

Permit Fact Sheet

General Information

Permit Number:	WI-0031615-10-0	
Permittee Name:	DRUMMOND SANITARY DISTRICT 1	
Address:	52555 Front Avenue Box 43	
City/State/Zip:	Drummond WI 54832	
Discharge Location:	52755 Eastern Ave, Drummond WI (SE ¼, SW ¼ of Section 28; T45N-R7W)	
Receiving Water:	An unnamed wetland bog draining into an intermittent tributary to Weso Lake within the White River watershed in the Lake Superior drainage basin in Bayfield County	
StreamFlow (Q _{7,10}):	0 cfs	
Stream Classification:	The wetland and intermittent tributary are considered limited aquatic life (LAL) waters. Weso Lake is a Warm Water Sport Fish (WWSF) community. All are non-public water supply and within the ceded territory.	
Wild Rice Impacts: <i>(no specific wild rice standards exist at this time)</i>	No impacts identified. The conclusion of no impact is based on the lack of wild rice waters inventoried on the surface water. (Evaluation completed March 2017)	
Discharge Type:	Existing seasonal discharger (April – November)	
Design Flow(s)	Annual Average	0.04 MGD
Significant Industrial Loading?	No	
Operator at Proper Grade?	Yes	
Approved Pretreatment Program?	N/A	

Facility Description

Drummond Sanitary District #1 owns and operates a domestic wastewater treatment system. The plant designed to treat 40,000 gallons per day and handles an average of 10,000 gallons per day (2019-2023 data). The treatment system consists of three stabilization ponds operated one after another (in series). Within these ponds naturally occurring bacteria and organisms already present in the wastewater metabolize organic matter. Once the wastewater can meet discharge standards it is authorized to be discharged seasonally (April 1 through November 30) via an effluent distribution pipe which evenly spreads the discharge out into the unnamed wetland bog receiving water. Beyond Weso Lake the discharge does not appear to connect with other surface water in the Long Lake Branch portion of the White River watershed.

Substantial Compliance Determination

Enforcement During Last Permit: There have been several minor violations of effluent limits, and a few missed samples/underreporting issues. However, the facility is taking the necessary steps to address issues of noncompliance including optimizing lagoon operations (fill-and-draw fall only discharge) and evaluating potential high strength sources and nothing further is required at this time.

After a desk top review of all discharge monitoring reports, CMARs, and follow-up actions from previous (2018) inspection, a virtual discussion on 6/20/2023 of the inspection checklist and CMOM checklist, and a site visit on 6/22/2023, the Drummond Sanitary District has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
702	INFLUENT An average of 0.010 MGD. (2019-2023 data)	Representative samples shall be collected from Lift Station No. 2 located on Front Street.
001	EFFLUENT An average of 0.014 MGD during periods of discharge. There was an average of 70 days of discharge each year. (2019-2023 data)	Representative samples shall be collected at the effluent weir at the outfall from the third pond prior to discharge to the bog. Discharges are authorized from April through November, annually. The effluent is discharged to the unnamed bog draining into an intermittent tributary to Weso Lake within the White River Watershed in the Lake Superior Drainage Basin in Bayfield County.
003	SLUDGE Sludge has not been removed.	Representative samples shall be collected from the accumulated sludge in the primary pond at various locations and depths that are composited for analysis.

1 Influent – Monitoring Requirements

Sample Point Number: 702- INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	2/Month	Grab	
Suspended Solids, Total		mg/L	2/Month	Grab	

Changes from Previous Permit:

Influent limitations and monitoring requirements were re-evaluated for the proposed permit term and no changes were required in this permit. Sampling requirements and frequencies are the same as the previous permit.

Explanation of Limits and Monitoring Requirements

The parameters are standard for minor municipalities, as are monitoring and frequency requirements for municipal wastewater treatment plant. Tracking of BOD₅ and Suspended Solids are required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code.

2 Surface Water - Monitoring and Limitations

Sample Point Number: 001- STABILIZATION POND EFFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total	Monthly Avg	20 mg/L	2/Month	Grab	
BOD5, Total	Weekly Avg	30 mg/L	2/Month	Grab	
Suspended Solids, Total	Monthly Avg	20 mg/L	2/Month	Grab	
Suspended Solids, Total	Weekly Avg	30 mg/L	2/Month	Grab	
pH Field	Daily Max	9.0 su	2/Month	Grab	
pH Field	Daily Min	6.0 su	2/Month	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	Quarterly	Grab	
Phosphorus, Total		mg/L	Quarterly	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	2/Month	Grab	Enter the daily ammonia result on the eDMR and compare to the Nitrogen, Ammonia Variable Limit column to determine compliance.
Nitrogen, Ammonia Variable Limit		mg/L	2/Month	See Table	Using the daily pH result look up the applicable ammonia limit in the "Ammonia Limitation" section in the permit and report the variable limit on the eDMR.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s) Annual	Grab	See the "Nitrogen Series Monitoring" subsection in the permit for testing schedule more information.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s) Annual	Grab	See the "Nitrogen Series Monitoring" subsection in the permit for testing schedule more information.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total		mg/L	See Listed Qtr(s) Annual	Calculated	Total Nitrogen = Total Nitrogen Kjeldahl (mg/L) + Nitrite +Nitrate Nitrogen (mg/L). See the "Nitrogen Series Monitoring" subsection in the permit for testing schedule more information.

Changes from Previous Permit

Effluent limitations and monitoring requirements were re-evaluated for the proposed permit term and the following changes were made from the previous permit. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

- The **flow limit** has been removed this permit term.
- An **ammonia nitrogen** variable daily maximum limit has been added.
- Annual monitoring for the **Nitrogen Series** (nitrate +nitrite, total Kjeldahl nitrogen and total nitrogen) has been added to the permit.

