Fact Sheet Permit for Permit Modification

General Information

Permit Number:	WI-0025739-09-2	
Permittee Name:	Wausau Water Works	
Address:	407 Grant St City Hall	
City/State/Zip:	Wausau WI 54403	
Discharge Location:	435 Adrian St., Wausau, WI 54403. NW ¼, NW ¼, Section 1, T28N, R7E, City of Wausau, Marathon County. West bank of the Wisconsin River, ¼ mile downstream of the Thomas St. bridge. Outfall: Lat: 44.94404° N / Lon: 89.62826° W.	
Receiving Water:	The Wisconsin River located in the Lower Eau Claire River Watershed of the Central Wisconsin River Basin in Marathon County	
Stream Flow ($Q_{7,10}$):	850 cfs	
Stream Classification:	Warm Water Sportfish, Non-public Water Supply	
Design Flow	Annual Average	8.2 MGD
Significant Industrial Loading?	Yes. The permit application submitted June 30, 2015 identifies 16 Categorical Industrial Users and 4 Other significant Industrial Users.	
Operator at Proper Grade?	Yes. This is an Advanced facility with required subclasses: A1 – Suspended Growth Processes, B – Solids Separation, C – Biological Solids/Sludges, P – Total Phosphorus, D – Disinfection, L – Laboratory and SS – Sanitary Sewage Collection System. The Operator-in-charge is certified at the advanced level in all subclasses except SS. There is also an operator certified at the basic level in subclass SS – Sanitary Sewage Collection System.	
Approved Pretreatment Program?	Yes – Wausau's local municipal pretreatment program was approved by the department January 1, 1985.	

Facility Description

The Wausau Wastewater Treatments Facility (WWTF) treats wastewater from the City of Wausau, the City of Schofield, and the Town of Stettin, as well as industrial wastewater from approximately 20 industries that are regulated under a local pretreatment program. They also accept and treat digested sludge from the Village of Brokaw, domestic holding tank wastes, septic tank wastes, grease trap-interceptor waste, commercial septage and landfill leachate. The Wausau WWTF accepts for treatment from REI Engineering approximately 10 gallons per day (gpd) of petroleum-contaminated groundwater. They also accept groundwater that was previously contaminated with mineral spirits and pentachlorophenol from Wauleco/Sentry Insurance (65,000 gpd) that is pumped and treated prior to discharge to the municipal collection system. The facility has an annual average design flow of 8.2 million gallons per day (MGD). The actual annual average effluent flow from January 2018 to March 2021 was 5.2 MGD.

Influent from the above-named sources is first treated at the Wausau WWTF via two mechanical bar screens, followed by a PISTA grit removal system. Subsequent wastewater treatment consists of primary clarification, conventional activated sludge, final clarification and sand filtration. Effluent is disinfected seasonally via ultraviolet light prior to discharge to the Wisconsin River. Waste activated sludge is thickened by a gravity belt prior to anaerobic digestion and then dewatered

using two belt filter presses to create Class B cake sludge. Sludge is then recycled via landspreading on Department approved sites.

Wausau is nearing completion of a solids handling facility upgrade to produce a variety of sludge products, including, Class B Liquid and Class A Heat Dried Exceptional Quality Biosolids for distribution to the public, land application or landfilling.

Explanation of Permit Modification

The Wausau Water Works wastewater treatment facility's modified permit issued November 20, 2019 was modified to replace the total phosphorus water quality based effluent limits (WQBELs) calculated pursuant to s. NR 217.13, Wis. Adm. Code, with total phosphorus WQBELs derived consistent with the wasteload allocations in the Wisconsin River Total Maximum Daily Load (TMDL) Site-Specific Criteria for Lakes Petenwell, Castle Rock, and Wisconsin. Additionally, Wausau is nearing completion of a solids handling facility upgrade to produce a variety of sludge (biosolids) products. This permit modification adds biosolids sample points and outfalls, including a Class A Exceptional Quality Biosolids that can be distributed to the public. See sample point/outfall descriptions in the table below for outfalls 010, 003, 002 (revised), 011, 004, 005, and 006, and section 4 of the permit for biosolids monitoring requirements.

