

Permit Fact Sheet

General Information

Permit Number:	WI-0030830-08-0	
Permittee Name:	Dale Sanitary District No. 1	
Address:	PO Box 103	
City/State/Zip:	Dale WI 54931-0253	
Discharge Location:	West side of Depot Road about 3/10 mile South of Old Highway 10	
Receiving Water:	Unnamed tributary to the Rate River, located in the Arrowhead River and Daggets Creek Watershed in the Wolf River Basin	
Stream Flow (Q _{7,10}):	0 cfs	
Stream Classification:	At Outfall 001 Limited Aquatic Life (LAL); Unnamed tributary approx. 2 miles downstream of Outfall 001 Limited Forage Fish (LFF); Rat River approx. 3 miles downstream of Outfall 001 Warmwater Sport Fish (WWSF)	
Discharge Type:	Existing; Continuous	
Design Flow(s)	Daily Maximum	0.376 MGD
	Weekly Maximum	1.535 MGD
	Monthly Maximum	2.832 MGD
	Annual Average	0.060 MGD
Significant Industrial Loading?	None	
Operator at Proper Grade?	Facility Subclasses & Classification: Basic – A4 OIC Subclasses & Grade: Michael Pfankuch; Basic – A4	
Approved Pretreatment Program?	N/A	

Facility Description

The Dale Sanitary District No. 1 provides wastewater collection and treatment for the unincorporated community of Dale in southwest Outagamie County. The wastewater treatment facility consists of two aerated lagoons followed by a settling pond, designed for an average annual flow of 0.060 MGD. The facility also operates a submerged attached growth reactor tertiary treatment system for ammonia removal.

Substantial Compliance Determination

Enforcement During Last Permit: A Notice of Noncompliance (NON) was sent 2/3/22 for ammonia nitrogen daily max and monthly avg limit exceedances occurring February-August 2021. A second NON was sent 5/2/22 for ammonia nitrogen daily max and monthly avg limit exceedances occurring February-March 2022. The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on October 12, 2022, by Barti Oumarou, Wastewater Engineer, **this facility 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)
701	0.029 MGD (Avg. 2019-2023)	Influent - Representative samples shall be collected from the influent wet well.
001	0.026 MGD (Avg. 2019-2023)	Effluent - Representative samples shall be collected from the effluent flow channel.
002	Sludge was not removed during the current permit term and is not expected to be removed during the proposed permit term.	Lagoon Sludge - Liquid sludge that accumulates in the treatment lagoons. Representative samples shall be collected from various locations and depths within the lagoons and composited for analysis.

1 Influent - Monitoring Requirements

Sample Point Number: 701- Influent

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total		mg/L	Weekly	3-Hr Comp	
Suspended Solids, Total		mg/L	Weekly	3-Hr Comp	

Changes from Previous Permit:

Influent monitoring requirements were re-evaluated for the proposed permit term and no changes were made from the previous permit.

Explanation of Limits and Monitoring Requirements

BOD₅ and Total Suspended Solids (TSS) – Monitoring and reporting of BOD₅ and TSS is required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code.

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	
CBOD5	Weekly Avg	25 mg/L	Weekly	3-Hr Comp	See the Standard Requirements permit section for Percent Removal.
CBOD5	Monthly Avg	16 mg/L	Weekly	3-Hr Comp	See the Standard Requirements permit section for Percent Removal.
Suspended Solids, Total	Monthly Avg	60 mg/L	Weekly	3-Hr Comp	
Suspended Solids, Total	Weekly Avg	27 lbs/day	Weekly	Calculated	
Suspended Solids, Total	Monthly Avg	17 lbs/day	Weekly	Calculated	
Suspended Solids, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of TSS and report on the last day of the month on the eDMR. See TMDL Calculations permit section.
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of TSS discharged and report on the last day of the month on the eDMR. See TMDL Calculations permit section.
Dissolved Oxygen	Daily Min	4.0 mg/L	Weekly	Grab	
pH Field	Daily Min	6.0 su	3/Week	Grab	
pH Field	Daily Max	9.0 su	3/Week	Grab	
Chloride	Weekly Avg	490 mg/L	4/Week	3-Hr Comp	Interim limit. See the Chloride Variance - Implement Source Reduction Measures section and the Chloride Source Reduction Measures

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					(Target Value) Schedule of the permit.
Phosphorus, Total	Monthly Avg	6.5 mg/L	Monthly	3-Hr Comp	This is an interim MDV limit effective through September 30, 2028. See the Phosphorus MDV Interim Limit Schedule of the permit.
Phosphorus, Total	Monthly Avg	1.0 mg/L	Monthly	3-Hr Comp	This is an interim MDV limit effective on October 1, 2028. See the Phosphorus MDV Interim Limit Schedule of the permit.
Acute WET	Daily Max	1.0 TUa	See Listed Qtr(s)	3-Hr Comp	See the Whole Effluent Toxicity (WET) Testing permit section.
Chronic WET	Monthly Avg	1.7 TUc	See Listed Qtr(s)	3-Hr Comp	See the Whole Effluent Toxicity (WET) Testing permit section.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	Weekly	3-Hr Comp	Applies year-round. See the Daily Maximum Ammonia Nitrogen (NH3-N) Limits permit section.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	20 mg/L	Weekly	3-Hr Comp	Applies in October annually.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	33 mg/L	Weekly	3-Hr Comp	Applies November through March annually.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	6.8 mg/L	Weekly	3-Hr Comp	Applies in April annually.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	7.4 mg/L	Weekly	3-Hr Comp	Applies May and June annually.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	7.5 mg/L	Weekly	3-Hr Comp	Applies July through September annually.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	7.9 mg/L	Weekly	3-Hr Comp	Applies in October annually.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	13 mg/L	Weekly	3-Hr Comp	Applies November through March annually.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.7 mg/L	Weekly	3-Hr Comp	Applies in April annually.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	3.0 mg/L	Weekly	3-Hr Comp	Applies May through September annually.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	3-Hr Comp	Annual monitoring in rotating quarters. See Nitrogen Series Monitoring permit section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	3-Hr Comp	Annual monitoring in rotating quarters. See Nitrogen Series Monitoring permit section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Annual monitoring in rotating quarters. See Nitrogen Series Monitoring permit section. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Temperature		deg F	Weekly	Grab	Monitoring only January through December, 2028.