Changes during factcheck review

- The Sanitary District is scheduled to only discharge during the fall. The schedule for the **Nitrogen Series** has been changed to annual monitoring during periods of discharge with a preference to capture multiple discharge seasons if possible. More data will be captured with this change.

Explanation of Limits and Monitoring Requirements

More information on categorical and water quality-based limits (WQBEL) is found in the “Water Quality-Based Effluent Limitations for Drummond Sanitary District 1 (WI-0031615)” memo dated February 14, 2024.

Discharge season - The facility has been authorized to discharge seasonally from April through November. All samples shall be taken during normal operating conditions; therefore, monitoring is required only during periods of discharge.

Note: the facility will be implementing fall-only discharges this permit term to try to improve effluent quality but retains the option to discharge during the authorized months.

Flow – In previous permit issuances the facility had a flow limit as a condition of receiving a variance per s. NR 104.02(4)(c), Wis. Adm. Code. This code allows variance limits for BOD5, Total Suspended Solids and Dissolved Oxygen instead of the limits identified in s. NR 104.02(3) table 2 for Limited Aquatic Life (LAL) waters. Re-evaluation has determined that the permittee doesn’t need the variance flow limit because Limited Aquatic Life limits are already in effect. The flow limit has been removed.

BOD and Total Suspended Solids - The receiving water is listed in s NR 104.04 Wis. Adm. Code as a variance water. Categorical limits are shown in NR 104.02(3)(b)3 Wis. Adm. Code

pH - Categorical limits for pH are required per ch. NR 210 (Subchapter II).

Dissolved Oxygen (DO) - Categorical limits for Dissolved Oxygen in a Limited Aquatic Life (marginal surface waters) are found in NR 104.02(3)(b) and 210.05(3) Wis. Adm. Code.

Phosphorus – Phosphorus requirements are based on the Phosphorus Rules as detailed in NR 102 (water quality standards) and NR 217, Wis. Adm. Code (effluent standards and limitations for phosphorus). Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. Currently in NR 217 Wis. Adm. Code there are three types of limit calculations used to determine if a phosphorus limit is needed: a technology based effluent limit (TBEL), a water quality-based effluent limit (WQBEL) determined by stream criteria and a WQBEL based on a Total Daily Maximum Daily Load (TMDL) allocation.

In the case of Drummond Sanitary District 1:

- A TBEL of 1.0 mg/L is needed if a facility discharges more than the threshold of 150 pounds per month (s. NR 217.04(1)(a)1 Wis. Adm. Code). The limit memo determined that the facility discharges less than the threshold (currently they discharge approximately 5.8 lbs/month); therefore, a TBEL is not applicable this permit term.
- The unnamed bog wetland is considered a Limit Aquatic Life (LAL) water. Currently NR 217 Wis. Adm. Code doesn't include criteria for LAL waters. Ss. NR 217.12 and 217.13 Wis. Adm. Code require WQBELS be protective of downstream waters. Weso Lake is classified as a Warm Water Sport Fish community, but the lake is less than 5 acres in surface area. Lakes and reservoirs less than 5 acres in size are excluded from phosphorus water quality standards per s. NR 102.06(6)(b), Wis. Adm. Code. Therefore, an effluent phosphorus WQBEL is not included this permit term.
- The facility does not lie within the boundaries of any approved TMDL area, thus a phosphorus WQBEL based on a TMDL allocation is likewise not required during this permit term.

Ammonia (Daily limits) - Using current acute and chronic ammonia toxicity criteria found in Tables 2C and 4B of NR 105 Wis. Adm. Code and limit calculating procedures (Subchapter IV of 106, Wis. Adm. Code ammonia limitations were calculated for the facility (see the 'Variable Ammonia Limits' table below). Based on a reasonable potential analysis it was found ammonia limits are needed to ensure toxic conditions in the receiving water do not occur. Daily maximum limits expressed as a single limit or as a variable limit based on effluent pH were calculated. Expression as a variable limit was chosen.

Sample results for pH shall be used to calculate the daily variable limit. Total ammonia (NH₃-N) sampling shall occur on the same day pH levels are monitored. The applicable variable limit shall be recorded on the Electronic Discharge Monitoring Report (eDMR) in the Ammonia Variable Limit column. Report the effluent ammonia sample result in the 'Nitrogen, Ammonia (NH₃-N) Total' column. Compare the variable daily maximum ammonia limit to the reported ammonia result, record the number of exceedances in the box to the right of the 'Limit in Effect' 'Daily Max' row in the 'Summary' tables at the end of the eDMR.

Variable Ammonia Limits

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	83	7.0 < pH ≤ 7.1	51	8.0 < pH ≤ 8.1	11
6.1 < pH ≤ 6.2	82	7.1 < pH ≤ 7.2	46	8.1 < pH ≤ 8.2	8.8
6.2 < pH ≤ 6.3	80	7.2 < pH ≤ 7.3	40	8.2 < pH ≤ 8.3	7.3
6.3 < pH ≤ 6.4	78	7.3 < pH ≤ 7.4	35	8.3 < pH ≤ 8.4	6.0
6.4 < pH ≤ 6.5	75	7.4 < pH ≤ 7.5	31	8.4 < pH ≤ 8.5	5.0
6.5 < pH ≤ 6.6	72	7.5 < pH ≤ 7.6	26	8.5 < pH ≤ 8.6	4.1
6.6 < pH ≤ 6.7	69	7.6 < pH ≤ 7.7	22	8.6 < pH ≤ 8.7	3.4
6.7 < pH ≤ 6.8	65	7.7 < pH ≤ 7.8	19	8.7 < pH ≤ 8.8	2.8
6.8 < pH ≤ 6.9	60	7.8 < pH ≤ 7.9	16	8.8 < pH ≤ 8.9	2.4
6.9 < pH ≤ 7.0	56	7.9 < pH ≤ 8.0	13	8.9 < pH ≤ 9.0	2.0

Ammonia (Weekly and Monthly Limits) - The calculated Weekly Average and Monthly Average limits were also considered. Based on a comparison between effluent data and the calculated limits, there is no reasonable potential for the

discharge to exceed any of the calculated ammonia nitrogen limits. Weekly and monthly average ammonia nitrogen limits are not required this permit term.