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	5.0 MGD (1/1/2019 – 4/30/2021)	Representative composite influent samples shall be taken from the influent pump discharge pipe.
001	5.3 MGD (1/1/2019 – 4/30/2021)	Representative effluent samples, except those for fecal coliform, shall be collected at the disinfection channel prior to disinfection; samples for fecal coliform shall be collected after disinfection.
002	1,262 Dry US Tons (2020) Note: See Sample Point 002 below for new sample point description for this outfall for this permit modification.	Representative sludge samples shall be collected from cake sludge storage quarterly and monitored for Lists 1, 2, 3 and 4.
104	N/A – Field Blank	The field blank shall be collected using standard handling procedures every day that mercury samples are collected at influent and effluent.
601	N/A – River Monitoring	Temperature and flow of the Wisconsin River shall be monitored for determination of Wasteload Allocated (WLA) limits at Outfall 001. See subsections below for specific monitoring information.
010	N/A – New Outfall	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to the dewatering belt filter presses. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1) and vector attraction reduction (List 4) if using volatile solids reduction to show compliance with vector attraction reduction requirements at outfalls 002 and 003. With department approval this sample point may be used to satisfy monitoring

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)**
		requirements for metals (List 1) for outfalls 002, 003, 004, 005 and 006. The permittee shall demonstrate to the satisfaction of the department that the results for this outfall can be correlated with monitoring results for these other sample points and/or outfalls. This is a common sample point for metals (List 1), PPS and PCBs and is not an outfall for distribution.
003	N/A – New Outfall	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to land application. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. The permittee may request that vector attraction reduction (List 4) monitoring performed at outfall 010 be used to meet vector attraction reduction requirements at this outfall if the permittee is using volatile solids reduction to meet List 4 requirements. This outfall is inactive for land application. The permittee shall obtain Departmental approval prior to landspreading liquid sludge and therefore commencing use of Outfall 003.
002	N/A – New Outfall	Class B, Cake, Anaerobically digested dewatered biosolids. Representative composite samples shall be collected from the wet cake loadout valve prior to land application. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. The permittee may request that vector attraction reduction (List 4) monitoring performed at outfall 010 be used to meet vector attraction reduction requirements at this outfall if the permittee is using volatile solids reduction to meet List 4 requirements.
011	N/A – New Outfall	Class A, Cake, Heat dried exceptional quality biosolids. Representative composite samples shall be collected immediately after the sludge dryer for pathogen control treatment process monitoring (List 3). This is a sample point and not an outfall for distribution.
004	N/A – New Outfall	Class A, Cake Biosolids, Heat dried exceptional quality biosolids for distribution to the public, land application or landfilling. Representative samples shall be collected from the truck load-out

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)**
		area and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). Pathogen control (List 3) monitoring is not required if the sludge is not stored at this location. All pathogen control samples shall be discrete samples. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment. With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. This outfall is inactive for distribution. See section 4.2.4.5 for requirements for activating this outfall. Notify the Department 30 days prior to distributing Class A Sludge product.
005	N/A – New Outfall	Class A, Cake Biosolids, Heat dried exceptional quality biosolids from the biosolids storage building for distribution to the public, land application or landfilling. Representative samples shall be collected from the dried biosolids piles in the storage building and monitored quarterly for metals (List 1), nutrients (List 2) and pathogen control (List 3). Monitoring is not required during quarters when there is no public distribution. Retesting for pathogen control (List 3) is required prior to distribution of Class A sludge product to the public. With Department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. This outfall is inactive for distribution. See section 4.2.4.5 for requirements for activating this outfall. Notify the Department 30 days prior to distributing Class A sludge product.
006	N/A – New Outfall	Class A, Heat dried cake sludge, collected as dust prior to distribution or disposal. Representative samples shall be collected at the dust collector and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4). With department approval metals monitoring performed at outfall 010 may be used to satisfy monitoring requirements for metals (List 1) at this outfall provided the results can be correlated with monitoring results for sample point 010. Monitoring at outfall 006 is not required during quarters when there is no public distribution. This outfall is inactive for distribution. See section 4.2.4.5 for requirements for activating this outfall. Permittee shall notify the department 30 days prior to distribution.

1 Influent - Proposed Monitoring

Sample Point Number: 701- INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See sections 1.2.1.1 and 1.2.1.2 of the permit.
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	See section 1.2.1.2 of the permit.
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		ug/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Silver, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	

Changes from Previous Permit

There have been no changes to influent monitoring requirements from the previous permit.

Explanation of Limits and Monitoring Requirements

Section NR 210.04(2), Wis. Adm. Code, requires that influent wastewater strengths and volumes shall be characterized by monitoring for flow, BOD_5 and Total Suspended Solids (TSS). BOD_5 and TSS influent monitoring results are required to demonstrate the 85% removal requirement for BOD_5 and TSS found in ss. NR 210.05(1)(a)3 and (b)3, Wis. Adm. Code.

