



WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
**PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

Georgia-Pacific Broadway LLC

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility
located at
1919 S Broadway, Green Bay, WI
To
**the lower Fox River (Fox River-Frontal Green Bay Watershed, Lower Fox Basin)
in Brown County**

in accordance with the effluent limitations, monitoring requirements and other conditions set
forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources
For the Secretary

By

Jason Knutson
Wastewater Supervisor

Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE - July 01, 2023

EXPIRATION DATE – June 30, 2028

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1 Influent Requirements - Cooling Water Intake Structure (CWIS)

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
703	INTAKE: Lower Fox River water intake structure for process, non-contact cooling and fire protection water located on the west bank of the Lower Fox River. The permittee shall continuously monitor the flow rate of intake water prior to use at the facility via an in-channel, transit-time flow meter located approximately 35-feet downstream from the cooling water intake structure's expanded metal fish screen.

1.2 Monitoring Requirements and BTA Determinations

The permittee shall comply with the following monitoring requirements.

The intake(s) has been reviewed for compliance with BTA (Best Technology Available) standards and the BTA determination(s) is listed below.

1.2.1 Sampling Point 703 - Fox River Intake Structure

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate	Daily Max - Variable	MGD	Daily	Continuous	Report max daily flow rate in MGD.
Flow Rate, Variable Limit		MGD	Daily	Calculated	Calculate MGD limit daily using equation in section 1.3.3.1. Report calculated value in eDMR.
Intake Water Used Exclusively For Cooling		Percent	Daily	Calculated	

1.2.1.1 CWIS - Authority to Operate and Description

The permittee shall at all times properly operate and maintain all water intake facilities. The permittee shall give advance notice to the Department of any planned changes in the location, design, operation, or capacity of the intake structure. The permittee is authorized to use the cooling water intake system which consists of the following:

- Location: West bank of the Lower Fox River at a latitude of 49° 29' 29.84" N and a longitude of 88° 01' 49.17" W.
- General Description: The facility's intake structure was built in 1959 and operates continuously 24 hours per day, 365 days a year, except during rare mill outage events that require suspension of intake use. The structure interfaces with the Fox River at a constructed opening at the shoreline of the facility's property and consists of a 16.33-foot-wide and 28-foot-deep channel bounded by z-type sheet pile walls.
- Major Components: There are two river intake screens in addition to two traveling screens on the 51 Building Condenser pumps. The first screen in the process is a coarse bar screen that is designed to prevent large

floatables from entering the river intake. The second screen spans the entire flow through area of the intake for the purpose of preventing fish and other wildlife from being caught in the river intake. The first screen is a bar type design which is submerged from three to eight feet on average. The second screen is a diamond shaped expanded metal screen with a solid plate bottom designed to embed into the bottom to prevent undercutting of the screen. The screen is submerged to an approximate depth of 18 ft during low water conditions. The diamond shaped expanded metal screen is constructed of 13 gauge stainless steel with 3/4 inch openings. The screen is removed from the intake and manually cleaned and inspected twice per year to remove debris and zebra mussels as well as to make any repairs. Intake flow is monitored by an in-channel meter centered in a baffle plate along the intake, located 35 feet downstream from the fish screen.

After the intake flow meter, building 145 pump house draws water from the channel for cooling operations and two emergency fire pumps in buildings 142 and 144 also draw water from the channel. Water not drawn from these pumps continue down the channel to a second bar screen, designed similarly to the coarse bar rack at the head of the intake channel. The channel terminates at building 51 pump house, where there is a pair of traveling screens measured 7 feet in width and submerged at a minimum of 13.5 feet and maximum of 15.5 feet. Building 51 traveling screens are rotated and cleaned periodically each day.

The permittee recirculates a portion of its effluent flow back to the intake channel for re-use as cooling water. This allows the permittee to only withdraw the amount of river water necessary to make up the facility's cooling needs, thereby minimizing entrainment impacts.

- Maximum Design Intake Flow (DIF): 82.2 MGD.
- Maximum Through-Screen Design Intake Velocity: 0.97 feet/sec

1.2.1.2 Cooling Water Intake BTA (Best Technology Available) Determination

The cooling water intake is not BTA for minimizing adverse environmental impacts associated with impingement mortality, in accordance with the requirements in s. 283.31(6), Wis. Stats., and section 316(b) of the Clean Water Act, and therefore, the facility is required to complete actions included in Schedule 4.1 for the installation of BTAs for impingement mortality. The department has determined that the cooling water intake structure's current operation, by which water is recycled to limit the volume of river water withdrawn to the facility's thermal needs, is BTA for minimizing adverse environmental impacts associated with entrainment.

1.3 Cooling Water Intake Structure Standard Requirements

The following requirements and provisions apply to all water intake structures identified as sampling points in subsection 1.1.

1.3.1 Future BTA for Cooling Water Intake Structure

BTA determinations for entrainment and impingement mortality at cooling water intake structures will be made in each permit reissuance, in accordance with s. NR 111, Subch. II, Wis. Code. **In subsequent permit reissuance applications, the permittee shall provide all the information required in s. NR 111.41 (1), (2), and (8) to (12) and applicable provisions of s. NR 111.41 (3) to (7), Wis. Code.**

Also include an alternatives analysis report for compliance with the entrainment BTA requirements with the permit application. This alternatives analysis for entrainment BTA shall examine the options for compliance with the entrainment BTA requirement and propose a candidate entrainment BTA to the Department for consideration during its next BTA determination. The analysis must, at least narratively, address and consider the factors listed s. NR 111.13(2)(a) and may consider the factors listed in s. NR 111.13(3), Wis. Adm. Code. The analysis must evaluate, at a minimum, closed-cycle recirculating systems, fine mesh screens with a mesh size of 2mm or smaller, variable speed pumps, water reuse or alternate sources of cooling water, and any additional technology identified by the department at a later date.