Nitrogen Series - (nitrate +nitrite, total Kjeldahl nitrogen and total nitrogen) – In 2011, the Upper Mississippi River Basin Association (UMRBA) completed the report “Upper Mississippi River Nutrient Monitoring, Occurrence, and Local Impacts: A Clean Water Act Perspective”. Among the many recommendations of this report was that the states should expand their NPDES discharge monitoring requirements to include both phosphorus and nitrogen as they have important impacts on the mainstem upper Mississippi River as well as in the Gulf of Mexico. Consequently, the department developed the “Guidance for Total Nitrogen Monitoring in WPDES Permits” document dated October 2019, where annual effluent monitoring for total nitrogen (total nitrogen = total Kjeldahl + (nitrite+nitrate)) is required for municipal and industrial facilities discharging to surface waters. Section 283.55(1)(e) Wis. Stats. allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and s. NR 200.065 (1)(h) Wis. Adm. Code allows for this monitoring to be collected during the permit term. Annual tests are required during periods preferably during different seasons.

Nitrogen Series monitoring shall continue after the permit expiration date (until the permit is reissued) in accordance with the monitoring requirements specified in the last full calendar year of this permit. For example, the next test would be required 2030.

PFOS and PFOA –NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA as part of this permit reissuance. The department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

Sampling Frequencies - The “[Monitoring Frequencies for Individual Wastewater Permits](#)” guidance document (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

Previously permitted monitoring frequencies for BOD5, Total Suspended Solids, pH, Dissolved Oxygen and Ammonia fall below the standard monitoring frequency outlined in guidance. Since data submitted during the previous permit term shows consistent compliance with permit limitations, and the set monitoring frequency is consistent with requirements of state code, the reduced monitoring frequency is continued in the proposed permit. If performance levels begin to vary during the permitted term, the department may re-evaluate current sampling frequencies and implement more frequent monitoring via permit modification or at permit reissuance.

3 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
003	B	Liquid	Sludge has not been removed and removal is not anticipated this permit term. If removal is needed see the land application and schedule sections of the permit for more information.			
Does sludge management demonstrate compliance? Yes						

Municipal Sludge Description

Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No, the most recent sample (August 2020) was 0.408 pCi/liter. If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in land applying sludge from this facility						
Is a priority pollutant scan required? No Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

Sample Point Number: 003- LAGOON SLUDGE

Monitoring Requirements and Limitations

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

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Total Kjeldahl		Percent	Per Application	Composite	
Nitrogen, Ammonia (NH3-N) Total		Percent	Per Application	Composite	
Phosphorus, Total		Percent	Per Application	Composite	
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	
Potassium, Total Recoverable		Percent	Per Application	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Monitoring is required in the 2026 calendar year.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	
PFOA + PFOS		ug/kg	Once	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Changes from Previous Permit:

Effluent limitations and monitoring requirements were re-evaluated for the proposed permit term and the following changes were made from the previous permit. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

- List 1 (Metals), PCB and PFOA+PFOS monitoring is required during the second full year of the permit term (2026).
- It is recommended that List 2 (Nutrients) monitoring occur with the List 1 monitoring.
- Due to changes within the land application forms, the 3400-049 (“Characteristics Report”), 3400-052 (“Other Methods of Disposal”) and 3400-055 (Annual Land Application”) will need to be submitted each year.

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) Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07(7) Wis. Adm. Code for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k) Wis. Adm. Code.

List 2 Nutrient monitoring – Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in year 2 of the permit (2026). Results will assist in the determination of the acres needed for land

application of sludge should it be necessary. The number of acres needed is also required for the Sludge Management Schedule (see schedules for more information).

PFAS- The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA is currently developing a risk assessment to determine future land application rates and expects to release this risk assessment by the end of 2024. In the interim, the department has developed the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS”.

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department’s implementation of EPA’s recommendations. To quantitate this risk, PFAS sampling has been included in the proposed WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

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.

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

Sludge analysis during the second year of the permit term has been included. There are check boxes available on the electronic forms to identify if desludging didn’t occur.

- Sludge characteristics report (3400-049) – at the top of the form check “yes” or “no” in the box identifying if any land application occurred that year. Complete the form if required or identify the year samples will be or have been taken in the comments section.
- 3400-052 (“Other Methods of Disposal”) and 3400-055 (“Annual Land Application”) - The reports are technically 2 separate forms that are now combined in one location but separated onto two different tabs. If you answer “No” to both listed questions the forms are complete. If you need to answer “Yes” to either question the corresponding form tabs will go from gray to blue indicating information can be entered on the report.

4 Schedules

4.1 Sludge Management Plan

Required Action	Due Date
<p>Submit a Sludge Management Plan: The permittee shall submit a management plan for approval if removal of sludge will occur during this permit term. The plan shall demonstrate compliance with ch. NR 204 Wis. Adm. Code and at minimum address 1) How and where is sludge sampled; 2) Available sludge storage details and location(s); 3)How will the sludge be removed with details on volume, characterization and how will the treatment plant continue to function during the drawdown; 4) Describe the type of transportation and spreading vehicles and loading and unloading practices; 5)</p>	

<p>Identify approved land application sites, apply for needed sites, site limitations, total acres needed and vegetative cover management; 6) Specify record keeping procedures including site loading; 7) Address contingency plans for adverse weather and odor/nuisance abatement; and 8) Include any other pertinent information such as other disposal options that may be used or specifications of any pretreatment processes</p> <p>Once approved, all sludge management activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes. No desludging may occur unless approval from the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed.</p> <p>The plan is due at least 60 days prior to desludging .</p>	
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Explanation of Schedules

Sludge Management Plan - If the lagoons are to be de-sludged during this permit term a management plan is needed to show compliance with ch NR 204, Wis. Adm. Code. There are outlines available to assist in plan development.