Pretreatment Program

The Wausau wastewater treatment facility has a design flow of more than 5 million gallon per day (MGD) and thus is required, pursuant to s. NR 211.20, Wis. Adm. Code, to administer an industrial pretreatment program. Monthly influent monitoring is required for cadmium, chromium, copper, cyanide, lead, mercury, nickel, and zinc.

Mercury Monitoring

In addition to the requirements in s, NR 211.20, Wis. Adm. Code, and because the permit also includes an alternative mercury effluent limit, monthly influent monitoring for mercury is required pursuant to NR 106.145(3)(a)1, Wis. Adm. Code, for treatment facilities with an average flow rate greater than or equal to 5 million gallons per day.

2 In-plant - Proposed Monitoring and Limitations

Sample Point Number: 104- Mercury field blank

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Monthly	Blank	See subsection 2.2.1.1 of the permit for mercury monitoring requirements.

Changes from Previous Permit

There have been no changes to in-plant monitoring requirements from the previous permit.

Explanation of Limits and Monitoring Requirements

Collection of a field blank during mercury sampling events is required to satisfy the sampling requirements of ss. NR 106.145(9) and (10), Wis. Adm. Code.

3 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- EFFLUENT TO WISCONSIN RIVER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD_5, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Comp	
BOD_5, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Comp	
WLA BOD_5 Discharged	Daily Max - Variable	lbs/day	5/Week	Calculated	See section 3.2.1.2 of the permit.
WLA Value		lbs/day	5/Week	See Table	Report applicable variable limit on DMR. See section 3.2.1.2 of the permit for variable limits.
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total	Monthly Avg	1.0 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	34 lbs/day	5/Week	Calculated	Final TMDL-based mass limit. Monitoring only upon permit effective date. See section 3.2.1.3 of the permit. Final limit goes into effect pursuant to the phosphorus compliance schedule at section 5.1.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See TMDL section below.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See TMDL section below.
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	Weekly	Grab	Monitoring and limits apply May 1 through September 30 annually.
Fecal Coliform	Geometric Mean - Wkly	656 #/100 ml	Weekly	Grab	Monitoring and limits apply May 1 through September 30 annually.
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring Only - November 1 through April 30 annually.
Nitrogen, Ammonia (NH3-N) Total		mg/L	Quarterly	24-Hr Flow Prop Comp	Monitoring Only - May 1 through October 31 annually.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite +		mg/L	Quarterly	24-Hr Flow	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrate Total				Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	
Hardness, Total as CaCO3		mg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	See section 3.2.1.4 of the permit.
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Silver, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		ug/L	Monthly	24-Hr Flow Prop Comp	
Mercury, Total Recoverable	Daily Max	3.8 ng/L	Monthly	Grab	This is an Alternative Mercury Effluent Limit. See sections 3.2.1.5 of the permit for mercury monitoring requirements and 3.2.1.6 of the permit for mercury variance information.
Pentachloro- phenol		ug/L	Monthly	Grab	
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See section 3.2.1.7 of the permit for Whole Effluent Toxicity (WET) testing dates and WET requirements.
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	

Changes from Previous Permit

Phosphorus WQBELs of 0.1 mg/L and 6.8 lbs/day as six-month averages and 0.3 mg/L as a monthly average were removed from the previous modified permit and replaced with a phosphorus limit of 34 lbs/day as a monthly average derived consistent with the SSC Wasteload Allocation of the Wisconsin River Basin Total Maximum Daily Load. The

phosphorus compliance schedule was shortened to require compliance with the TMDL SSC-derived phosphorus limits as soon as possible but no later than December 31, 2023 (the date to achieve compliance with the original phosphorus WQBELs was December 31, 2025). Permit-required actions that the permittee has already completed were removed from the permit (Whole Effluent Toxicity tests scheduled for 2019, 2020 and 2021, and Mercury Progress Reports #2 and #3). The standard requirements section of the permit was updated. The permit expiration date remains December 31, 2023.

Explanation of Limits and Monitoring Requirements

Categorical Limits

BOD_5 and TSS – Categorical effluent limitations for BOD_5 and TSS are established in s. NR 210.05(1)(a) and (b), Wis. Adm. Code, where the receiving water is classified as fish and aquatic life in s. NR 102.04 (3), Wis. Adm. Code. These limits apply year-round. See BOD_5 Wasteload Allocated Limits below.

pH – Chapter NR 210, Wis. Adm. Code (Sewage Treatment Works), requires that effluent pH shall be within the range of 6.0 s.u. (standard pH units) and 9.0 s.u.

Water Quality Based Limits and WET Requirements and Disinfection

Refer to the WQBEL memos for the detailed calculations, prepared by the Water Quality Bureau dated March 29, 2016 and March 23, 2017 used for the original permit reissued December 12, 2018 and May 19, 2021 used for this (the second) permit modification.