Exemptions from some permit application requirements are possible in accordance with s. NR 111.42(a), Wis. Adm. Code, where information already submitted is sufficient. If an exemption is desired, a request for reduced application material requirements must be submitted at least 2 years and 6 months prior to permit expiration. Past submittals and previously conducted studies may satisfy some or all of the application material requirements.

1.3.2 Visual or Remote Inspections

The permittee shall conduct a weekly visual inspection or employ a remote monitoring device during periods when the cooling water intake is in operation. The inspection frequency shall be weekly to ensure the intakes are maintained and operated to function as designed.

1.3.3 Reporting Requirements for Cooling Water Intake

The permittee shall adhere to the reporting requirements listed below:

1.3.3.1 Variable Flow Rate Limit

The permittee shall calculate the variable flow rate limit as such:

- $Q_{\text{limit}} = 0.5 \text{ fps} \times A \times P \times 0.65$

where:

Q_{limit} = variable flow rate limit in MGD

A = wetted screen area in ft²

P = screen open area percentage divided by 100

0.65 = conversion factor going from ft³ to MGD

When determining the daily MGD variable limit, the facility may use the most up to date, verified daily hourly low elevation of the Fox River received from the NOAA prior to DMR submission to calculate the wetted screen area.

1.3.3.2 Annual Certification Statement and Report

The permittee shall submit an annual certification statement signed by the authorized representative with information on the following, no later than January 31st for the previous year:

- Certification that water intake structure technologies are being maintained and operated as set forth in this permit, or a justification to allow a modification of the practices. Include a summary of the required Visual or Remote Inspections.
- If there are substantial modifications to the operation of any unit that impacts the cooling water withdrawals or operation of the water intake structure, provide a summary of those changes.
- If the information contained in the previous year's annual certification is still applicable, the certification may simply state as such.

1.3.4 Intake Screen Discharges and Removed Substances

Floating debris and accumulated trash collected on the cooling water intake trash rack shall be removed and disposed of in a manner to prevent any pollutant from the material from entering the waters of the State pursuant to s. NR 205.07 (3) (a), Wis. Adm. Code, except that backwashes may contain fine materials that originated from the intake water source such as sand, silt, small vegetation or aquatic life.

1.3.5 Endangered Species Act

Nothing in this permit authorizes take for the purpose of a facility's compliance with the Endangered Species Act. Refer to s. NR 111.16, Wis. Adm. Code.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
110	Field blank for mercury. The permittee shall take the field blank at the same time and location as the mercury effluent sample.
105	EFFLUENT: The permittee shall continuously monitor flow rate of the wastewater from Mill Sewer Clarifier #5 at the 3-foot Parshall flume adjacent to Mill Sewer Clarifier #5 prior to combining with effluent from either Secondary Clarifier #1 or Tertiary Clarifier #2 when effluent is directed to Outfall 001.
111	EFFLUENT: The permittee shall continuously monitor flow rate of the wastewater from Secondary Clarifier #1 at the 2-foot Parshall flume adjacent to Secondary Clarifier #1 prior to combining with effluent from either Tertiary Clarifier #2 or Mill Sewer Clarifier #5 when effluent is directed to Outfall 001.
112	EFFLUENT: The permittee shall continuously monitor flow rate of wastewater from Tertiary Clarifier #2 at the 1.5-foot Parshall flume adjacent to Tertiary Clarifier #2, prior to combining with effluent from either Secondary Clarifier #1 or Mill Sewer Clarifier #5 when effluent is directed to Outfall 001.

2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

2.2.1 Sampling Point 110 - MERCURY FIELD BLANK

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Quarterly	Blank	

2.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2.2.2 Sampling Point 105 - Clarifier #5 Discharge to 001; 111- Clarifier #1 Discharge to 001, and 112- Clarifier #2 Discharge to 001

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	

3 Surface Water Requirements

3.1 Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
001	EFFLUENT: Outfall 001 has three submerged outlets and is located on the west bank of the Fox River, 1.1 miles downstream (north) of the Highway 172 bridge and approximately 4.0 miles south of the mouth of the Lower Fox River at Green Bay. Representative samples of the combined discharge from Secondary Clarifier #1, Tertiary Clarifier #2 and Mill Sewer Clarifier #5 shall be sampled after mixing, but prior to discharge to the Fox River via Outfall 001. 24-hr Flow proportional composite samples and grab samples shall be collected in the Outfall 001 sample building. Flow rate shall be calculated by adding flow rates measured at points 105, 111, and 112 when discharge is directed to Outfall 001. Mass-based limits shall be calculated from concentrations measured by the 24-hr flow proportional composite sampler.
002	EFFLUENT: Outfall 002 is located on the west bank of the Fox River, 1.25 miles downstream (north) of the Highway 172 bridge and 3.9 miles south of the mouth of the Lower Fox River at Green Bay. Power plant noncontact cooling water shall be sampled prior to discharge to the Fox River via Outfall 002. 24-hr Flow proportional composite samples shall be collected from the sample tub in the basement of 55 building that is fed from the Outfall 002 catch basin on the north side of 55 building. Flow rate shall be monitored by meters installed on the discharge piping east of 51 building. Mass-based limits shall be calculated from concentrations measured by the 24-hr flow proportional composite sampler.