Attachments:

- Water Flow Schematic created May 2013
- “Water Quality-Based Effluent Limitations for Drummond Sanitary District 1 (WI-0031615)” memo dated February 14, 2024

Expiration Date:

June 30, 2029

Justification Of Any Waivers From Permit Application Requirements

- A decision has been made not to require effluent monitoring for metals in the application because:
1. The low design flow (0.04 MGD) and low actual flows (an average of 0.01 MGD) from this facility.
 2. The wastewater is all domestic with no industrial contributors to the collection system.
 3. The metals in the sludge are well below high quality sludge limits which correlates to low metal concentrations in the effluent.
 4. Based on the total points accumulated on the WET checklist and Chapter 1.3 of the WET Guidance Document there is little likelihood the effluent is toxic.

Prepared By: Sheri A. Snowbank **Wastewater Specialist**

Date: March 14, 2024

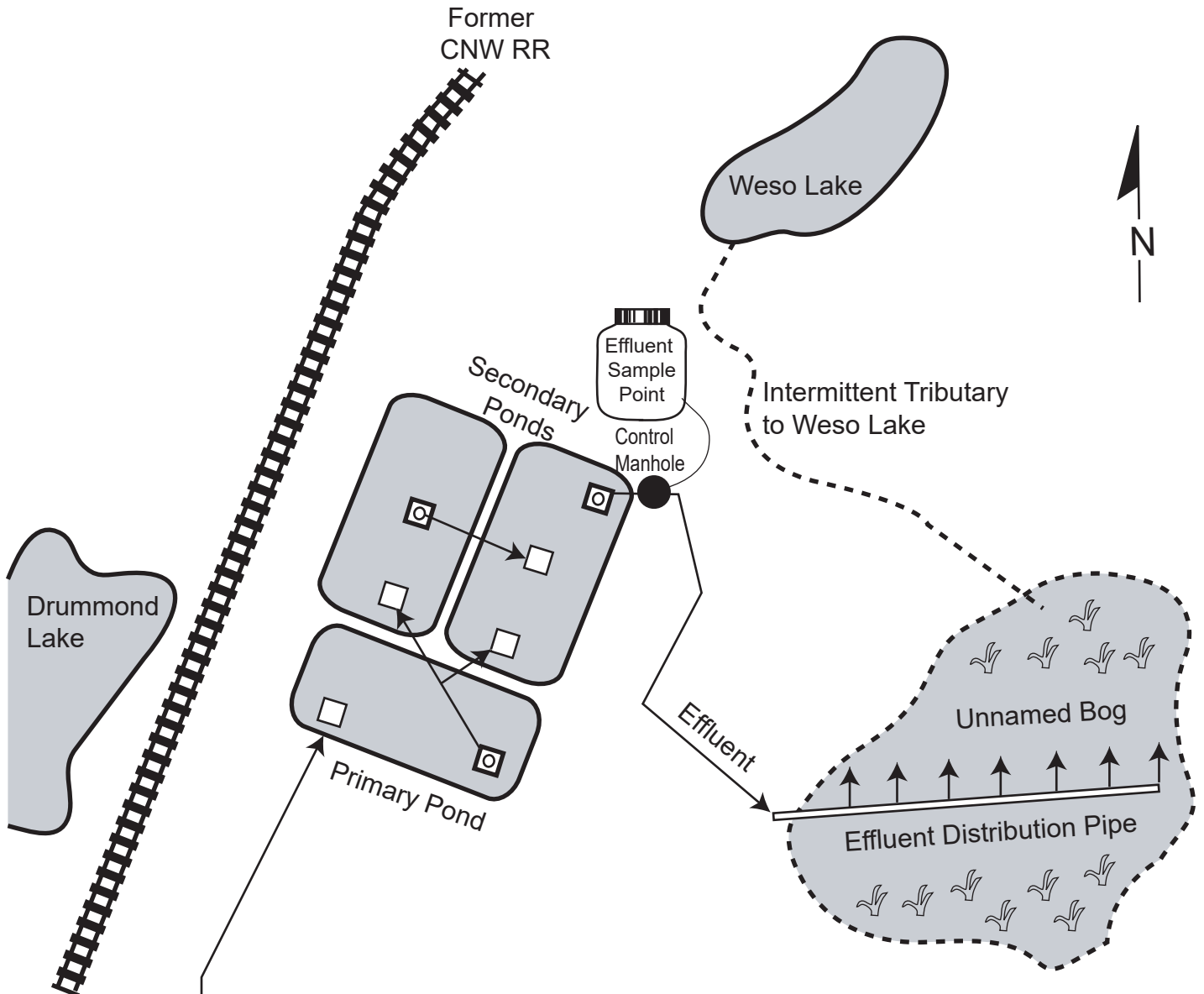
Date updated based on Factcheck comments: April 15, 2024 (Nitrogen series monitoring frequency has changed to annual instead of specific quarters)

Date updated based on public notice comments:

Notice of reissuance was published in the Ashland Daily Press, PO Box 313, Ashland WI, 54806-1661.

DRUMMOND SANITARY DISTRICT Wastewater Treatment Facility

The Drummond wastewater treatment facility is a 3-cell stabilization pond. Treated effluent is discharged to an unnamed bog. The facility is designed to treated 40,000 gallons per day. The diagram below shows the treatment units and sampling locations.



