Modified Permit Fact Sheet

General Information

Permit Number	WI-0020354-11-1
Permittee Name and Address	City of Cumberland 1165 St. Anthony Street, Cumberland, Wisconsin
Permitted Facility Name and Address	City of Cumberland 1165 St. Anthony Street, Cumberland, Wisconsin
Permit Term	November 01, 2025 to June 30, 2030
Discharge Location	NW ¼ - NE ¼ of Section 18; T35N-R13W (Inside the SE corner of the WWTF fenced area. Approximately 0.24 miles from the Hwy P and St Anthony Street intersection)
Receiving Water	Hay River in the Hay River Watershed within the Lower Chippewa River Basin, Barron County
Stream Flow ($Q_{7,10}$)	Zero
Stream Classification	Limited Forage Fish community at point of discharge, approximately 1 mile downstream the Hay River becomes a warm water sport fish community and non-public water supply. Approximately 0.5 mile further downstream the classification is a cold-water class II trout community.
Wild Rice Impacts *(no specific wild rice standards exist at this time)*	No impacts identified. No wild rice waters inventoried on the surface water. (Evaluation completed March 2017)
Discharge Type	Existing continuous discharger
Annual Average Design Flow (MGD)	0.4 MGD
Industrial or Commercial Contributors	There are three industries in town; Seneca (seasonal bean cannery), 3-M (abrasives), and DCA (electronics).
Plant Classification	A1 - Suspended Growth Processes; B - Solids Separation; C - Biological Solids/Sludges; P - Total Phosphorus; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The City of Cumberland owns and operates a wastewater treatment system that treats wastes generated from homes and businesses in the community. The facility consists of headworks followed by a Membrane Biological Reactor (MBR). A MBR is a combination of activated sludge treatment together with separation of the sludge by filtration to produce particle-free effluent. Effluent is discharged to the Hay River. Sludge that can't pass through the membrane is either returned to the aeration zone to re-seed the new wastewater entering the system while the rest of the sludge will be treated in an aerobic digester. Treated sludge is land applied as a soil conditioner on land approved by the Department.

Reason for Modification

Corrections were made to the effluent daily maximum and the variable weekly average chloride mass limitations.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	**INFLUENT** – Flow is not a required parameter	Representative influent samples shall be collected at the aerated grit chamber.
001	**EFFLUENT** – An average of 0.238 MGD (2020-2024 data)	Representative samples shall be collected at the permeate pump discharge lines. Flow will be measured using the combined permeate pumps flows. The permittee is authorized to discharge to the Hay River (Hay River Watershed within the Lower Chippewa River Basin) in Barron County.
002	**SLUDGE** – An annual average of 66 dry US tons (Information provided in the application)	Multiple representative samples shall be collected and composited from the sludge storage prior to land application.

Permit Requirements

1 Influent – Monitoring Requirements

Sample Point Number: 701- INFLUENT

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

Changes from Previous Permit:

There are no influent limitations and monitoring requirement changes in the modified permit.

Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit.

2 Surface Water - Monitoring and Limitations

Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Monthly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Weekly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	20 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
pH Field	Daily Max	9.0 su	3/Week	Grab	
pH Field	Daily Min	6.0 su	3/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	6.5 mg/L	Weekly	24-Hr Flow Prop Comp	Limit applies May through October.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	10 mg/L	Weekly	24-Hr Flow Prop Comp	Limit applies November through April.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.6 mg/L	Weekly	24-Hr Flow Prop Comp	Limit applies May through October.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.1 mg/L	Weekly	24-Hr Flow Prop Comp	Limit applies November through April.
Dissolved Oxygen	Daily Min	4.0 mg/L	3/Week	Grab	
Temperature Maximum		deg F	3/Week	Multiple Grab	See the Effluent Temperature Monitoring and Limitations sections below and the Temperature Limits schedule for more information.
E. coli		#/100 ml	Weekly	Grab	Monitoring and limit effective May through September annually per the Effluent Limitations for E. coli Schedule.
E. coli		Percent	Monthly	Calculated	Monitoring and limit effective May through September annually per the Effluent Limitations for E.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					coli Schedule. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Phosphorus, Total	6-Month Avg	0.075 mg/L	Weekly	24-Hr Flow Prop Comp	Compliance is measured each April and October.
Phosphorus, Total	Monthly Avg	0.225 mg/L	Weekly	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.25 lbs/day	Weekly	Calculated	Compliance is measured each April and October.
Phosphorus, Total	Monthly Avg	6.3 lbs/day	Weekly	Calculated	See the Total Maximum Daily Load (TMDL) Limitations 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 the Total Maximum Daily Load (TMDL) Limitations section below.
Chloride	Daily Max	757 mg/L	4/Month	24-Hr Flow Prop Comp	
Chloride	Weekly Avg	395 mg/L	4/Month	24-Hr Flow Prop Comp	
Chloride	Monthly Avg	395 mg/L	4/Month	24-Hr Flow Prop Comp	
Chloride	Daily Max	~~3.7~~ 3,662 lbs/day	4/Month	Calculated	
Chloride	Weekly Avg - Variable	lbs/day	4/Month	Calculated	See the "Alternative Wet Weather Chloride Mass Limitation" section for more information.
Chloride, Variable Limit		lbs/day	Monthly	Calculated	Refer to the table found in the "Alternative Wet Weather Chloride Mass Limitation" section for appropriate limit.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PFOS		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
PFOA		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Nitrogen Series Monitoring section for testing schedule.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Nitrogen Series Monitoring section for testing schedule.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Total Nitrogen = Total Nitrogen Kjeldahl (mg/L) + Nitrite + Nitrate Nitrogen (mg/L). See the Nitrogen Series Monitoring section for testing schedule.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	Two tests are required during the permit term. See the Whole Effluent Toxicity (WET) testing section for monitoring schedule.
Chronic WET	Monthly Avg	1.0 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	Three tests are required during the permit term. See the Whole Effluent Toxicity (WET) testing section for monitoring schedule.