Changes from Previous Permit:

- Addition of weekly average and monthly average mass limits for total suspended solids (TSS) due to the Upper Fox Wolf River Basin (UFWB) Total Maximum Daily Load (TMDL).
- Decreased chloride weekly average interim limit from 510 mg/L to 490 mg/L.
- Changed chloride monitoring frequency from weekly to 4/week (4 consecutive days/month).
- Addition of phosphorus MDV (Multi-Discharger Variance) interim limits and monitoring requirements.
- Acute WET (Whole Effluent Toxicity) and Chronic WET testing requirements have been updated. Testing is required once annually, in rotating quarters. The Chronic WET limit has also been updated to 1.7 TU_c.
- The variable daily maximum ammonia nitrogen limit table in the permit has been expanded to include applicable limits at a lower effluent pH.
- Addition of annual total nitrogen monitoring (TKN, NO₂+NO₃ and Total N) in rotating quarters throughout the permit term.
- Addition of weekly temperature monitoring during the fourth year of the permit (2028) to ensure enough data is available to determine reasonable potential at the next permit reissuance.

Explanation of Limits and Monitoring Requirements

Monitoring Frequencies – The monitoring frequencies guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure 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.

The monitoring frequency for chloride was changed from weekly to 4/week (4 consecutive days/month); this data is used for reasonable potential determinations, as well as calculating the 4-day P99, per s. NR 106.05(3)(b), Wis. Adm. Code.

Categorical Limits

BOD5, Total Suspended Solids, pH, and Dissolved Oxygen – Standard municipal wastewater requirements for total suspended solids and pH are included based on ch. NR 210, Wis. Adm. Code, ‘Sewage Treatment Works’ requirements for discharges to fish and aquatic life streams. Monitoring and reporting of BOD₅ and total suspended solids is required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit. Chapter NR 102, Wis. Adm. Code, ‘Water Quality Standards for Surface Waters’ also specifies requirements for pH for fish and aquatic life streams.

Water Quality-Based Limits

Refer to the WQBEL memo, Water Quality-Based Effluent Limitations for Dale Sanitary District No. 1 WPDES Permit No. WI-0030830-08, for the detailed calculations, prepared by the Water Quality Bureau, Nicole Krueger, Water Resources Engineer, dated April 4, 2023, used for this reissuance.

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.

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 WQBELs for chloride. Effluent limits are necessary in accordance with the reasonable potential analysis presented in the April 4, 2023 WQBEL memo. Section NR 106.83 of subchapter VII also provides for some permittees to obtain temporary relief from a chloride WQBEL through the use of a chloride variance. The Dale Sanitary District No. 1 applied for a chloride variance, under the provisions of s. NR 106.83, Wis. Adm. Code, with its application for permit reissuance. The previous permit also included a chloride variance.

The Department reviewed Dale Sanitary District’s application for a chloride variance. The information supplied in the application supports the establishment of an interim effluent limit. The permittee and the Department have reached agreement on an interim chloride limit of 490 mg/L (expressed as a weekly average), a target value of 460 mg/L, implementation of chloride source reduction measures, and submittal of annual progress reports each year by March 31st. The chloride source reduction measures that are required to be implemented can be found in the proposed permit.

The Department concludes that the Dale Sanitary District No. 1 is qualified for a variance from the water quality standard for chloride and proposes reissuance of this permit with the proposed variance.

Phosphorus – Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorous. The final phosphorus WQBELs are TMDL-based mass limits of 0.33 lbs/day as a monthly average and 0.11 lbs/day as a six-month average and were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) for phosphorus as provided for in s. 283.16, Wis. Stats., and approved by USEPA on February 6, 2017 for a 10-year duration. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden. The interim effluent limit for total phosphorus is 6.5 mg/L as a monthly average limit effective at permit reissuance. The

limit was derived using DMR data from 3/21/2018 to 12/27/2022. Additionally, an MDV interim limit of 1.0 mg/L as a monthly average limit has been added and goes into effect per a compliance schedule.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the proposed permit term, comply with interim limits and make annual payments to participating county(s) by March 1 of each year based on the pounds of phosphorus discharged during the previous year in excess of the specified target value. A reopener clause is included in the permit to address the current MDV's expiration date, as a permit action may be required to update or remove variance provisions if the MDV is altered or unavailable after February 6, 2027.

The "price per pound" value is \$50.00 adjusted for CPI annually during the first quarter as defined by s. 283.16(8)(a)2, Wis. Stats and takes effect for reissued permits with effective dates starting April 1. This may differ from the "price per pound" that is public noticed; however, the "price per pound" is set upon reissuance and is applicable for the entire permit term. The participating county(s) uses these payments to implement non-point source phosphorus control strategies at the watershed level. By March 1 of each year the permittee shall make a payment(s) to participating county(s) of \$64.75 per pound of phosphorus discharged during the previous year in excess of the target value of 0.2 mg/L.

Total Nitrogen Monitoring (TKN, NO₂+NO₃ and Total N) – The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under §§ 283.55(1)(e), Wis. Stats., which 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 through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the "Guidance for Total Nitrogen Monitoring in Wastewater Permits" dated October 1, 2019. Annual tests are scheduled in the following rotating quarters: **October – December 2024; July – September 2025; April – June 2026; January – March 2027; and October – December 2028.**

PFOS/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.

Whole Effluent Toxicity (WET) – 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. The chronic WET limit is decreased due to using more accurate background low flows at the Rat River. Acute and Chronic WET tests are scheduled in the following rotating quarters: **October – December 2024; July – September 2025; April – June 2026; January – March 2027; and October – December 2028.**

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. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects. Weekly temperature monitoring has been added during the fourth year of the permit.

TMDL Derived Limits for TSS – TMDL Approved - Waste load allocations (WLAs) specified in TMDLs are expressed as WQBELs (water quality-based effluent limits). The waste load allocated-derived WQBELs are consistent with the assumptions and requirements of the approved UFWB TMDL.