Design Flow: 0.040 MGD	
BOD: 68 lbs/day	
Construction Year: 1978	
Primary Pond	Secondary Ponds
Berm: 92 ft	Berm: 92 ft
WL: 89 ft	WL: 89 ft
Bottom: 84 ft	Bottom: 84 ft
Base: 600 ft x 248 ft	Base: 515 ft x 270 ft
Slope: 3:1	Slope: 3:1

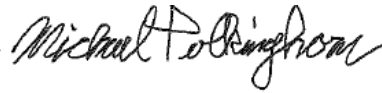
NOT TO SCALE

CORRESPONDENCE/MEMORANDUM

DATE: February 14, 2024

TO: Sheri Snowbank – NOR/Spooner Service Center

FROM: Michael Polkinghorn – NOR/Rhineland Service Center



SUBJECT: Water Quality-Based Effluent Limitations for Drummond Sanitary District 1
WPDES Permit No. WI-0031615-10-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable), for the discharge from the Drummond Sanitary District 1 in Bayfield County. This municipal wastewater treatment facility (WWTF) discharges to a wetland system to Weso Lake, located in the White River Watershed in the Lake Superior Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1
BOD ₅			30 mg/L	20 mg/L	2, 3
TSS			30 mg/L	20 mg/L	2, 3
pH	9.0 s.u.	6.0 s.u.			2, 3
Dissolved Oxygen		4.0 mg/L			2, 3
Ammonia Nitrogen	3.5 mg/L or Variable				4
Phosphorus					2
TKN, Nitrate+Nitrite, and Total Nitrogen					5

Footnotes:

1. Monitor whenever the discharge occurs.
2. No changes from the current permit.
3. These limits are based on the LAL community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code.
4. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit of 3.5 mg/L. These limits apply year-round.

Daily Maximum Ammonia Nitrogen Limits

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	83	7.0 < pH ≤ 7.1	51	8.0 < pH ≤ 8.1	11
6.1 < pH ≤ 6.2	82	7.1 < pH ≤ 7.2	46	8.1 < pH ≤ 8.2	8.8
6.2 < pH ≤ 6.3	80	7.2 < pH ≤ 7.3	40	8.2 < pH ≤ 8.3	7.3
6.3 < pH ≤ 6.4	78	7.3 < pH ≤ 7.4	35	8.3 < pH ≤ 8.4	6.0

6.4 < pH ≤ 6.5	75	7.4 < pH ≤ 7.5	31	8.4 < pH ≤ 8.5	5.0
6.5 < pH ≤ 6.6	72	7.5 < pH ≤ 7.6	26	8.5 < pH ≤ 8.6	4.1
6.6 < pH ≤ 6.7	69	7.6 < pH ≤ 7.7	22	8.6 < pH ≤ 8.7	3.4
6.7 < pH ≤ 6.8	65	7.7 < pH ≤ 7.8	19	8.7 < pH ≤ 8.8	2.8
6.8 < pH ≤ 6.9	60	7.8 < pH ≤ 7.9	16	8.8 < pH ≤ 8.9	2.4
6.9 < pH ≤ 7.0	56	7.9 < pH ≤ 8.0	13	8.9 < pH ≤ 9.0	2.0

5. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Total nitrogen is the sum of nitrate (NO₃), nitrite (NO₂), and total Kjeldahl nitrogen (TKN) (all expressed as N).

No WET testing is required because information related to the discharge indicates low to no risk for toxicity. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are not required due to the non-continuous nature of the discharge.

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

Attachments (3) – Narrative, discharge area map, & weekly/monthly average ammonia nitrogen limits.

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**Water Quality-Based Effluent Limitations for
Drummond Sanitary District 1**

WPDES Permit No. WI-0031615-10-0

Prepared by: Michael A. Polkinghorn

PART 1 – BACKGROUND INFORMATION

Facility Description

The Drummond Sanitary District (SD) 1 owns and operates a domestic wastewater treatment system. The treatment system consists of 3 stabilization ponds operated in series. Effluent is discharged on a noncontinuous basis (April – November) via Outfall 001 by an effluent distribution pipe which evenly spreads the discharge out into a wetland system to Weso Lake, approx. 0.25 mi east of the stabilization ponds.

Attachment #2 is a discharge area map of Outfall 001.

Existing Permit Limitations

The current permit, expired on 09/30/2023, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate	0.24 MGD				1
BOD ₅			30 mg/L	20 mg/L	2
TSS			30 mg/L	20 mg/L	2
pH	9.0 s.u.	6.0 s.u.			2
Dissolved Oxygen		4.0 mg/L			2
Ammonia Nitrogen					3
Phosphorus					3

Footnotes:

1. These are variance limits as described in s. NR 104.02(4)(c), Wis. Adm. Code, applicable to fill and draw or domestic waste stabilization pond facilities discharging to a Limited Aquatic Life (LAL) or Limited Forage Fish (LFF) community receiving water. In absence of this variance, limits based on the LAL or LFF community of the receiving water as described in s. NR 104.02(3)(a) or (b), Wis. Adm. Code, shall apply. Because the prior stated limits are effective in the permit and the flow rate limit is not related to any effective limits in the permit, **the flow rate limit of 0.24 MGD is recommended to be removed during the reissued permit term.**
2. These limits are based on the LAL community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code.
3. Monitoring only.