3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 - Treated Effluent

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Calculated	
BOD ₅ , Total		mg/L	3/Week	24-Hr Flow Prop Comp	
BOD ₅ , Total	Daily Max	28,247 lbs/day	3/Week	Calculated	TBEL. See section 3.2.1.1.
BOD ₅ , Total	Monthly Avg	14,879 lbs/day	3/Week	Calculated	TBEL. See section 3.2.1.1.
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Daily Max	1,497 lbs/day	3/Week	Calculated	See section 3.2.1.1.
Suspended Solids, Total	Monthly Avg	708 lbs/day	3/Week	Calculated	See section 3.2.1.1.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
pH (Minimum)	Daily Min	6.0 su	Daily	Continuous	See section 3.2.1.2.
pH (Maximum)	Daily Max	9.0 su	Daily	Continuous	See section 3.2.1.2.
pH Exceedances Greater Than 60 Minutes	Monthly Total	0 Number	Daily	Calculated	See section 3.2.1.2.
pH Total Exceedance Time Minutes	Monthly Total	446 minutes	Daily	Calculated	See section 3.2.1.2.
Phosphorus, Total	Rolling 12 Month Avg	1.0 mg/L	4/Week	24-Hr Flow Prop Comp	TBEL.
Phosphorus, Total	Monthly Avg	61.4 lbs/day	4/Week	Calculated	
Phosphorus, Total	6-Month Avg	20.5 lbs/day	4/Week	Calculated	
Mercury, Total Recoverable	Daily Max	3.3 ng/L	Quarterly	Grab	Alternative effluent limit. See sections 3.2.1.3 and 3.2.1.4.
Chlorine, Total Residual		µg/L	Monthly	Grab	Monitoring only when chlorine is in use.
PFOS		ng/L	Monthly	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
PFOA		ng/L	Monthly	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
Acute WET		TU _a	See Listed Qtr(s)	24-Hr Flow Prop Comp	See section 3.2.1.9.
Chronic WET	Monthly Avg	11 TU _c	See Listed Qtr(s)	24-Hr Flow Prop Comp	See section 3.2.1.9.
Flow River		cfs	Daily	Continuous	WLA Monitoring is required May-October only. See section 3.2.1.10.
WLA Previous 4 Day Avg River Flow		cfs	Daily	Calculated	WLA Monitoring is required May-October only. See section 3.2.1.10..
WLA Previous Day River Temp		deg F	Daily	Continuous	WLA Monitoring is required May-October only. See section 3.2.1.10.
WLA Value		lbs/day	Daily	Calculated	WLA Monitoring is required May-October only. See section 3.2.1.10.
WLA Adjusted Value		lbs/day	Daily	Calculated	WLA Monitoring is required May-October only. See section 3.2.1.10.
WLA BOD ₅ Discharged		lbs/day	3/Week	Calculated	WLA Monitoring is required May-October only. See section 3.2.1.10.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
WLA 7 Day Sum Of WLA Values		lbs/day	Daily	Calculated	WLA Monitoring is required May-October only. See section 3.2.1.10.
WLA 7 Day Sum Of BOD ₅ Discharged		lbs/day	Daily	Calculated	WLA Monitoring is required May-October only. See section 3.2.1.10.

3.2.1.1 Sample Frequency for BOD₅ and Total Suspended Solids

The monitoring frequency for BOD₅ at Sampling Point 001 shall be 5 times per week for the entire month that follows a month during which the monthly average discharge concentration of BOD₅ exceeds the monthly average limitation of 14,879 lbs/day.

The monitoring frequency for Total Suspended Solids (TSS) at Sampling Point 001 shall be 5 times per week for the entire month that follows a month during which the monthly average discharge concentration of TSS exceeds the monthly average limitation of 708 lbs/day.

Without public notice, the department may modify this permit to increase the monitoring frequency for BOD₅, TSS, or both, should the permittee exceed effluent limitations for one of the parameters, fail to submit Discharge Monitoring Reports, or is subject to formal enforcement action.

3.2.1.2 Continuous pH Monitoring

The permittee shall maintain the pH of the discharge within the range of 6.0 to 9.0 standard units (s.u.) except excursions are permitted subject to the following conditions:

- The pH is monitored continuously;
- The total time during which the pH is outside the range of 6.0 to 9.0 s.u. shall not exceed 446 minutes in any calendar month;
- No individual pH excursion outside the range of 5.0 to 9.0 s.u. shall exceed 60 minutes in duration;
- No individual pH excursion shall be outside the range of 5.0 to 9.0 s.u.; and
- On a daily basis, the permittee shall report the minimum and maximum pH, the total time that the pH is outside the range of 6.0 to 9.0 s.u. and the number of pH excursions outside the range of 6.0 to 9.0 that exceed 60 minutes in duration.

3.2.1.3 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.1.4 Mercury Variance – Implement Pollutant Minimization Program Plan

This permit contains a variance to the water quality-based effluent limit (WQBEL) for mercury approved 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 table above, (b) implement the mercury pollutant minimization measures specified below, (c) follow the Pollutant Minimization Program Plan dated January 23,

2018, including actions and timelines listed in the revised Appendix C PMP Grid dated October 1, 2022, and (d) perform the actions listed in the schedule. (See the Schedules section herein.)

Mercury pollutant minimization measures:

- Continue to educate and train employees concerning the safety and environmental hazards of mercury and reduction strategies being implemented at the facility.
- Continue to make suppliers aware of mercury reduction efforts while screening all chemicals through the new substance review process, focusing on mercury data collection.
- Identify any remaining mercury-containing devices and replace them as appropriate.
- Analyze raw materials for mercury content and develop strategy to minimize process introduction to facility discharge.
- Implement sampling and testing plan for various process wastewaters and provide those results in the form of a mass balance.
- Submit annual progress reports of actions performed during the year and their results.