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	Fecal coliform reduction	Injection; Incorporation	Land application – if sludge is removed	No sludge was removed during the previous permit term
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No						
Is a priority pollutant scan required? No						

Sample Point Number: 002- Lagoon Sludge

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Once	Composite	List 1 parameters. See the Requirements for Potential and/or Unscheduled Land Application of Sludge section of the permit.
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 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	List 2 parameters. Monitoring required only if sludge is land applied. See List 2 Analysis section of the permit.
Nitrogen, Ammonium (NH4-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	High Quality	10 mg/kg	Once	Composite	See the Requirements for Potential and/or Unscheduled Land Application of Sludge permit section, the Sludge Analysis for PCBs permit section, and the Standard Requirements section of the permit for Monitoring and Calculating PCB Concentrations in Sludge.
PCB Total Dry Wt	Ceiling	50 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:

- The year in which PCB monitoring is required has been updated to 2025.
- Addition of once per permit term PFAS (PFOA + PFOS) monitoring pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

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

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 (WEP) – 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.

4 Schedules

4.1 Chloride Source Reduction Measures (Target Value)

As a condition of the variance to the water quality based effluent limitation(s) for chloride granted in accordance with s. NR 106.83(2), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
<p>Annual Chloride Progress Report: Submit an annual chloride progress report related to the source reduction activities for the previous year. The annual chloride progress report shall:</p> <p>Indicate which chloride source reduction measures or activities in the Source Reduction Plan have been implemented and state which, if any, source reduction measures from the Source Reduction Plan were not pursued and why. Include an assessment of whether each implemented source reduction measure appears to be effective or ineffective at reducing pollutant discharge concentrations and identify actions planned for the upcoming year;</p> <p>Include an analysis of trends in weekly, monthly and annual average chloride concentrations and total mass discharge of chloride based on chloride sampling and flow data; and</p> <p>Include an analysis of how effluent chloride varies with time and with significant loadings of chloride. Note that the interim limitation listed in the Surface Water section of this permit remains enforceable until new enforceable limits are established in the next permit issuance.</p> <p>The first annual chloride progress report is to be submitted by the Date Due.</p>	03/31/2025
<p>Annual Chloride Progress Report #2: Submit the chloride progress report, related to the source reduction activities for the previous year, as defined above.</p>	03/31/2026
<p>Annual Chloride Progress Report #3: Submit the chloride progress report, related to the source reduction activities for the previous year, as defined above.</p>	03/31/2027

<p>Annual Chloride Progress Report #4: Submit the chloride progress report, related to the source reduction activities for the previous year, as defined above.</p>	03/31/2028
<p>Final Chloride Report: Submit the final chloride report documenting the success in meeting the chloride target value of 460 mg/L, as well as the anticipated future reduction in chloride sources and chloride effluent concentrations.</p> <p>The report shall:</p> <p>Summarize chloride source reduction measures that have been implemented during the current permit term and state which, if any, source reduction measures from the Source Reduction Plan were not pursued and why;</p> <p>Include an assessment of which source reduction measures appear to have been effective or ineffective. Evaluate any needed changes to the pollutant reduction strategy accordingly;</p> <p>Include an analysis of trends in weekly, monthly and annual average chloride concentrations and total mass discharge of chloride based on chloride sampling and flow data during the current permit term; and</p> <p>Include an analysis of how influent and effluent chloride varies with time and with significant loadings of chloride as identified in the source reduction plan.</p> <p>If the permittee intends to reapply for a chloride variance, for the reissued permit, proposed target limits and a detailed source reduction measures plan, outlining the source reduction activities proposed for the upcoming permit term, shall also be included per ss. NR 106.90 (5) and NR 106.83 (4), Wis. Adm. Code. An updated source reduction measures plan shall:</p> <p>Include an explanation of why or how each source reduction measure will result in reduced discharge of the target pollutant; and</p> <p>Evaluate any available information on pollutant sources, timing, and concentration to update the mass balance assumptions and expected sources of the pollutant, and</p> <p>Identify any information needs that would help to better determine pollutant sources and make plans to collect that information.</p> <p>Note that the target value is the benchmark for evaluating the effectiveness of the chloride source reduction measures but is not an enforceable limitation under the terms of this permit.</p>	03/31/2029
<p>Annual Chloride Reports After Permit Expiration: In the event that this permit is not reissued by the date the permit expires the permittee shall continue to submit annual chloride reports for the previous year following the due date of Annual Chloride Progress Reports listed above. Annual Chloride Progress Reports shall include the information as defined above.</p>	

4.2 Phosphorus Multi-Discharger Variance Interim Limit (1.0 mg/L)

The permittee shall comply with the 1.0 mg/L MDV interim effluent limit by the end of this compliance schedule.

Required Action	Due Date
<p>Submit Final Plans & Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Wis. Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with the interim phosphorus effluent limit and a schedule for completing construction of the upgrades by the 'Complete Construction' date specified below.</p>	09/30/2025

Treatment Plant Upgrade: Upon approval of the final construction plans and schedule by the Department and pursuant to s. 281.41, Wis. Stats., the permittee shall initiate construction of the treatment plant upgrades in accordance with the approved plans and specifications.	09/30/2026
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2027
Complete Construction: The permittee shall complete construction of the proposed treatment plant upgrades.	09/30/2028
Achieve Compliance: The permittee shall achieve compliance with the phosphorus interim effluent limit of 1.0 mg/L.	10/01/2028

4.3 Phosphorus Payment per Pound to County

The permittee is required to make annual payments for phosphorus reductions to the participating county or counties in accordance with s. 283.16(8), Wis. Stats., and the following schedule. The price per pound will be set at the time of permit reissuance and will apply for the duration of the permit.

Required Action	Due Date
<p>Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: (lbs of phosphorus discharged minus the permittee's target value) times (\$64.75 per pound) or \$640,000, whichever is less. See the payment calculation steps in the Surface Water section.</p> <p>The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date.</p> <p>Note: The applicable Target Value is 0.2 mg/L as defined by s. 283.16(1)(h), Wis. Stats. The "per pound" value is \$50.00 adjusted for CPI.</p>	03/01/2025
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2026
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2027
Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2028
Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2029
Continued Coverage: If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharger Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats.	
Annual Verification of Payment After Permit Expiration: In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit Form 3200-151 to the Department indicating total amount remitted to the participating counties by March 1 each year.	