Disinfection/Fecal Coliform – Wausau's discharge is to a fish and aquatic life receiving water (warm water sport fish) and disinfection is required from May 1 to September 30 to protect recreational uses of the Wisconsin River. Effluent is disinfected seasonally via ultraviolet light. Fecal Coliform monitoring is required during periods of disinfection.

BOD_5 Wasteload Allocated Limits – For the months of May through October wasteload allocated BOD_5 limits in pounds per day apply and are based on the flow and temperature of the Wisconsin River. River flow and river temperature monitoring and reporting as defined in section 3.2.1.2 of the permit are used to determine the daily point source allocation for Wausau ("WLA Value"). This value is compared to the actual daily discharge value of BOD_5 in pounds of BOD_5 per day ("WLA BOD_5 Discharged") to determine compliance. The tables of Wasteload Allocated Limits in lbs/day are found in section 3.2.1.2 of the permit. In no case shall the WLA water quality related mass effluent limitations be less stringent than the applicable categorical concentration effluent limitations contained in the effluent limits and monitoring table above.

Phosphorus – Phosphorus requirements are based on the Phosphorus Rules that became effective December 1, 2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. The code categorically limits municipal dischargers of more than 150 pounds of phosphorus per month to 1.0 mg/L, unless an alternative limit is approved. NR 217 also specifies WQBELs (water quality based effluent limits) for discharges of phosphorus to surface waters of the state from publicly and privately owned wastewater facilities. Wausau discharges greater than 150 pounds of phosphorus per month and is subject to the categorical phosphorus limit of 1.0 mg/L.

Wausau's permit, originally issued December 12, 2018, contained phosphorus WQBELs of 0.1 mg/L and 6.8 lbs/day as six-month averages and 0.3 mg/L as a monthly average calculated pursuant to s. NR 217.13, Wis Adm. Code. Since that reissuance the Wisconsin River Total Maximum Daily Load (TMDL) and Site-Specific Criteria (SSC) for Lakes Petenwell, Castle Rock and Wisconsin were approved. The TMDL SSC-derived phosphorus limit is 34 lbs/day as a monthly average that goes into effect pursuant to the phosphorus compliance schedule at section 5.1.

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

permittee's approved SSC-based limits are consistent with the assumptions and requirements of the EPA-approved TMDL, which is 9,145 lbs/yr for the permitted facility.

The approved TMDL expresses WLAs as lbs/year and lbs/day (maximum annual load divided by 365 days). As recommended in Section 4.6 of the department's *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* (May 2020), mass limits must be given in the permit that are consistent with the TMDL WLA and the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at https://prodoasint.dnr.wi.gov/swims/downloadDocument.do?id=167886175). Continuously discharging facilities covered by the WRB TMDL are given monthly average mass limits. If the equivalent effluent concentration is less than or equal to 0.3 mg/L, six-month average mass limits (averaging period of May through October and November through April) are also included. An equivalent effluent concentration of 0.37 mg/L was calculated for this facility, thus, TMDL based mass limits are expressed as a monthly average. The TMDL-derived mass limit for Wausau is 34 lbs/day as a monthly average.

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

Ammonia – Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia. The need for ammonia effluent limits was evaluated in the March 29, 2016 WQBEL memo. No limits are recommended; however, monthly monitoring from November through April and quarterly monitoring from May through October is required to provide sufficient data to evaluate the need for ammonia limits at the next permit reissuance.

Chloride – Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. Chloride monitoring data from the current permit term show that there is no reasonable potential for Wausau's discharge to exceed the calculated chloride limits.

Total Nitrogen Monitoring (NO2+NO3, TKN and Total N) – Based on the "Guidance for Total Nitrogen Monitoring in WPDES Permits" dated October 2012, and under the authority of s. 283.55(1)(e), Wis. Stats., that requires permittees to provide such other information as the department finds is necessary to identify the type and quantity of any pollutants discharged from the point source, quarterly effluent monitoring for Total Nitrogen is required for municipal major dischargers such as Wausau.

Hardness, Total as $CaCO_3$ – Hardness as calcium carbonate ($CaCO_3$) monitoring is being required due to the relationship between hardness and the toxicity of metals.

Pretreatment Parameters – Wausau has a design flow of more than 5 million gallons per day (MGD) of treated effluent and is required, pursuant to s. NR 211.20, Wis. Adm. Code, to administer a pretreatment program. Monthly effluent monitoring is required for cadmium, chromium, copper, cyanide, lead, mercury, nickel, and zinc.