Receiving Water Information

- Name: Wetland system to Weso Lake
- Waterbody Identification Code (WBIC)
 - o Wetland system surface waterbodies: NA
 - o Weso Lake: 2798600
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code:

- o Wetland system (bog – segment 1): LAL community via wetland as described in s. NR 104.02(3)(b)1, Wis. Adm. Code, from Outfall 001 to outlet weir.
- o Wetland system (wetland/ephemeral overland flow – segment 2): LAL community via wetland as described in s. NR 104.02(3)(b)1, Wis. Adm. Code, from outlet weir to Weso Lake.
- o Weso Lake (segment 3): Warm Water Sport Fish (WWSF) community. This is approx. 0.5 mi downstream of Outfall 001 and is approx. 4.1 acres in surface area.
- o All surface waterbodies are considered non-public water supplies. Limits based on the protection of downstream surface waterbodies’ water quality will be considered when appropriate.
- o Information about the site visit(s) for determining the biological potential of the prior stated surface waterbodies is discussed in greater detail in the Receiving Water Classification Memorandum (July 2022) and is available in the permit file for Drummond SD 1.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: Low flows for the bog section of the wetland system are zero. A ten-to-one dilution ratio will be used for calculating effluent limitations based on chronic or long-term impacts for Weso Lake, in accordance with s. NR 106.06(4)(b)2, Wis. Adm. Code.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: Not applicable where the receiving water low flows are zero.
- Multiple dischargers: None.
- Impaired water status: There are no known impairments to the wetland system or Weso Lake.

Effluent Information

- Flow rate(s):
 - Flow rate limit = 0.24 million gallons per day (MGD)
 - Annual average design = 0.04 MGD
 - o The flow rate limit of 0.04 MGD is used in place of the annual average design flow to account for the seasonal nature of the discharge. For reference, the actual average flow from July 2018 – October 2023 was 0.08 MGD excluding days discharge did not occur. This flow becomes 0.008 MGD including days discharge did not occur.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water source: Domestic wastewater with no industrial contributors. Water supply from the municipality waterworks.
- Additives: None.
- Effluent characterization: This facility is categorized as a minor municipality and received instructions in the application notification letter that exempt it from standard monitoring requirements. The current permit required monitoring for ammonia nitrogen and phosphorus.

The following table presents the average concentrations and loadings at Outfall 001 from October 2018 – December 2023 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameter	Average Measurement*
Flow Rate	0.08 MGD
BOD ₅	8.6 mg/L
TSS	14 mg/L

pH field	7.3 s.u.
Dissolved Oxygen	6.2 mg/L

*Any results below the level of detection (LOD) were included as zeroes in calculation of average.

PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN

Mercury – The permit application did not require monitoring for mercury because Drummond SD 1 is categorized as a minor facility as defined in s. NR 200.02(8), Wis. Adm. Code. In accordance with s. NR 106.145(3)(a)3., Wis. Adm. Code, a minor municipal discharger shall monitor, and report results of influent and effluent mercury monitoring once every three months if, “there are two or more exceedances in the last five years of the high-quality sludge mercury concentration of 17 mg/kg specified in s. NR 204.07(5).” Drummond SD 1 was not required to sample sludge data during the current permit term. It is not expected that there are exceedances of the high-quality mercury concentration based on similar municipal treatment plants and the lack of industries. **Therefore, mercury monitoring is not recommended during the reissued permit term.**

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based on the type of discharge, the effluent flow rate, the lack of indirect dischargers contributing to the collection system and known nondetectable levels of PFOS/PFOA in the source water, **PFOS and PFOA monitoring is not recommended during the reissued permit term.** The Department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge at levels of concern.

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. Given the fact that the Drummond SD 1 does not currently have ammonia nitrogen limits, the need for limits is evaluated at this time.

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

Daily maximum limitations are based on acute toxicity criteria (ATC) in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The ATC for ammonia is calculated using the following equation:

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

Where:

A = 0.633 and B = 90.0 for a LAL community, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 21 sample results were reported from June 2019 – August 2022. The maximum reported value was 8.50 s.u. (Standard pH Units). The 1-day P₉₉, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 8.68 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 8.59 s.u. Therefore, a value of 8.68 s.u. is believed to represent the

maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 8.68 s.u. into the equation above yields an ATC = 3.51 mg/L.

Acute Limits based on 1-Q₁₀

Daily maximum effluent limitations for toxic substances are based on the ATC, listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q₁₀ receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(\text{WQC}) (Q_s + (1-f) Q_e) - (Q_s - f Q_e) (C_s)}{Q_e}$$

Where:

WQC = ATC or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Q_s = average minimum 1-day flow which occurs once in 10 years (1-day Q₁₀)

if the 1-day Q₁₀ flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q₁₀).

Q_e = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

C_s = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q₁₀ method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is the case for the Drummond SD 1 and the limits are set based on the 1-Q₁₀ method.

Presented below is a table of daily maximum limitations corresponding to various effluent pH values. Use of this table is not necessarily recommended in the permit, but it is presented herein for informational purposes.

Daily Maximum Ammonia Nitrogen Limits – LAL Community

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	83	7.0 < pH ≤ 7.1	51	8.0 < pH ≤ 8.1	11
6.1 < pH ≤ 6.2	82	7.1 < pH ≤ 7.2	46	8.1 < pH ≤ 8.2	8.8
6.2 < pH ≤ 6.3	80	7.2 < pH ≤ 7.3	40	8.2 < pH ≤ 8.3	7.3
6.3 < pH ≤ 6.4	78	7.3 < pH ≤ 7.4	35	8.3 < pH ≤ 8.4	6.0
6.4 < pH ≤ 6.5	75	7.4 < pH ≤ 7.5	31	8.4 < pH ≤ 8.5	5.0
6.5 < pH ≤ 6.6	72	7.5 < pH ≤ 7.6	26	8.5 < pH ≤ 8.6	4.1
6.6 < pH ≤ 6.7	69	7.6 < pH ≤ 7.7	22	8.6 < pH ≤ 8.7	3.4
6.7 < pH ≤ 6.8	65	7.7 < pH ≤ 7.8	19	8.7 < pH ≤ 8.8	2.8
6.8 < pH ≤ 6.9	60	7.8 < pH ≤ 7.9	16	8.8 < pH ≤ 8.9	2.4
6.9 < pH ≤ 7.0	56	7.9 < pH ≤ 8.0	13	8.9 < pH ≤ 9.0	2.0

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)

The weekly and monthly average ammonia nitrogen limits calculation from the previous limit evaluation (January 2013) do not change because there have been no changes in the effluent and receiving water flow rates. The calculations from the previous limit evaluation are shown in attachment #2.