3.2.1.5 Use of Chlorophenolic-Containing Biocides

Pursuant to s. NR 284.12(2)(b), Wis. Code, the permittee shall certify in writing to the department at the end of this permit cycle that chlorophenolic-containing biocides are not used in facility operations. Should the permittee decide to use chlorophenolic-containing biocides during this permit term, this permit must be modified to include pentachlorophenol (PCP) and trichlorophenol (TCP) effluent limitations. Until PCP and TCP effluent limitations are included in the permit, use of chlorophenolic-containing biocides is prohibited. For information on the certification procedure, see the Schedules section of this permit.

3.2.1.6 Additives

The permittee shall maintain a record of the dosage rate of all additives used on a monthly basis. The additives may be changed during the term of the permit following procedures in the 'Additives' subsection of the Standard Requirements.

3.2.1.7 PFOS/PFOA Sampling and Reporting Requirements

For grab samples, as defined per s. NR 218.04(10), Wis. Adm. Code, a single sample at a location as defined by the sample point description shall be taken during the time of the day most representative to capture all potential discharges. If extra equipment besides the sample bottle is used to collect the sample, it is recommended that a one-time equipment blank is collected with the first sample. An equipment blank would be collected by passing laboratory-verified PFAS-free water over or through field sampling equipment before the collection of a grab sample to evaluate potential contamination from the equipment used during sample.

If any equipment blanks are performed, these results shall be reported in the comments section of the eDMR and shall also be documented in the reports submitted as part of the PFOS/PFOA Minimization Plan Determination of Need schedule of the permit.

3.2.1.8 PFOS/PFOA Minimization Plan Determination of Need

The permittee shall monitor PFOS and PFOA as specified in the table above and report on the effluent concentrations including trends in monthly and annual average PFOS and PFOA concentrations as specified in the PFOS/PFOA Minimization Plan Determination of Need Schedule.

If, after reviewing the data, the Department determines that a minimization plan for PFOS and PFOA is necessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the department will notify the permittee in writing that a PFOS and PFOA minimization plan that satisfies the requirements in s. NR 106.99, Wis. Adm. Code, is required. The permittee shall submit an initial plan for department approval no later than 90 days after

written notification was sent from the department in accordance with s. NR 106.985(2)(a), Wis. Adm. Code. Pursuant to s. NR 106.985(2)(b), Wis. Adm. Code, as soon as possible after department approval of the PFOS and PFOA minimization plan, the department will modify or revoke and reissue the permit in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to include the PFOS and PFOA minimization plan and other related terms and condition.

If, however, the Department determines that a PFOS and PFOA minimization plan is unnecessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the Department shall notify the permittee that no further action is required. Per s. NR 106.98(3)(a), Wis. Adm. Code, the department may reduce monitoring frequency to once every 3 months (quarterly) on a case-by-case basis, but only after at least 12 representative results have been generated. If the permittee requests a reduction in monitoring and the department agrees a reduction would be appropriate, the permit may be modified in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to incorporate this change.

3.2.1.9 Whole Effluent Toxicity (WET) Testing

Primary Control Water: Lower Fox River

Instream Waste Concentration (IWC): 9%

Dilution series: At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.
- **Chronic:** 100, 30, 10, 3, 1% and any additional selected by the permittee.

WET Testing Frequency:

Acute tests shall be conducted twice each year, in rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Acute:** July 01- September 30, 2023; April 01- June 30, 2024; October 01- December 31, 2024; January 01- March 31, 2025; and July 01- September 30, 2025; April 01- June 30, 2026; October 01- December 31, 2026; January 01- March 31, 2027; July 01- September 30, 2027; and April 01- June 30, 2028.

Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next tests would be required in July 01- September 30, 2028; and January 01- March 31, 2029.

Chronic tests shall be conducted twice each year, in rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Chronic:** July 01- September 30, 2023; April 01- June 30, 2024; October 01- December 31, 2024; January 01- March 31, 2025; and July 01- September 30, 2025; April 01- June 30, 2026; October 01- December 31, 2026; January 01- March 31, 2027; July 01- September 30, 2027; and April 01- June 30, 2028.

Chronic WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next tests would be required in July 01- September 30, 2028; and January 01- March 31, 2029.

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S.

Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU_a) is greater than 1.0 for either species. The TU_a shall be calculated as follows: $TU_a = 100 \div LC_{50}$. A chronic toxicity test shall be considered positive if the Toxic Unit - Chronic (TU_c) is greater than 11 for either species. The TU_c shall be calculated as follows: $TU_c = 100 \div IC_{25}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90 day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

3.2.1.10 Waste Load Allocated Water Quality Related Effluent Limitations

Each year during the months of May through October inclusive the daily discharge of BOD₅ from Outfall 001 is limited to the more restrictive of 28,247 lbs/day (i.e., the daily maximum technology based effluent limitation) or the following wasteload allocated water quality related effluent limitations.

Definitions:

- Point source allocation values (pounds per day BOD₅) in the following tables represent water quality related effluent limitations. The flow and temperature conditions used to determine a point source allocation value for a given day shall be the representative measurements of the flow averaged over the previous 4 days and temperature of the previous day.
- A representative measurement of flow shall be defined as the daily average flow value derived from continuous river flow monitoring data for the Fox River collected at the USGS 04084445 Fox River at Appleton, WI gaging station.
- A representative measurement of temperature shall be defined as the daily average temperature value derived from continuous river temperature monitoring data for the Fox River collected at the Rapide Croche Dam. Daily average temperature values reported by the Lower Fox River Discharge Association for the Rapide Croche Dam location are acceptable for use with the following tables.

