported Ag and no VSQG businesses attending the event this year.
Below is additional county/weight summaries:

4' and under 398
5' and over 99
Fluorescent Compacts 210
Standard Incandescent 129

Lithium Ion battery 51 lbs.
Lithium Primary battery 6 lbs.
NiCad Batteries: 187 lbs

CRTS/E-Scrap 112 lbs

Controlled Meds: 223 lbs
Non-Controlled Meds: 68 lbs

Please send me the number of HHW event/participants as I will need that for my reporting and to complete the attached Waste Summary Information documentation.

Autumn Thome