Effluent Data

Effluent ammonia nitrogen samples available from the current and previous permits are provided below:

Sample Date	Conc. (mg/L)
08/16/2016	0.7
09/06/2016	<0.1
09/26/2016	0.2
09/27/2017	2.1
06/24/2019	1.8
08/05/2019	1.2
08/17/2020	1
08/16/2021	1.1
Mean	1.0

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

Based on a comparison of the mean effluent concentration to 1/5th of the calculated limits, **daily maximum limits are recommended year round during the reissued permit term. The Drummond SD 1 shall notify the Department if the single limit of 3.5 mg/L or the variable daily maximum ammonia nitrogen limits based on effluent pH are preferred.**

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

On May 1, 2020, revisions to chs. NR 102 and NR 210, Wis. Adm. Codes, became effective which replace fecal coliform limits with new *Escherichia coli* (*E. coli*) limits for protection of recreational uses. Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities which are required to disinfect:

1. The geometric mean of *E. coli* bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.
2. No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 counts/100 mL.

It is recognized the Drummond SD 1 potentially has a detention time of at least 180 days, in which the resulting discharged effluent is thought to not pose a risk to human and animal health, as described in s. NR 210.06(3)(h), Wis. Adm. Code.

The facility noted in the permit application that the ponds 2 and 3 were completely drained for repairs during the 2021 discharge year. This is believed to have caused elevated BOD₅ and TSS levels noticed during the July 2022 discharge month because the wastewater stored in pond 1 that was transferred to ponds 2 and 3 did not have enough time to produce the typical level of treatment. As a result the discharge was limited during 2022. Effluent flow data reported during this time and potentially for 2023

is likely not representative of typical discharge conditions and may yield an unrepresentative 180-day rolling average flowrate for Drummond SD 1. Therefore, effluent flow during October 2018 – May 2022 will be utilized for this determination. Effluent discharges can occur anytime during April – November but June – October was utilized during the current permit term. The maximum 180-day rolling average flowrate for the facility is 0.0096 MGD (October 2018 – May 2022) including days discharge did not occur.

The volumetric capacity of the lagoons is approx. 14.6 MG, calculated based on dimensions provided by the facility in the facility diagram. Therefore, the estimated shortest detention time for the facility is approximately $14.6 \text{ MG} / 0.0096 \text{ MGD} = 1,533$ days and is significantly greater than the 180-day minimum. This detention time is essentially providing disinfection where additional disinfection treatment is not expected to be needed. **Therefore, bacteria limits or monitoring are not recommended during the reissued permit term.**

PART 5 – PHOSPHORUS

Technology-Based Effluent Limit

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of total phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

Because the Drummond SD 1 does not currently have an existing technology-based limit, the need for this limit in the reissued permit is evaluated. The data demonstrates that the annual monthly average phosphorus loading is less than 150 lbs/month, which is the threshold for municipalities in accordance with s. NR 217.04(1)(a)1, Wis. Adm. Code. **Therefore, the technology-based monthly average limit of 1.0 mg/L is not recommended during the reissued permit term.** In addition, the need for a WQBEL for phosphorus must be considered.

Annual Average Mass Total Phosphorus Loading

Month	Average Phosphorus Conc. (mg/L)	Total Effluent Flow (MG/month)	Calculated Mass (lbs/month)
June 2019	1.52	0.432	5.5
August 2019	2.78	0.434	10
August 2020	1.43	0.338	4.0
July 2021	0.4	0.446	1.5
October 2023	1.5	0.642	8.0
Average =			5.8

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

Water Quality-Based Effluent Limits (WQBEL)

Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Phosphorus criteria in s. NR 102.06, Wis. Adm. Code, do not apply to LAL waters as described in s. NR

102.06(6)(d), Wis. Adm. Code. These waters were not included in the USGS/WDNR stream and river studies and, therefore, the Department lacked the technical basis to determine and propose applicable criteria. At some time in the future, the Department may adopt phosphorus criteria based on new studies focusing on limited aquatic life waters. The Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges (June 2020) suggests that during the interim, WQBELs should be based on the criteria and flow conditions for the next stream segment downstream (or downstream lake or reservoir, if appropriate), because ss. 217.12 and 217.13, Wis. Adm. Code, state that the Department must set WQBELs to protect downstream waters. The LAL community classification applies for approx. 0.5 mi downstream of Outfall 001 until Weso Lake is reached. Weso Lake has a WWSF community classification so this would be the point of application for phosphorus water quality standards. However, lakes and reservoirs less than 5 acres in surface are excluded from phosphorus water quality standards as described in s. NR 102.06(6)(b), Wis. Adm. Code. Weso Lake is approx. 4.1 acres in surface area. **Therefore, a phosphorus WQBEL is not applicable for Drummond SD 1 at this time. Phosphorus monitoring is recommended to continue during the reissued permit term to determine the need for a phosphorus technology-based limit at the next permit reissuance.**

PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in Chapters NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. The daily maximum effluent temperature limitation shall be 86 °F for discharges to surface waters classified as Limited Aquatic Life according to s. NR 104.02(3)(b)1, Wis. Adm. Code, except for those classified as wastewater effluent channels and wetlands regulated under ch. NR 103 and described in s. NR 106.55(2), Wis. Adm. Code, which has a daily maximum effluent temperature limitation of 120 °F. The 120° F limit applies because the hydrologic classification is a wetland as described in the Receiving Water Classification Memorandum (July 2022).