Determination of Effluent Limitations: For purposes of determining compliance with wasteload allocated water quality related effluent limitations, the following conditions shall be met:

- The total daily discharge of BOD₅ for any 7-consecutive-day period may not exceed the sum of the daily point source allocation values from the following tables for the same 7-consecutive-day period. If BOD₅ sampling is not performed at Sampling Point 001 for one or more days during a 7-consecutive-day period, sum the point source allocation values for only those days during which BOD₅ was sampled.
- For any one-day period, the total daily discharge of BOD₅ shall not exceed 134% of the point source allocation value from the following tables for that day.

Monitoring Requirements: The same 24-hour period, plus or minus 8 hours, shall be utilized for the collection of composite and continuous samples for river flow and temperature and all effluent characteristics including effluent flow and BOD₅.

3.2.1.10.1 Point Source Wasteload Allocation Values (pounds per day of BOD₅) for May

River Temperature (previous day average in °F)	Flow at Rapide Croche Dam (previous four-day average in cfs)														
	750 or Less	751 to 1000	1001 to 1250	1251 to 1500	1501 to 1750	1751 to 2000	2001 to 2250	2251 to 2500	2501 to 2750	2751 to 3000	3001 to 3500	3501 to 4000	4001 to 5000	5001 to 8000	8001 or More
86 or More	8979	8979	8979	8979	8979	8979	8979	8979	11929	15653	22423	33612	42756	42756	42756
82 to 85	8979	8979	8979	8979	8979	8979	8979	10189	13187	16780	23266	33925	42756	42756	42756
78 to 81	8979	8979	8979	8979	8979	8979	10007	12461	15445	18952	25179	35249	42756	42756	42756
74 to 77	8979	8979	8979	8979	8979	10235	12439	15106	18235	21814	28020	37820	42756	42756	42756
70 to 73	8979	8979	8979	8979	10466	12709	15354	18397	21828	25643	32069	41916	42756	42756	42756
66 to 69	8979	8979	8979	10289	12866	15781	19029	22605	26500	30708	37592	42756	42756	42756	42756
62 to 65	8979	8979	9295	12498	15977	19727	23735	28003	32521	37281	42756	42756	42756	42756	42756
58 to 61	8979	8979	11197	15533	20074	24814	29745	34867	40165	42756	42756	42756	42756	42756	42756
54 to 57	8979	8979	14039	19664	25427	31320	37333	42756	42756	42756	42756	42756	42756	42756	42756
50 to 53	8979	11089	18093	25167	32311	39511	42756	42756	42756	42756	42756	42756	42756	42756	42756
46 to 49	8979	14944	23627	32313	40994	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756
42 to 45	12991	20393	30918	41373	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756
41 or Less	18870	27713	40237	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756

3.2.1.10.2 Point Source Wasteload Allocation Values (pounds per day of BOD₅) for June

River Temperature (previous day average in °F)	Flow at Rapide Croche Dam (previous four-day average in cfs)														
	750 or Less	751 to 1000	1001 to 1250	1251 to 1500	1501 to 1750	1751 to 2000	2001 to 2250	2251 to 2500	2501 to 2750	2751 to 3000	3001 to 3500	3501 to 4000	4001 to 5000	5001 to 8000	8001 or More
86 or More	16681	15442	14058	13116	12595	12476	12743	13381	14366	15653	22423	33612	42756	42756	42756
82 to 85	15775	14730	13623	12948	12689	12829	13347	14229	15456	16780	23266	33925	42756	42756	42756
78 to 81	14554	13839	13193	12974	13159	13731	14676	15975	17606	18952	25179	35249	42756	42756	42756
74 to 77	13617	13253	13099	13358	14019	15055	16453	18195	20262	21814	28020	37820	42756	42756	42756
70 to 73	12962	12968	13335	14107	15266	16794	18676	20891	23422	25643	32069	41916	42756	42756	42756
66 to 69	8979	8979	8979	10289	12866	15781	19029	22605	26500	30708	37592	42756	42756	42756	42756
62 to 65	8979	8979	9295	12498	15977	19727	23735	28003	32521	37281	42756	42756	42756	42756	42756
58 to 61	8979	8979	11197	15533	20074	24814	29745	34867	40165	42756	42756	42756	42756	42756	42756
54 to 57	8979	8979	14039	19664	25427	31320	37333	42756	42756	42756	42756	42756	42756	42756	42756
50 to 53	8979	11089	18093	25167	32311	39511	42756	42756	42756	42756	42756	42756	42756	42756	42756
46 to 49	8979	14944	23627	32313	40994	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756
42 to 45	12991	20393	30918	41373	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756
41 or Less	18870	27713	40237	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756

3.2.1.10.3 Point Source Wasteload Allocation Values (pounds per day of BOD₅) for July and August

River Temperature (previous day average in °F)	Flow at Rapide Croche Dam (previous four-day average in cfs)														
	750 or Less	751 to 1000	1001 to 1250	1251 to 1500	1501 to 1750	1751 to 2000	2001 to 2250	2251 to 2500	2501 to 2750	2751 to 3000	3001 to 3500	3501 to 4000	4001 to 5000	5001 to 8000	8001 or More
86 or More	16681	15442	14058	13116	12595	12476	12743	13381	14366	15687	18246	22656	31112	42756	42756
82 to 85	15775	14730	13623	12948	12689	12829	13347	14229	15456	17008	19909	24749	33808	42756	42756
78 to 81	14554	13839	13193	12974	13159	13731	14676	15975	17606	19556	23035	28612	38708	42756	42756
74 to 77	13617	13253	13099	13358	14019	15055	16453	18195	20262	22636	26736	33111	42756	42756	42756
70 to 73	12962	12968	13335	14107	15266	16794	18676	20891	23422	26252	31015	38241	42756	42756	42756
66 to 69	12592	12988	13902	15214	16905	18955	21347	24063	27086	30400	35869	42756	42756	42756	42756
62 to 65	12507	13313	14804	16683	18933	21532	24464	27713	31257	35081	41301	42756	42756	42756	42756
61 or Less	12703	13939	16037	18514	21350	24527	28029	31835	35929	40294	42756	42756	42756	42756	42756