The need for effluent limitations for the pretreatment parameters listed above was evaluated in the March 29, 2016 WQBEL memo. Effluent concentrations were well below the calculated acute and chronic limitations and no limits for these parameters are recommended.

Mercury – Requirements for mercury are included in s. NR 106.145, Wis. Adm. Code. The need for mercury effluent limits was evaluated in the March 23, 2017 WQBEL memo. Wausau collected 72 valid test results for mercury from February 2011 through January 2017. The upper 99th percentile of 30-day average discharge concentrations, as determined by the procedure specified in NR 106.05(5)(a), Wis. Adm. Code, is 1.9 ng/l, which exceeds a potential limit of 1.3 ng/l based on wildlife criterion (the most stringent limit for this substance). Therefore, a limit for mercury is recommended.

However, ch. NR 106.145(4), Wis. Adm. Code, allows for eligibility for an alternative mercury effluent limitation if the permittee submits an application for an alternative mercury limit, which includes the submittal of a pollutant minimization

plan. Chapter NR 106.145(5), Wis. Adm. Code, specifies that an alternative limitation shall equal the 1-day Upper 99th Percentile of the effluent data and shall be expressed as a daily maximum concentration. Using this approach, the calculated alternative mercury limitation is 3.8 ng/L.

Wausau submitted an application for a variance from the mercury water quality standard of 1.3 ng/L based wildlife criterion on June 30, 2015 that included the "Mercury Pollutant Minimization Program, Wausau Water Works, June 2018 Revision" that outlines the mercury pollutant minimization measures that will be implemented during the current permit term. The U.S. Environmental Protection Agency approved Wausau's mercury variance application on October 25, 2018. Wausau has complied with the terms and conditions of the mercury variance including submittal of Annual Mercury Progress Reports for 2019, 2020 and 2021. This is Wausau's second permit term with a mercury variance. The alternative mercury effluent limit (variance limit) in the current permit of 3.8 ng/L as a daily maximum is a reduction from the limit of 32 ng/L in the previous permit.

Pentachlorophenol – Pentachlorophenol monitoring was included in the current permit due to discharges of this pollutant from a remediation site. There appears to be a declining trend in pentachlorophenol discharges, however spikes near the calculated daily maximum limit still occur occasionally. Since the remediation site that is the source of the pentachlorophenol is still active, monitoring is required in the reissued permit.

Thermal – Requirements for Temperature are included in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature. The calculated limitation is 120° F as a daily maximum. There is no reasonable potential for the calculated limitation to be exceeded at this facility. Neither a limit nor routine monitoring is included in the reissued permit.

Whole Effluent Toxicity – Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09, Wis. Adm. Code, as revised August 2016. (See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at http://dnr.wi.gov/topic/wastewater/wet.html).

The need for Whole Effluent Toxicity (WET) testing and limits was evaluated in the March 29, 2016 WQBEL memo. Annual acute and chronic whole effluent toxicity (WET) testing is recommended, primarily due to Wausau's designation as a major municipal discharger. See section 3.2.1.7 of the permit for the acute and chronic WET testing schedules.

Sample Point Number: 601- WISCONSIN RIVER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WLA Previous Day River Flow		cfs	5/Week	Measure	Monitoring required May through October when Waste Load Allocated BOD_5 limits apply. See subsection 3.2.1.2 of the permit.
WLA Previous Day River Temp		deg F	5/Week	Measure	

Changes from Previous Permit

There have been no changes to river monitoring requirements from the previous permit.

Explanation of Limits and Monitoring Requirements

The discharge of BOD_5 to the Wisconsin River for river miles 265.0 to 260.0 is wasteload allocated between multiple dischargers to this reach of the river. Monitoring of river flow and river temperature is used to determine the variable "Wasteload Allocated Limits in lbs/day for BOD_5" from the tables at section 3.2.1.2 of the permit and that are reported in

the monitoring table at section 3.2.1 of the permit for "WLA Value". Section 3.2.2.1 of the permit includes definitions related to river monitoring at sample point 601.

4 Land Application - Proposed 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)**
010	B	Liquid	N/A	Volatile Solids Reduction	Sample point only	N/A Not an outfall for distribution
003	B	Liquid	Anaerobic Digestion Fecal Coliform	Volatile Solids Reduction	Land Application	New Outfall
002	B	Cake	Anaerobic Digestion Fecal Coliform	Volatile Solids Reduction	Land Application or Landfilling	1,262 Dry US Tons (2020)
011	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	N/A	Sample point only	N/A Not an outfall for distribution
004	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	New Outfall
005	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	New Outfall
006	A (Exceptional Quality)	Cake (Collected as Dust)	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	New Outfall

***** The permittee primarily uses Volatile Solids Reduction to satisfy Vector Attraction Reduction requirements (List 4), however, based on operational needs may also satisfy List 4 requirements through Drying with Primary Solids, Injection (liquid sludge) or Incorporation.