4.4 Phosphorus Schedule - Optimization Plan

The permittee is required to optimize performance to control phosphorus discharges per the following schedule.

Required Action	Due Date
Optimization Plan: The permittee shall prepare an Optimization Plan and submit it for Department approval. The plan shall include an evaluation of collected effluent data, possible source reduction measures and operational improvements to optimize performance to control phosphorus discharges. The plan shall contain a schedule for implementation of the measures and improvements. Once the plan is approved by the Department, the permittee shall take the steps called for in the Optimization Plan and follow the schedule of implementation as approved.	09/30/2025
Progress Report #1: Submit a progress report on optimizing removal of phosphorus.	09/30/2026
Progress Report #2: Submit a progress report on optimizing removal of phosphorus.	09/30/2027
Progress Report #3: Submit a progress report on optimizing removal of phosphorus. This schedule item is contingent upon continued federal authorization of the MDV. See "MDV Reopener Clause" in the Surface Water section of this permit.	09/30/2028
Progress Report #4: Submit a progress report on optimizing removal of phosphorus. This schedule item is contingent upon continued federal authorization of the MDV. See "MDV Reopener Clause" in the Surface Water section of this permit.	09/30/2029

Explanation of Schedules

Chloride Source Reduction Measures (Target Value) – This schedule is required to ensure that the permittee maintains compliance with the conditions and requirements of the chloride variance.

Phosphorus Multi-Discharger Variance Interim Limit (1.0 mg/L) – Subsection 283.16(6), Wis. Stats., establishes required interim phosphorus effluent limits that must be met for multi-discharger variance (MDV) eligibility. Subsection 283.16(6)(am), Wis. Stats., allows a technology based phosphorus limit of 1.0 mg/L as the MDV interim limit if a permittee certifies that its treatment facility cannot achieve compliance with the MDV interim limit without a major facility upgrade. The permittee qualifies for a 1.0 mg/L total phosphorus MDV interim limit and this schedule provides the permittee with four years to comply with that limit.

Phosphorus Payment per Pound to County – Subsection 283.16(6)(b), Wis. Stats., requires permittees that have received approval for the multi-discharger variance (MDV) to implement a watershed project that is designed to reduce non-point sources of phosphorus within the HUC 8 watershed in which the permittee is located. The permittee has selected the “Payment to Counties” watershed option described in s. 283.16(8), Wis. Stats. Under this option the permittee shall make annual payment(s) to participating county(s) that are calculated based on the amount of phosphorus actually discharged during a calendar year in pounds per year less the amount of phosphorus that would have been discharged had the permittee discharged phosphorus at a target value concentration of 0.2 mg/L. The pounds of phosphorus discharged in excess of the target value is multiplied by a per pound phosphorus charge that will equal \$64.75 per pound. This schedule requires the permittee to submit Form 3200-151 to the Department indicating the total amount remitted to the participating county(s).

Phosphorus Schedule - Optimization Plan – Per s. 283.16(6)(a), Wis. Stats. the Department may include a requirement that the permittee optimize the performance of a point source in controlling phosphorus discharges, which may be necessary to achieve compliance with multi-discharger variance interim limits. This compliance schedule requires the permittee to prepare an optimization plan with a schedule for implementation and submit it for Department approval. The permittee shall take the steps called for in the optimization plan and submit annual progress reports on optimizing the removal of phosphorus.

Attachments:

WQBEL Memo: Water Quality-Based Effluent Limitations for Dale Sanitary District No. 1 WPDES Permit No. WI-0030830-08, by Nicole Krueger, Water Resources Engineer, dated April 4, 2023

Chloride Variance EPA Data Sheet

SRM (Source Reduction Measures) Plan, dated 2024

Phosphorus Multi-Discharger Variance Application for Municipal Facilities, signed September 2, 2021

Multi-Discharger Variance Application Evaluation Checklist, signed September 13, 2021

Conditional Approval of a Multi-Discharger Phosphorus Variance letter, dated and signed September 13, 2021

Expiration Date:

September 30, 2029

Justification Of Any Waivers From Permit Application Requirements:

No waivers from permit application requirements were granted.

Prepared By: Sarah Donoughe, Wastewater Specialist-Adv

Date: April 16, 2024

Notice of reissuance is published in the Post Crescent, 306 W Washington St, Appleton, WI 54911-4745.

CORRESPONDENCE/MEMORANDUM

DATE: 04/04/2023

TO: Sarah Adkins – NER

FROM: Nicole Krueger – SER *Nicole Krueger*

SUBJECT: Water Quality-Based Effluent Limitations for Dale Sanitary District No. 1
WPDES Permit No. WI-0030830-08

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 Dale Sanitary District No. 1 in Outagamie County. This municipal wastewater treatment facility (WWTF) discharges to an unnamed tributary to the Rat River, located in the Arrowhead River and Daggets Creek Watershed in the Wolf River Basin. This discharge is included in the Upper Fox and Wolf River TMDL as approved by EPA in February 2020. 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	Six-Month Average	Footnotes
Flow Rate						1,2
CBOD ₅			25 mg/L	16 mg/L		1
TSS TMDL			27 lbs/day	60 mg/L 17 lbs/day		3
Dissolved Oxygen		4.0 mg/L				1
pH	9.0 s.u.	6.0 s.u.				1
Chloride			400 mg/L			4
Phosphorus LCA HAC TMDL				6.5 mg/L 1.0 mg/L 0.33 lbs/day	0.11 lbs/day	3,5
Acute WET	1.0 TUa					6,7
Chronic WET				1.7 TUc		6,7
Ammonia Nitrogen November – March April May – June July – September October	Variable Variable Variable Variable Variable		33 mg/L 6.8 mg/L 7.4 mg/L 7.5 mg/L 20 mg/L	13 mg/L 2.7 mg/L 3.0 mg/L 3.0 mg/L 7.9 mg/L		8
TKN, Nitrate+Nitrite, and Total Nitrogen						9
Temperature						10

Footnotes:

1. No changes from the current permit.
2. Monitoring only.

3. The TSS and phosphorus mass limits are based on the Total Maximum Daily Load (TMDL) for the Upper Fox and Wolf River Basin to address phosphorus water quality impairments within the TMDL area. The TMDL was approved by EPA in February 2020.
4. This is the WQBEL for chloride. An alternative effluent limitation of 490 mg/L (equal to the upper 99th percentile of the permittee's 4-day average of the representative data available to the department) as a weekly average may be included in the permit in place of this limit if the chloride variance application that was submitted is approved by EPA. If the variance is not approved, a wet weather mass limit would also be required.
5. Under the phosphorus MDV, a level currently achievable (LCA) interim limit of 6.5 mg/L should be effective upon permit reissuance. A compliance schedule may be included in the permit until the highest attainable condition (HAC) limit of 1.0 mg/L can be met. The final WQBELs are the TMDL-based mass limits.
6. Acute and chronic WET testing is recommended 1x yearly. The Instream Waste Concentration (IWC) to assess chronic test results is 58%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 75%, 50%, 25% & 12.5% and the dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the Rat River.
7. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge and should continue after the permit expiration date (until the permit is reissued).
8. 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. These limits apply year-round.