3.2.1.10.4 Point Source Wasteload Allocation Values (pounds per day of BOD₅) for September and October

River Temperature (previous day average in °F)	Flow at Rapide Croche Dam (previous four-day average in cfs)														
	750 or Less	751 to 1000	1001 to 1250	1251 to 1500	1501 to 1750	1751 to 2000	2001 to 2250	2251 to 2500	2501 to 2750	2751 to 3000	3001 to 3500	3501 to 4000	4001 to 5000	5001 to 8000	8001 or More
86 of More	8979	8979	8979	8979	10636	13549	16698	20054	23599	27306	33122	41225	42756	42756	42756
82 to 85	8979	8979	8979	9127	11368	13865	16598	19539	22665	25956	31143	38409	42756	42756	42756
78 to 81	8979	8979	8979	10463	12251	14298	16575	19063	21737	24572	29074	35420	42756	42756	42756
74 to 77	8979	9110	10130	11451	13051	14904	16994	19288	21765	24407	28615	34565	42756	42756	42756
70 to 73	9335	9908	10998	12393	14064	15989	18147	20510	23058	25762	30070	36148	42756	42756	42756
66 to 69	9634	10440	11866	13592	15596	17854	20342	23035	25908	28943	33740	40467	42756	42756	42756
62 to 65	9782	11006	13028	15351	17947	20797	23878	27160	30625	34249	39926	42756	42756	42756	42756
58 to 61	10090	11915	14793	17970	21424	25128	29059	33196	37512	41985	42756	42756	42756	42756	42756
54 to 57	10853	13461	17458	21751	26320	31140	36188	41435	42756	42756	42756	42756	42756	42756	42756
50 to 53	12379	15952	21327	27001	32948	39143	42756	42756	42756	42756	42756	42756	42756	42756	42756
46 to 49	14967	19687	26705	34016	41603	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756
42 to 45	18918	24971	33891	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756
41 or Less	24538	32106	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756	42756

3.2.2 Sampling Point (Outfall) 002 - Power Plant NCCW

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
Temperature Maximum		deg F	Daily	Continuous	See section 3.2.2.1.
Copper, Total Recoverable	Daily Max	57 µg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable	Monthly Avg	22.35 µg/L	Monthly	24-Hr Flow Prop Comp	

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Copper, Total Recoverable	Daily Max	15 lbs/day	Monthly	Calculated	
Acute WET		TU _a	See Listed Qtr(s)	24-Hr Flow Prop Comp	See section 3.2.2.2.

3.2.2.1 Effluent Temperature Monitoring

For monitoring temperature continuously, collect measurements in accordance with s. NR 218.04(13). This means that discrete measurements shall be recorded at intervals of not more than 15 minutes during the 24-hour period. Report the maximum temperature measured during the day on the DMR.

3.2.2.2 Whole Effluent Toxicity (WET) Testing

Primary Control Water: Lower Fox River

Instream Waste Concentration (IWC): 17%

Dilution series: At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.

WET Testing Frequency:

Acute tests shall be conducted twice during the permit term in rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Acute:** April 01- June 30, 2024; January 01- March 31, 2027

Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required January 01- March 31, 2029.

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU_a) is greater than 1.0 for either species. The TU_a shall be calculated as follows: $TU_a = 100 \div LC_{50}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90-day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

4 Schedules

4.1 Cooling Water Intake Structure Upgrade

Required Action	Due Date
<p>Candidate Technology Report: The permittee shall submit a report outlining options for upgrading the current fish screen such that the maximum distance in the openings does not exceed 0.56 inches, to comply with definitions in ch. NR 111, Wis. Adm. Code. The report shall also indicate the option selected for implementation at the facility and calculations of the maximum potential velocity at low flow for the selected upgrade option.</p> <p>Any option selected must allow the facility to comply with the impingement mortality BTA standard of 0.5 fps actual intake velocity. If the Department disagrees with conclusions presented in the report, the permit may be opened up for modification and the BTA determination may be reevaluated.</p>	07/01/2024
<p>Complete Impingement Technology Installation: The permittee shall complete intake structure upgrades to meet BTA standards for impingement mortality by this date.</p> <p>The facility shall notify the department when upgrades are complete.</p>	06/30/2025
<p>Upgrade Operation: The facility shall begin utilizing the newly upgraded technologies for impingement no later than this date.</p>	07/01/2025

4.2 Water Intake Requirements

The permittee shall submit annual certification statements as specified by Section 1.3.3.2, Annual Certification Statement and Report, in accordance with the following schedule.