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)**
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No. 180 days of sludge storage provided on-site.**						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **No** If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? **No.** Wausau conducted a priority pollutant scan (PPS) during the last permit term. Therefore, the PPS is not required during this permit term as specified in ch. NR 215, Wis. Adm. Code, and under the authority of s. NR 204.06(2)(b)6, Wis. Adm. Code. Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD.						

Changes from Previous Permit:

Wausau will complete construction of an upgrade to its biosolids (sludge) treatment processes during this permit term to produce Class A Exceptional Quality (EQ) biosolids. Exceptional quality biosolids may be sold or given away in a bag or other container by the permittee to either commercial or domestic users to be applied to lawns and home gardens as well as other sites allowed under ch. NR 204, Wis. Adm. Code. Exceptional quality biosolids are considered not to pose any reasonably anticipated threat to public health or the environment and are exempt from some requirements of ch. NR 204, Wis. Adm. Code (see NR 204.04(3), Exemptions.).

To provide Wausau with operational flexibility for the beneficial reuse of biosolids sample points/outfalls 010, 003, 011, 004, 005 and 006 have been added to the permit. Existing outfall 002 for landspreading Class B cake biosolids is retained with updated monitoring requirements.,

Wausau's solids treatment train will include anaerobic digestion and thickening of raw sludge from wastewater treatment processes into Class B liquid biosolids (common sample point 010 and outfall 003), dewatering of the thickened Class B liquid biosolids with belt filter presses into Class B cake biosolids (existing outfall 002), heat drying of the Class B cake biosolids to produce a Class A heat dried exceptional quality cake biosolids (sample point 011, and outfalls 004, 005 and 006). See the "Sample Point Designation" table on pages 2 through 3 above for detailed descriptions of the biosolids sampling points/outfalls in this permit and related monitoring requirements. The permit requires Wausau to submit a Sludge Management Plan

Sampling Point (Outfall) 010 - CLASS B LIQUID SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
PCB Total Dry Wt	Ceiling		Once	Composite	Monitor as part of the Priority Pollutant Scan.[1]
PCB Total Dry Wt	High Quality		Once	Composite	
Municipal Sludge Priority Pollutant Scan			Once	Composite	As specified in ch. NR 215.03 (1-4), Wis. Adm. Code.[2]

Changes from Previous Permit – Sample Point 010

Sample point 010 was added to the permit to serve as a common sample point for metals (List 1), Priority Pollutant Scans and PCBs and is not an outfall for distribution. Under conditions specified in the description of each biosolids sample point/outfall in this permit monitoring results from sample point 010 may be used to satisfy biosolids monitoring requirements metals (List 1) and vector attraction reduction (List 3) for other biosolids outfalls in this permit.

Notes:

[1] PCB monitoring is required once each permit term. Wausau monitored for PCB during the current permit term in 2019 so the next PCB sampling event will be during the next permit reissuance.

[2] Priority Pollutant Scans (PPS) are required once every 10 years for treatment facilities with design flows between 5 MGD and 40 MGD (Wausau has an annual average design flow of 8.2 MGD.). Wausau monitored its sludge for priority pollutants in 2011 so the next sampling event will be required during the next permit reissuance.

Sampling Point (Outfall) 003 - CLASS B LIQUID SLUDGE; 002 - CLASS B CAKE SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	
Nitrogen, Ammonium (NH_4-N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	

Changes from Previous Permit – Outfalls 003 and 002

Outfall 003 was added to the permit to allow Wausau to landspread Class B liquid biosolids to provide operational flexibility if treatment processes subsequent to anaerobic digestion were to be offline. Outfall 002 is an existing outfall for

landspreading Class B cake biosolids. Certain biosolids monitoring requirements at both outfalls may be satisfied by monitoring at sample point 010 (see sample point/outfall descriptions). Outfall 003 is inactive for land application and the permittee needs Department approval prior to landspreading Class B liquid biosolids from this outfall.

Sampling Point (Outfall) 011 - CLASS A EQ SLUDGE

This is a sample point to monitor for pathogen control treatment processing immediately after the Class A treatment process (heat drying). This is not an outfall for distribution.

Changes from Previous Permit – Outfall 011

This sample point was added to monitor for pathogen control treatment processing immediately after the class A heat drying process. If the pathogen or indicator organism densities of the biosolids meet class A requirements immediately after the class A treatment process and the material is not stored, retesting for pathogen control is not required at outfall 004 prior to distribution to the public, land application or landfilling.