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

9. 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).
10. Monitoring only for one year.

The recommended limits meet the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, and additional limits are not required.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Nicole Krueger at Nicole.Krueger@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, 2009 Ammonia Limits Calculations, & Outfall Map

PREPARED BY: Nicole Krueger, Water Resources Engineer – SER

E-cc: Barti Oumarou, Wastewater Engineer – NER
Heidi Schmitt Marquez, Regional Wastewater Supervisor – NER
Diane Figiel, Water Resources Engineer – WY/3
Kari Fleming, Environmental Toxicologist – WY/3
Laura Dietrich – Wastewater Specialist – WY/Waukesha

Attachment #1
**Water Quality-Based Effluent Limitations for
Dale Sanitary District No. 1**

WPDES Permit No. WI-0030830-08

Prepared by: Nicole Krueger

PART 1 – BACKGROUND INFORMATION

Facility Description

The Dale Sanitary District No. 1 provides wastewater collection and treatment for the unincorporated community of Dale in southwest Outagamie County. The wastewater treatment facilities consist of two aerated lagoons followed by a settling pond, designed for an average annual flow of 0.060 MGD.

Disinfection of the effluent is not required based on the conditions of s. NR 210.06(3), Wis. Adm. Code. It should be noted that recreational use surveys may be re-evaluated in the future to ensure the conditions are being met. This re-evaluation could result in requiring disinfection of the effluent at that time.

Attachment #3 is a map of the area showing the approximate location of Outfall 001.

Existing Permit Limitations

The current permit, which expired on 09/30/2022, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
CBOD ₅			25 mg/L	16 mg/L		2,3
TSS				60 mg/L		2,4
Dissolved Oxygen		4.0 mg/L				2,5
pH	9.0 s.u.	6.0 s.u.				2
Chloride			510 mg/L			
Phosphorus Interim Final				Narrative 0.225 mg/L	0.075 mg/L 0.038 lbs/day	6
Acute WET	1.0 TUa					7
Chronic WET				2.6 TUc		7
Ammonia Nitrogen November – March April May – June July – September October	Variable Variable Variable Variable Variable		33 mg/L 6.8 mg/L 7.4 mg/L 7.5 mg/L 20 mg/L	13 mg/L 2.7 mg/L 3.0 mg/L 3.0 mg/L 7.9 mg/L		8

Footnotes:

1. Monitoring only.

Attachment #1

2. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
3. The CBOD₅ limits are from s. NR 210.05(3)(e), Wis. Adm. Code.
4. The monthly average TSS limit of 60 mg/L is a variance limit for aerated lagoon systems per s. NR 210.07(2), Wis. Adm. Code.
5. This limit is based on the Limited Aquatic Life (LAL) community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code.
6. A compliance schedule is in the current permit to meet the final WQBEL by 10/01/2026.
7. Acute and chronic WET testing is required 1x yearly. The IWC for chronic WET is 38%.
8. The pH-based variable daily maximum ammonia limits are shown in the table below:

Effluent pH - su	NH ₃ -N Limit – mg/L	Effluent pH - su	NH ₃ -N Limit – mg/L
pH ≤ 7.1	> 46	8.0 < pH ≤ 8.1	11
7.1 < pH ≤ 7.2	46	8.1 < pH ≤ 8.2	8.8
7.2 < pH ≤ 7.3	40	8.2 < pH ≤ 8.3	7.3
7.3 < pH ≤ 7.4	35	8.3 < pH ≤ 8.4	6.0
7.4 < pH ≤ 7.5	31	8.4 < pH ≤ 8.5	4.9
7.5 < pH ≤ 7.6	26	8.5 < pH ≤ 8.6	4.1
7.6 < pH ≤ 7.7	22	8.6 < pH ≤ 8.7	3.4
7.7 < pH ≤ 7.8	19	8.7 < pH ≤ 8.8	2.8
7.8 < pH ≤ 7.9	16	8.8 < pH ≤ 8.9	2.4
7.9 < pH ≤ 8.0	13	8.9 < pH ≤ 9.0	2.0

Receiving Water Information

- Name: Unnamed tributary to the Rat River
- Waterbody Identification Code (WBIC): 2522200
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: This receiving water is codified in Table 5 in ch. NR 104, Wis. Adm. Code as a limited aquatic life (LAL) classification from the outfall to the Winnebago – Outagamie County line. From the County line to the Rat River, the water is classified as Limited Forage Fish (LFF). The Rat River is classified as the default warmwater sport fish. Note: Cold Water and Public Water Supply criteria are used for bioaccumulating compounds of concern because the discharge is within the Great Lakes basin.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q₁₀ and 7-Q₂ values are estimates for the unnamed tributary where Outfall 001 is located due to the noncontinuous nature of the stream.
 - 7-Q₁₀ = 0 cfs (cubic feet per second)
 - 7-Q₂ = 0 cfs
 - Unnamed tributary – LFF, approximately 2 miles downstream of Outfall 001
 - 7-Q₁₀ = 0 cfs
 - 7-Q₂ = 0 cfs
 - Rat River – WWSF, approximately 3 miles downstream of Outfall 001
 - 7-Q₁₀ = 0.27 cfs
 - 7-Q₂ = 1.15 cfs
- Hardness = 411 mg/L as CaCO₃. This value represents the geometric mean of data from effluent data from the permit application from 02/04/2022 – 02/23/2022. Effluent hardness is used in place of receiving water because there is no receiving water flow upstream of the discharge.