Required Action	Due Date
<p>Annual Certification Statements and Reports: Submit an annual certification statement and report on the water intake structures. The annual certification shall include a summary of maintenance and operation of water intake structure technologies, a summary of visual or remote inspections conducted, and a summary of any substantial modifications to the operation of any units that will impact cooling water withdrawals or operation of the water intake structure.</p> <p>The first annual certification statement and report is to be submitted by the Due Date.</p>	01/31/2024
<p>Annual Certification Statement #2: Submit a second annual certification statement as defined above.</p>	01/31/2025
<p>Annual Certification Statement #3: Submit a third annual certification statement as defined above.</p>	01/31/2026
<p>Annual Certification Statement #4: Submit a fourth annual certification statement as defined above.</p>	01/31/2027
<p>Annual Certification Statement #5: Submit a fifth annual certification statement as defined above.</p>	01/31/2028
<p>Annual Certification Statements After Expiration: In the event that this permit is not reissued on time, the permittee shall continue to submit annual certification statements each year by the date specified in Section 1.3.3.2.</p>	

4.3 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
<p>Annual Mercury Progress Reports: Submit an annual mercury progress report. The annual mercury progress report shall:</p> <p>Indicate which mercury pollutant minimization activities or activities outlined in the approved Pollutant Minimization Program Plan have been implemented;</p> <p>Include an analysis of trends in monthly and annual total effluent mercury concentrations based on mercury sampling; and</p> <p>Include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury such as loads from industries into the collection system.</p> <p>The first annual mercury progress report is to be submitted by the Due Date.</p>	01/31/2024
<p>Annual Mercury Progress Report #2: Submit a mercury progress report as defined above.</p>	01/31/2025
<p>Annual Mercury Progress Report #3: Submit a mercury progress report as defined above.</p>	01/31/2026
<p>Annual Mercury Progress Report #4: Submit a mercury progress report as defined above</p>	01/31/2027
<p>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, pollutant minimization activities from the approved pollutant minimization program plan were not pursued and why. The report shall include an analysis of trends in monthly and annual total effluent mercury concentrations based on mercury sampling during the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury such as loads from industries into the collection system.</p> <p>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.</p>	01/31/2028
<p>Annual Mercury Reports After Permit Expiration: In the event that this permit is not reissued on time, the permittee shall continue to submit annual mercury reports each year covering pollutant minimization activities implemented and mercury concentration trends.</p>	

4.4 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
<p>Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code.</p> <p>This report shall include all PFOS and PFOA data collected including any voluntary influent, intake, in-plant, collection system sampling, and blank sample results.</p>	06/30/2024

<p>Report on Effluent Discharge and Evaluation of Need: Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan.</p> <p>This report shall include all PFOS and PFOA data collected including any voluntary influent, intake, in-plant, collection system sampling, and blank sample results.</p> <p>The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan.</p> <p>If the department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for department approval no later than 90 days after written notification was sent from the department. The department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued.</p> <p>If, however, the department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.</p>	<p>06/30/2025</p>
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4.5 Biocide Use Certification

Required Action	Due Date
<p>Biocide Use Certification: The certification of nonuse of chlorophenolic-containing biocides must be in the form of a notarized affidavit signed by the authorized representative and must state that chlorophenolic-containing biocides are not in use at the facility.</p>	<p>06/30/2027</p>

5 Standard Requirements

NR 205, Wisconsin Administrative Code (Conditions for Industrial Dischargers): The conditions in ss. NR 205.07(1) and NR 205.07(3), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(3).

5.1 Reporting and Monitoring Requirements

5.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

5.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sample collection and analysis shall be performed in accordance with ch. NR 140, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

5.1.3 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;
- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

5.1.4 Reporting of Monitoring Results

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For purposes of calculating NR 101 fees, the 2 mg/l lower reporting limits for BOD5 and Total Suspended Solids shall be considered to be limits of quantitation
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a "0" (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.
- If no discharge occurs through an outfall, flow related parameters (e.g. flow rate, hydraulic application rate, volume, etc.) should be reported as "0" (zero) at the required sample frequency specified for the outfall. For example: if the sample frequency is daily, "0" would be reported for any day during the month that no discharge occurred.

5.1.5 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application, except for sludge management forms and records, which shall be kept for a period of at least 5 years.

5.1.6 Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

5.1.7 Reporting Requirements – Alterations or Additions

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

5.2 System Operating Requirements

5.2.1 Noncompliance Reporting

The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- any noncompliance which may endanger health or the environment;
- any violation of an effluent limitation resulting from a bypass;
- any violation of an effluent limitation resulting from an upset; and
- any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department as directed at the end of this permit within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources **immediately** of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

5.2.2 Bypass

Except for a controlled diversion as provided in the 'Controlled Diversions' section of this permit, any bypass is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the 'Noncompliance Reporting' section of this permit.

5.2.3 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the 'Controlled Diversions' section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for unscheduled bypassing are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant

public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

5.2.4 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation provided the following requirements are met:

- Effluent from the wastewater treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in wastewater treatment facility records and such records shall be available to the department on request.

5.2.5 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

5.2.6 Operator Certification

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

5.2.7 Spill Reporting

The permittee shall notify the Department in accordance with ch. NR 706 (formerly NR 158), Wis. Adm. Code, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations established in this permit, or the spill or accidental release of the material is unregulated in this permit, unless the spill or release of pollutants has been reported to the Department in accordance with s. NR 205.07 (1)(s), Wis. Adm. Code.

5.2.8 Planned Changes

In accordance with ss. 283.31(4)(b) and 283.59, Stats., the permittee shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants. The report shall either be a new permit application, or if the new discharge will not violate the effluent limitations of this permit, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of

this report, the Department may modify this permit to specify and limit any pollutants not previously regulated in the permit.

5.2.9 Duty to Halt or Reduce Activity

Upon failure or impairment of treatment facility operation, the permittee shall, to the extent necessary to maintain compliance with its permit, curtail production or wastewater discharges or both until the treatment facility operations are restored or an alternative method of treatment is provided.