Changes from Previous Permit

There were effluent limitations changes in the modified permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

- The daily maximum and variable weekly average mass chloride limits were updated in the table above and in the permit variable chloride mass limitation table shown below. Changes are noted above and below with strike though and highlight.

Parameter	Weekly Average Wet Weather	Weekly Average Dry Weather
Chloride	~~1.7 lbs/day~~ 1,746 lbs/day	~~1.3 lbs/day~~ 1,318 lbs/day

Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the water quality-based effluent limits (WQBEL) memo dated January 23, 2025.

Chloride – The permittee noted that the chloride mass limits were abnormally low. The department reviewed the water quality-based effluent limits (WQBEL) memo dated January 23, 2025 and a mistake in the calculations was found. The limits were recalculated, the adjusted mass limits are:

- Acute Mass Limit: 3,662 lbs/day
- Chronic Mass Limit: 1,318 lbs/day
- Wet Weather Mass Limit: 1,746 lbs/day

3 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
002	B	Liquid	Aerobic digestion	Incorporation	Land spreading	Approximately 66 dry US tons (Information provided in the application)
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No, during the most recent round of sampling (2020), results were below the level of detection.						
Is a priority pollutant scan required? No						

Sample Point Number: 002- SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See the Sludge Analysis for PCBs section.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See the Sludge Analysis for PCBs section.
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Changes from Previous Permit:

There are no land application limitations and monitoring requirement changes in the modified permit.

Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code.

4 Schedules

There are no schedule changes in the modified permit.

4.1 Land Application Management Plan

Required Action	Due Date
Land Application Management Plan Submittal: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. 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.	09/30/2025

Explanation of Schedule

Land Application Management Plan - An up-to-date Land Application Management Plan is required that documents how the permittee will manage the land application of biosolids consistent with ch. NR 204, Wis. Adm. Code.

4.2 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	06/30/2026
Report on Effluent Discharge and Evaluation of Need: Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results. The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan. If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department	06/30/2027

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. 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.	

Explanation of Schedule

PFOS/PFOA Minimization Plan Determination of Need - As stated above, NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. S. NR 106.98, Wis. Adm. Code, specifies steps to generate data in order to determine the need for reducing PFOS and PFOA in the discharge. Data generated per the effluent monitoring requirements will be used to determine the need for developing a PFOS/PFOA minimization plan. As part of the schedule, the permittee is required to submit two annual Reports on Effluent Discharge.

If the department determines that a minimization plan is needed, the permit will be modified or revoked and reissued to include additional requirements.

4.3 Effluent Limitations for E. coli

Required Action	Due Date
Status Update: The permittee shall submit a progress report on development and submittal of a facility plan for upgrades to meet disinfection requirements and E. coli limits.	03/31/2026
Submit Facility Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code for meeting disinfection requirements and complying with E. coli surface water limitations. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.	01/31/2027
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to meet disinfection requirements per s. NR 210.06(1), Wis. Adm Code, achieve compliance with final E. coli limitations, and a schedule for completing construction of the upgrades by the complete construction date specified below.	01/31/2028
Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	07/31/2028
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	07/31/2029
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	01/31/2030
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2030

Explanation of Schedule

E. coli- A compliance schedule is included in the permit to provide time for the permittee to investigate options for meeting new effluent E. coli water quality-based effluent limits while coming into compliance with the limits as soon as reasonably possible.

4.4 Temperature Limits and Dissipative Cooling Evaluation

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent temperature with conclusions regarding compliance. Informational Note: Refer to the Surface Water subsections regarding 'Determination of Need for Effluent Limits' and 'Dissipative Cooling Demonstration - Weekly Average Limits' concerning requests for a Department determination on the need for limits and follow-up procedures for demonstration of dissipative cooling per NR 106.59, as well as re-evaluation of the limits pursuant to NR 106 Subchapters V & VI or NR 102.26, Wis. Adm. Code.	06/30/2026
Action Plan: Submit an action plan for complying with all effluent temperature limits that remain following the Department's review for necessity.	06/30/2027
Construction Plans: Submit construction plans (if construction is required for complying with effluent temperature limits) and include plans and specifications with the submittal.	06/30/2028
Initiate Actions: Initiate actions identified in the plan.	06/30/2029
Complete Actions: Complete actions necessary to achieve compliance with effluent temperature limits.	06/30/2030

Explanation of Schedule

Temperature Limits and Dissipative Cooling Evaluation - A compliance schedule is included in the permit to provide time for the permittee to investigate options for meeting new effluent thermal limits.

Prepared By: Sheri A. Snowbank Wastewater Specialist **Date:** August 19, 2025