Attachment #1

- % 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.
- Source of background concentration data: Background concentrations are not included because they don't impact the calculated WQBEL when the receiving water low flows are equal to zero.
- Multiple dischargers: None.
- Impaired water status: The Rat River, approximately 3 miles downstream, is 303(d) listed as impaired for total phosphorus.

Effluent Information

- Design flow rate(s):
Annual average = 0.060 MGD (Million Gallons per Day)
For reference, the actual average flow from 10/01/2017 – 12/31/2022 was 0.027 MGD.
- Hardness = 411 mg/L as CaCO₃. This value represents the geometric mean of data from the permit reissuance application from 02/04/2022 – 02/23/2022.
- 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 water supply from wells.
- Additives: None.
- Effluent characterization: This facility is categorized as a minor municipality, so the permit application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus ammonia, chloride, hardness and phosphorus.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2 below, in the column titled “MEAN EFFL. CONC.”. Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.

Effluent Copper Data

Sample Date	Copper µg/L	Sample Date	Copper µg/L	Sample Date	Copper µg/L
2/4/2022	20	3/2/2022	20	3/18/2022	22
2/11/2022	20	3/8/2022	27	3/22/2022	23
2/16/2022	21	3/11/2022	25	3/25/2022	20
2/23/2022	20	3/15/2022	24		
1-day P ₉₉ = 28 µg/L					
4-day P ₉₉ = 25 µg/L					

Effluent Chloride Data

	Chloride mg/L
1-day P ₉₉	610
4-day P ₉₉	492
30-day P ₉₉	427
Mean	392
Std	78.6
Sample size	248
Range	225 – 754

Attachment #1

The following table presents the average concentrations and loadings at Outfall 001 from 10/01/2017 – 12/31/2022 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

	Average Measurement
CBOD ₅	3.26 mg/L*
TSS	5.75 mg/L*
pH field	8.04 s.u.
Dissolved Oxygen	9.77 mg/L
Phosphorus	3.53 mg/L
Ammonia Nitrogen	7.28 mg/L*
Chloride	392 mg/L

*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

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P₉₉) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

Acute Limits based on 1-Q₁₀

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-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 = Acute toxicity criterion 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 Dale.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	REF. HARD.* mg/L	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P ₉₉	1-day MAX. CONC.
Arsenic		340	340	68.0	0.67		
Cadmium	411	146	146	29.2	<0.3		
Chromium	301	4446	4446	889	2		
Copper	411	58.9	58.9			28	27
Lead	356	365	365	72.9	<3.5		
Nickel	268	1080	1080	216	12		
Zinc	333	345	345	68.9	29		
Chloride (mg/L)		757	757			610	754

* The indicated hardness may differ from the effluent hardness because the effluent hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the acute criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

** Per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016 consideration of ambient concentrations and 1-Q₁₀ flow rates yields a more restrictive limit than the 2 × ATC method of limit calculation.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	REF. HARD.* mg/L	CTC	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P ₉₉	4-day MAX. CONC.
Arsenic		152	152	30.4	0.67		
Cadmium	175	3.82	3.82	0.76	<0.3		
Chromium	301	326	326	65.2	2		
Copper	411	34.7	34.7			25	
Lead	356	95.5	95.5	19.1	<3.5		
Nickel	268	169	169	33.8	12		
Zinc	333	345	345	68.9	29		
Chloride (mg/L)		395	395			492	583

* The indicated hardness may differ from the receiving water hardness because the receiving water hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the chronic criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

Monthly Average Limits based on Wildlife Criteria (WC)

The effluent characterization did not include any effluent sampling results for substances for which Wildlife Criteria exist.

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	HTC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	880	880	176	<0.3
Chromium (+3)	8400000	8400000	1680000	2
Lead	2240	2240	448	<3.5
Nickel	110000	110000	22000	12

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	HCC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	40	40	8.0	0.67

In addition to evaluating the need for limits for each individual substance for which HCC exist, s. NR 106.06(8), Wis. Adm. Code, requires the evaluation of the cumulative cancer risk. Because no effluent limits are needed based on HCC, determination of the cumulative cancer risk is not needed per s. NR 106.06(8), Wis. Adm. Code.

Conclusions and Recommendations

Based on a comparison of the effluent data and calculated effluent limitations, **effluent limitations are required for chloride.**

Chloride – Considering available effluent data from the current permit term (10/09/2017 – 12/27/2022), the 1-day P₉₉ chloride concentration is 610 mg/L, and the 4-day P₉₉ of effluent data is 492 mg/L.

Because the 4-day P₉₉ exceeds the calculated weekly average WQBEL, an effluent limit is needed in accordance with s. NR 106.05(4)(b), Wis. Adm. Code.

However, Subchapter VII of ch. NR 106, Wis. Adm. Code, provides for a variance from water quality standards for this substance, and Dale has requested such a variance. That variance may be granted subject to the following conditions:

- 1) The permit shall include an “Interim” limitation intended to prevent an increase in the discharge of Chloride;
- 2) The permit shall specify “Source Reduction Measures” to be implemented during the permit term, with periodic progress reports; and
- 3) The permit shall include a “Target Limit” or “Target Value” to gage the effectiveness of the Source Reduction Measures, and progress toward the WQBELs.

Interim Limit for Chloride

Section NR 106.82(9), Wis. Adm. Code, defines a “Weekly average interim limitation” as either the 4-day P₉₉ concentration or 105% of the highest weekly average concentration of the representative data.

As a result, **a year-round weekly average interim limitation of 490 mg/L is recommended for permit reissuance.** This value is equal to the 4-day P₉₉ of representative effluent data, rounded to two significant figures.