5.3 Surface Water Requirements

5.3.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

5.3.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Weekly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

Monthly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

Six-Month Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

5.3.3 Effluent Temperature Requirements

Weekly Average Temperature – If temperature limits are included in this permit, Weekly Average Temperature shall be calculated as the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock pursuant to Wis. Adm. Code, s. NR 102.28. ‘Cold Shock’ means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state pursuant to Wis. Adm. Code, s. NR 102.29.

5.3.4 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

5.3.5 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

- a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
- b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.
- c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
- d) Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

5.3.6 Total Residual Chlorine Requirements (When De-Chlorinating Effluent)

Test methods for total residual chlorine, approved in ch. NR 219 - Table B, Wis. Adm. Code, normally achieve a limit of detection of about 20 to 50 micrograms per liter and a limit of quantitation of about 100 micrograms per liter. Reporting of test results and compliance with effluent limitations for chlorine residual and total residual halogens shall be as follows:

- Sample results which show no detectable levels are in compliance with the limit. These test results shall be reported on Wastewater Discharge Monitoring Report Forms as "< 100 µg/L". (Note: 0.1 mg/L converts to 100 µg/L)
- Samples showing detectable traces of chlorine are in compliance if measured at less than 100 µg/L, unless there is a consistent pattern of detectable values in this range. These values shall also be reported on Wastewater Discharge Monitoring Report Forms as "<100 µg/L." The facility operating staff shall record actual readings on logs maintained at the plant, shall take action to determine the reliability of detected results (such as re sampling and/or calculating dosages), and shall adjust the chemical feed system if necessary to reduce the chances of detects.
- Samples showing detectable levels greater than 100 µg/L shall be considered as exceedances, and shall be reported as measured.
- To calculate average or mass discharge values, a "0" (zero) may be substituted for any test result less than 100 µg/L. Calculated values shall then be compared directly to the average or mass limitations to determine compliance.

5.3.7 Compliance with Phosphorus Limitation

Compliance with the concentration limitation for phosphorus shall be determined as a rolling twelve-month average and shall be calculated as follows:

First, determine the pounds of phosphorus for an individual month by multiplying the average of all the concentration values for phosphorus (in mg/L) for that month by the total flow for the month in Million Gallons times the conversion factor of 8.34.

Then, the monthly pounds of phosphorus determined in this manner shall be summed for the most recent 12 months and inserted into the numerator of the following equation.

$$\text{Average concentration of P in mg/L} = \frac{\text{Total lbs of P discharged (most recent 12 months)}}{\text{Total flow in MG (most recent 12 months)} \times 8.34}$$

The compliance calculation shall be performed each month with a reported discharge volume after substituting data from the most recent month(s) for the oldest month(s). A calculated value in excess of the concentration limitation will be considered equivalent to a violation of a monthly average.

5.3.8 Additives

In the event that the permittee wishes to commence use of a water treatment additive, or increase the usage of the additives greater than indicated in the permit application, the permittee must get a written approval from the Department prior to initiating such changes. This written approval shall provide authority to utilize the additives at the specific rates until the permit can be either reissued or modified in accordance with s. 283.53, Stats. Restrictions on the use of the additives may be included in the authorization letter.

5.3.9 PFOS and PFOA Requirements

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the aqueous matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution method for the analysis of PFAS in wastewater, the department recommends the use of the EPA method.

The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

5.3.10 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the *"State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition"* (PUB-WT-797, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this permit, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow species. Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

5.3.11 Whole Effluent Toxicity (WET) Identification and Reduction

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;
- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including the following actions:
 - a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)

- b) Identify the compound(s) causing toxicity. Conduct toxicity screening tests on the effluent at a minimum of once per month for six months to determine if toxicity recurs. Screening tests are WET tests using fewer effluent concentrations conducted on the most sensitive species. If any of the screening tests contain toxicity, conduct a toxicity identification evaluation (TIE) to determine the cause. TIE methods are available from USEPA “Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures (EPA/600/6-91/003) and “Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I” (EPA/600/6-91/005F).
 - c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)
 - d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)
- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;
 - If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

5.3.12 Reopener Clause

Pursuant to s. 283.15(11), Wis. Stat. and 40 CFR 131.20, the Department may modify or revoke and reissue this permit if, through the triennial standard review process, the Department determines that the terms and conditions of this permit need to be updated to reflect the highest attainable condition of the receiving water.

6 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Cooling Water Intake Structure Upgrade -Candidate Technology Report	July 1, 2024	14
Cooling Water Intake Structure Upgrade -Complete Impingement Technology Installation	June 30, 2025	14
Cooling Water Intake Structure Upgrade -Upgrade Operation	July 1, 2025	14
Water Intake Requirements -Annual Certification Statements and Reports	January 31, 2024	14
Water Intake Requirements -Annual Certification Statement #2	January 31, 2025	14
Water Intake Requirements -Annual Certification Statement #3	January 31, 2026	14
Water Intake Requirements -Annual Certification Statement #4	January 31, 2027	14
Water Intake Requirements -Annual Certification Statement #5	January 31, 2028	14
Water Intake Requirements -Annual Certification Statements After Expiration	See Permit	14
Mercury Pollutant Minimization Program -Annual Mercury Progress Reports	January 31, 2024	15
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #2	January 31, 2025	15
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #3	January 31, 2026	15
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #4	January 31, 2027	15
Mercury Pollutant Minimization Program -Final Mercury Report	January 31, 2028	15
Mercury Pollutant Minimization Program -Annual Mercury Reports After Permit Expiration	See Permit	15
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge	June 30, 2024	15
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge and Evaluation of Need	June 30, 2025	16
Biocide Use Certification -Biocide Use Certification	June 30, 2027	16
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	17

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non-industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:

Northeast Region - Oshkosh, 625 E. CTY RD Y, Suite 700, Oshkosh, WI 54901