Sampling Point (Outfall) 004 - CLASS A EQ SLUDGE DISTRIBUTION; 005 - CLASS A EQ SLUDGE STORAGE; 006 - CLASS A EQ DUST

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

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	
Nitrogen, Ammonium (NH_4-N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	

Changes from Previous Permit – Outfalls 004, 005 and 006

Outfalls 004, 005 and 006 have been added to the permit to regulate the beneficial reuse of class A exceptional quality (EQ) biosolids from the heat dryer. Dried biosolids from each of these outfalls will be monitored for metals (List 1), nutrients (List 2) pathogen control (List 3) and vector attraction reduction (List 4). Metals (List 1) monitoring performed at common sample point 010 may be used to satisfy monitoring for metals (List 1) at these outfalls with Department approval and under conditions specified in the permit in the sample point description for each outfall.

These outfalls are inactive for distribution and may be activated under the conditions of section 4.2.4.5 of the permit, including, among others, that the state-wide biosolids coordinator inspect the treatment equipment and review process related data.

Outfall 004 is located at the truck load-out area. Class A EQ biosolids are conveyed from the heat dryer to the load-out area and may be loaded into trucks or roll-off containers for hauling off-site or may land on the floor and be moved around with a front-end loader in the cake storage building. If the class A EQ material is not stored at the truck load-out area (i.e., is promptly hauled off-site) the biosolids do not have to be retested for pathogen control (List 3) prior to distribution to the public, land application of landfilling.

Outfall 005 is located at the cake storage building where the dried class A EQ biosolids are stored prior to distribution to the public, land application or landfilling. Biosolids monitoring would not be required during calendar quarters when there is no public distribution.

Outfall 006 was added to allow Wausau flexibility in managing class A heat dried biosolids dust generated by the dried biosolids crusher from the dust collector baghouse and the biosolids loadout spouts. This material would normally be sent to the landfill, however, the permit provides the flexibility to distribute this material. Additional options include, adding the material back to the solids handling processes, land application and blending the material with the dried biosolids. If the EQ biosolids dust were to be blended with other dried EQ biosolids the mix would need to be tested.

Sludge Management Plan

This permit requires Wausau to submit a sludge management plan (SMP) for Department approval that specifies operational procedures for the management and beneficial reuse of biosolids (sludge) generated at the facility as specified in section 5.3. The requirement to submit an SMP is appropriate due to the new biosolids treatment processes to produce Class A sludge for land application and Class A Exceptional Quality sludge for distribution to the public and is authorized pursuant to s. NR 204.11, Wis. Adm. Code. The SMP provides Wausau significant flexibility while utilizing permitted outfalls and sample points to calibrate their sludge management operations. The SMP provides a tool for communication between Wausau and the department and provides continuity while operators and/or department staff may change.

The SMP is a standard operating procedure that outlines and details sludge management practices that include but are not limited to, monitoring, sampling and reporting procedures, record keeping, tracking the distribution of biosolids (land application, distribution to the public or landfilling), contingency plans for biosolids that do not meet sludge quality standards and processes in NR 204.07(4), Wis. Adm. Code. See the Sludge Management Plan schedule in section 5.3 below for additional details.

Explanation of Limits and Monitoring Requirements

Requirements for 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).

Water Extractable Phosphorus – Water extractable phosphorus (WEP) is the coefficient for determining plant available phosphorus from measured total phosphorus. In Wisconsin, the Penn State Method is utilized and is expressed in percent. While a total P may be significant, the WEP may show that only a small percentage of the P is available to plants because of factors such as treatment processes and chemical addition that "tie-up" phosphorus limiting the amount of phosphorus that is plant available. As part of the Wisconsin's nutrient management plan (NMP) requirements, the accounting of all fertilizers must be included over the NMP cycle. The fertilizer value of the waste needs to be communicated to the farmer and accounted for in the NMP.