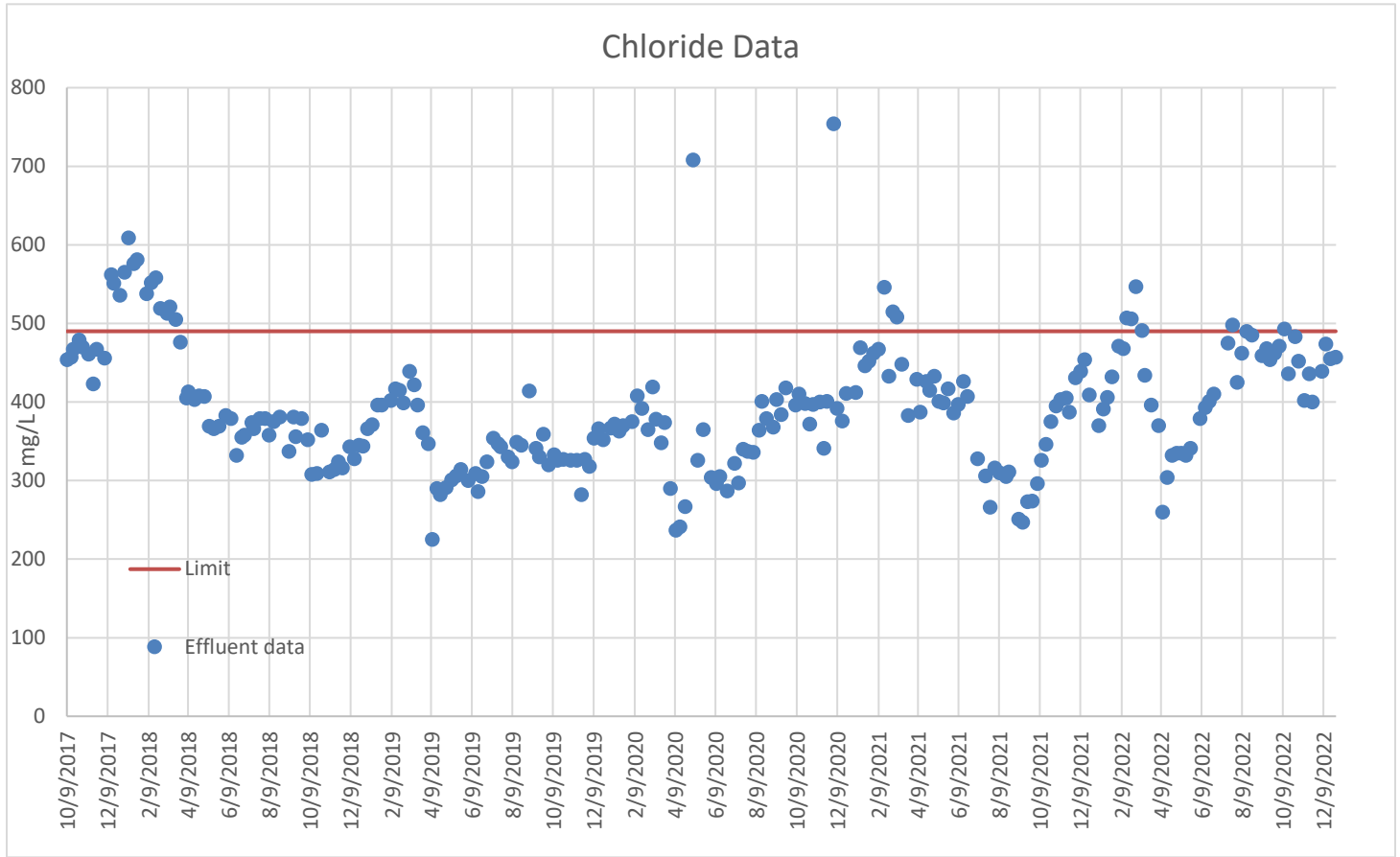
A target limit and permit language for Source Reduction Measures are not recommended as part of this evaluation. These should follow contact with Dale. Though if the Department and Dale are unable to reach agreement on all the terms of a Chloride Variance, the calculated limits described earlier should be included in the permit, in accordance with s. NR 106.83(3), Wis. Adm. Code.

Chloride Monitoring Recommendations

Four samples per month (on consecutive days) are recommended. This allows for averaging of the results to compare with the interim limit and allows the use of the average in determining future interim limits, and degree of success with chloride reduction measures.

In the absence of a variance, Dale would be subject to the WQBEL of 400 mg/L as a weekly average; the weekly average mass limit of 200 lbs/day ($400 \text{ mg/L} \times 0.060 \text{ MGD} \times 8.34$); and an alternative wet weather mass limit.

Below is a graph of chloride data from the current permit term compared to the recommended interim limit of 490 mg/L:



Mercury – The permit application did not require monitoring for mercury because Dale 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).” However, sludge sampling is not available because Dale is a lagoon facility that has not removed solids in the last five years. 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. **No monitoring is recommended.**

PFOS and PFOA– The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based the type of discharge, the effluent flow rate, the lack of indirect dischargers contributing to the collection system, **PFOS and PFOA monitoring is not recommended.** If information becomes available that indicates the presence of PFOS or PFOA in the effluent or source water, the monitoring requirements may change.

**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. The current permit has daily maximum, weekly average and monthly average limits. These limits are re-evaluated at this time due to the following changes:

- Subchapter IV of ch. NR 106, Wis. Adm. Code allows limits based on available dilution instead of limits set to twice the acute criteria.
- The maximum expected effluent pH has changed

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

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

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

Where:

A = 0.633 and B = 90.0 for Limited Aquatic Life, and
 pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 1184 sample results were reported from 10/03/2017 – 12/30/2022. The maximum reported value was 8.9 s.u. (Standard pH Units). The effluent pH was 8.8 s.u. or less 99% of the time. The 1-day P₉₉, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 9.2 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 9.1 s.u. Therefore, a value of 8.8 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 8.8 s.u. into the equation above yields an ATC = 1.8 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method

In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are either set equal to two times the nitrogen limits if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q₁₀ (estimated as 80 % of 7-Q₁₀) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit mg/L
2×ATC	3.7
1-Q ₁₀	1.8

The 1-Q₁₀ method yields the most stringent limits for Dale.

The current permit has variable daily maximum effluent limits based on effluent pH. Presented below is a table of daily maximum limitations corresponding to various effluent pH values.

Daily Maximum Ammonia Nitrogen Limits – LAL

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

Section NR 106.33(2), Wis. Adm. Code, was updated effective September 1, 2016. As a result, seasonal 20 and 40 mg/L thresholds for including ammonia limits in municipal discharge permits are no longer applicable under current rules. As such, the table has been expanded from the table in the current permit to include ammonia nitrogen limits throughout the pH range.