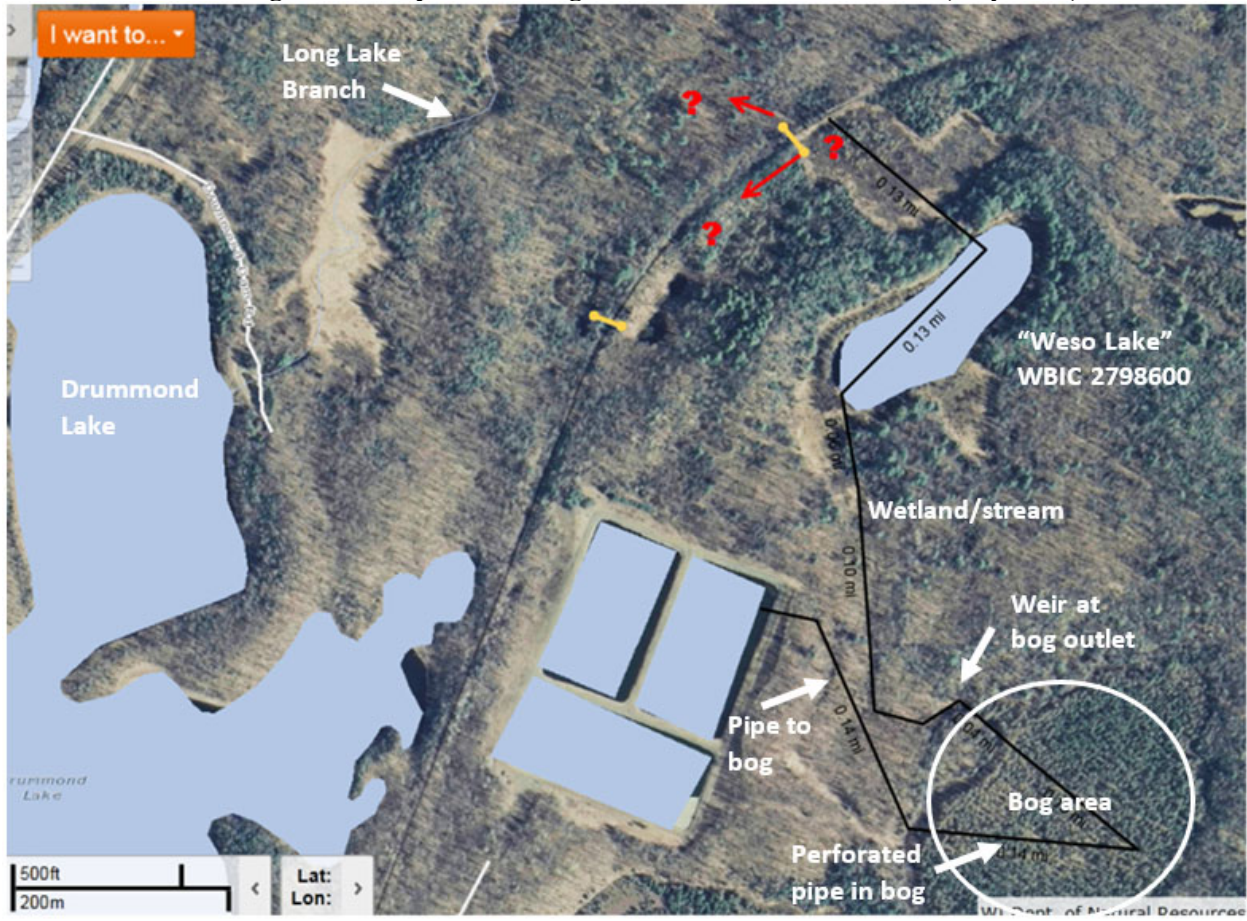
This facility provides hydraulic detention times of approx. 1,533 days as a worst case scenario, elevated effluent temperatures are unlikely, and discharge temperatures are expected to be similar to ambient conditions. The facility uses a fill and draw method of operation with effluent discharges occurring only during the cool weather periods in spring and fall when ambient temperatures are less than ambient inland lake conditions when considering downstream impacts to Weso Lake. **Therefore, temperature limits or monitoring are not recommended during the reissued permit term.**

PART 7 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document (2022)*.

Guidance in Chapter 1.11 of the WET Guidance Document (WET Testing of Minor Municipal Discharges) was consulted. This is a minor municipal discharge (< 1.0 MGD) comprised solely of domestic wastewater, with no history of WET failures and no toxic compounds detected at levels of concern. **No WET testing is recommended at this time because of the low risk in effluent toxicity.**

Discharge Area Map – Receiving Water Classification Memo (July 2022)



Weekly/Monthly Ammonia Nitrogen Limits (January 2013 Limit Evaluation)

Ammonia Limit Calculations Summary – Drummond Sanitary District		
Classification:	LAL	
EFFLUENT FLOW (MGD):	0.24	
MAX. EFFLUENT pH (s.u.):	8.7	
<u>BACKGROUND INFO:</u>	Summer	Winter
Ammonia (mg/L, default)	0.04	0.08
Temp. (deg C, default)	25	3
pH (std. units, default)	7.79	7.38
Weekly & Monthly Low Flows = 0 cfs	0	0
<u>CRITERIA (in mg/L):</u>	Summer	Winter
4-day Chronic	26.77	164.90
30-day Chronic	10.71	65.96
<u>EFFLUENT LIMITATIONS:</u>	Summer	Winter
Weekly average	27 mg/L	165 mg/L
Monthly average	11 mg/L	66 mg/L