5 Compliance Schedules

5.1 Wisconsin River Basin TMDL SSC-derived Limits for Total Phosphorus

The permittee shall comply with the Wisconsin River Basin Total Maximum Daily Load (TMDL) SSC-derived limits for total 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
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	06/30/2023
Achieve Compliance: The permittee shall achieve compliance with final TMDL SSC-derived total phosphorus limits as soon as possible but not later than the specified date.	12/31/2023

Explanation of Wisconsin River Basin TMDL SSC-derived Limits for Total Phosphorus Compliance Schedule

Wausau was granted a 7-year compliance schedule in the permit issued on December 12, 2018 (Reissuance-09-0) that required Wausau to comply with stringent total phosphorus WQBELs of 0.1 mg/L and 6.8 lbs/day as six-month averages and 0.3 mg/L as a monthly average calculated pursuant to s. NR 217.13, Wis. Adm. Code, by September 30, 2025. Since that permit was issued the Site-Specific Criteria in the Wisconsin River Basin Total Maximum Daily Load (TMDL) were approved. Wausau submitted all of the reports and plans required by the original phosphorus compliance schedule ahead of the required due dates and has initiated construction of a treatment plant upgrade to meet phosphorus limits. This schedule requires Wausau to take all actions needed to achieve compliance with TMDL SSC-derived limit for total phosphorus as soon as possible but no later than December 31, 2023.

The Department believes the compliance schedule requires Wausau to comply with the TMDL SSC-derived limits as soon as possible because the facility improvements project being undertaken to meet phosphorus limits is a major facility-wide upgrade. The upgrade includes new equipment and processes for chemical phosphorus removal, selector zones (anoxic zones) for biological phosphorus removal within a new aeration basin configuration and a disk filtration tertiary phosphorus treatment process. Wausau will need time to optimize the operation of the new equipment and treatment processes and ancillary equipment, including phosphorus removal chemical usage and selection, air flows within the

aeration basins and filtration equipment. Treatment plant staff will need time to become familiar with the operation of new equipment and treatment processes. Unknown and unanticipated delays related to construction, equipment procurement and potential equipment malfunctions could add significant time to the construction schedule.

5.2 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. The annual mercury progress report shall: Indicate which mercury pollutant minimization activities or activities outlined in the approved Pollutant Minimization Plan, "Mercury Pollutant Minimization Program, Wausau Water Works, June 2018 Revision", have been implemented; Include an analysis of trends in monthly and annual 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 such as loads from industries into the collection system.	
Annual Mercury Progress Report #4: Submit a mercury progress report as defined above.	01/31/2022
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 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. 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 plan outlining the pollutant minimization activities proposed for the upcoming permit term shall be submitted along with the final report.	01/30/2023
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.	

Explanation of Mercury Pollutant Minimization Program Compliance Schedule

Wausau Water Works was granted a variance from the mercury water quality criterion of 1.3 ng/L for the protection of wildlife for the current permit term. One condition of the variance is to submit annual progress reports on implementation of its mercury pollutant minimization program (PMP) and a final mercury progress report documenting the success of mercury pollutant minimization activities implemented throughout the permit term in reducing mercury discharges. Wausau has submitted the required annual mercury progress reports for 2019, 2020 and 2021.

5.3 Sludge Management Plan

A sludge management plan is required.

Required Action	Due Date
Sludge Management Plan Submittal: Submit a sludge management plan to the department for approval by October 1, 2022. The sludge management plan (SMP) shall optimize the land application system performance and demonstrate compliance with s. NR 204, Wis. Adm. Code. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes.	10/01/2022

Explanation of Sludge Management Plan Submittal Compliance Schedule

A sludge management plan (SMP) as outlined above is to be submitted to the Department for review and approval pursuant to s. NR 204.11, Wis. Adm. Code. The changes to the sewage sludge characteristics and sewage sludge outfalls warrant development of a sludge management plan. The upgrades to Wausau's biosolids treatment processes will require treatment plant staff to optimize the operation of new belt filter presses and the new sludge drier. The facility will need to develop plans and procedures for sampling, monitoring, and biosolids handling, storage and distribution for several new outfalls for Class A sludge for land application and landfilling and Class A Exceptional Quality biosolids for distribution to the public, landfilling or land application. The SMP will also facilitate continuity of operations for several new wastewater treatment plant operators and new staff.

Special Reporting Requirements

The compliance schedules above require Wausau to prepare and submit a report on the progress of constructing a treatment plant upgrade to meet phosphorus limits, annual mercury progress reports and a sludge management plan.

Other Comments:

None.

Attachments

Water Quality Based Effluent Limits Memos Dated:

- March 29, 2016 and March 23, 2017 used for the original permit reissued December 12, 2018.
- May 19, 2021 used for this (the second) permit modification to include Wisconsin River TMDL SSC-derived phosphorus WQBELs.

Public Notice

Permit Expiration Date

December 31, 2023

Proposed Permit Modification Effective Date

July 1, 2022

Justification of Any Waivers from Permit Application Requirements

No waivers from permit application requirements were granted.

Prepared By:

Phillip Spranger, Wastewater Permits Specialist

Date: February 18, 2022

cc: Nicolas Lindstrom – WCR/Wausau
Katherine Hanson – Bureau of Legal Services