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

The weekly and monthly average ammonia nitrogen limits calculation from the previous memo do not change because there have been no changes in the effluent and receiving water flow rates. The calculations from the previous WQBEL memo are shown in Attachment #2.

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from 10/13/2017 – 12/27/2022, with those results being compared to the calculated limits to determine the need to include ammonia limits in Dale’s permit for the respective month ranges. That need is determined by calculating 99th upper percentile (or P₉₉) values for ammonia during each of the month ranges and comparing the daily maximum values to the daily maximum limit.

Ammonia Nitrogen mg/L	November – March	April	May – June	July – September	October
1-day P ₉₉	50	59	28	10	5.1
4-day P ₉₉	30	34	16	5.8	2.8
30-day P ₉₉	17	19	8.1	2.5	1.3
Mean*	12	13	5.0	1.1	0.70
Std	10	12	6.2	2.8	1.2
Sample size	108	20	39	57	24
Range	<0.1 – 34	<0.1 – 34	<0.1 – 23	<0.1 – 17	<0.1 – 5.3

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

Based on this comparison, monthly limits are required November – March, weekly and monthly limits are required April and May – June.

Attachment #1

The permit currently has daily maximum, weekly average, and monthly average limits year-round. Where there are existing ammonia nitrogen limits in the permit, the limits must be retained regardless of reasonable potential, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:

- (b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

Conclusions and Recommendations

In summary, after rounding to two significant figures, the following ammonia nitrogen limitations are recommended. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code.

Final Ammonia Nitrogen Limits

	Daily Maximum mg/L	Weekly Average mg/L	Monthly Average mg/L
November – March	Variable	33	13
April	Variable	6.8	2.7
May – June	Variable	7.4	3.0
July – September	Variable	7.5	3.0
October	Variable	20	7.9

PART 4 – 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 Dale 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, and therefore **no technology-based limit is required.**

Annual Average Mass Total Phosphorus Loading

Month	Result mg/L	Total Flow MG/month	Total Phosphorus lb./mo.
Jan 2022	5.60	0.63	29.2
Feb 2022	8.45	0.48	33.5
Mar 2022	7.50	0.76	47.4
April 2022	5.20	1.20	52.0
May 2022	4.60	0.64	24.4
June 2022	2.40	0.61	12.2
July 2022	1.75	0.18	2.57
Aug 2022	1.75	0.58	8.44
Sept 2022	0.81	0.65	4.38
Oct 2022	0.87	0.54	3.88
Nov 2022	1.73	0.73	10.6

Attachment #1

Month	Result mg/L	Total Flow MG/month	Total Phosphorus lb./mo.
Dec 2022	1.23	0.71	7.21
Average			19.7

Total P (lbs/month) = Result (mg/L) × total flow (MG/month) × 8.34 (lbs/gallon)
 Where total flow is the sum of the actual (not design) flow (in MGD) for that month

In addition, the need for a WQBEL for phosphorus must be considered.

Total Maximum Daily Load

Total phosphorus (TP) effluent limits in lbs/day are calculated as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* (April 2020) and are based on the annual phosphorus wasteload allocation (WLA) given in pounds per year. This WLA found in Appendix H of the *Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Upper Fox and Wolf River Basins (UFW TMDL)* report dated February 2020 are expressed as maximum annual loads (lbs/year). The WLA for Dale is 31 lbs/year.

For the reasons explained in the April 30, 2012 paper entitled *Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin*, WDNR has determined that the phosphorus WQBELs set equal to WLAs would not be consistent with the assumptions and requirements of the TMDL. Therefore, limits given to facilities included in the Upper Fox and Wolf River Basins TMDL are given monthly average mass limits and, if the equivalent effluent concentration is less than or equal to 0.3 mg/L, six-month average mass limits are also included. The following equation shows the calculation of equivalent effluent concentration:

$$\begin{aligned} \text{TP Equivalent Effluent Concentration} &= \text{WLA} \div (\text{365 days/yr} * \text{Flow Rate} * \text{Conversion Factor}) \\ &= 31 \text{ lbs/yr} \div (\text{365 days/yr} * \text{0.060 MGD} * \text{8.34}) \\ &= 0.17 \text{ mg/L} \end{aligned}$$

Since this value is less than 0.3 mg/L, both a six-month average mass limit and a monthly average mass limit are applicable for total phosphorus. The monthly average limit is set equal to three times the six-month average limit.

$$\begin{aligned} \text{TP 6-Month Average Permit Limit} &= \text{WLA} \div \text{365 days/yr} * \text{multiplier} \\ &= (31 \text{ lbs/yr} \div \text{365 days/yr}) * \text{1.30} \\ &= 0.11 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{TP Monthly Average Permit Limit} &= \text{TP 6-Month Average Permit Limit} * \text{3} \\ &= 0.11 \text{ lbs/day} * \text{3} \\ &= 0.33 \text{ lbs/day} \end{aligned}$$

The multiplier used in the six-month average calculation was determined according to the implementation guidance. A coefficient of variation was calculated, based on phosphorus mass monitoring data, to be 1.0. This is the standard deviation divided by the mean of mass data. However, it is believed that the optimization of the wastewater treatment system to achieve the WLA-derived permit limits will reduce effluent variability. Thus, the maximum anticipated coefficient of variation expected by the facility is 0.6. This value, along with monitoring frequency, is used to select the multiplier. The current permit specifies phosphorus monitoring as weekly; if a different monitoring frequency is used, the stated limits should be

reevaluated.

Six-month average and monthly average mass effluent limits are recommended for this discharge. The limits are equivalent to a concentration of 0.22 mg/L and 0.66 mg/L, respectively, at the maximum annual average flow of 0.060 MGD.

The UFW TMDL establishes TP wasteload allocations to reduce the loading in the entire watershed including WLAs to meet water quality standards for tributaries to the Upper Fox and Wolf River. Therefore, WLA-based WQBELs are protective of immediate receiving waters and TP WQBELs derived according to s. NR 217.13, Wis. Adm. Code are not required.

Since wasteload allocations are expressed as annual loads (lbs/yr), permits with TMDL-derived monthly average permit limits should require the permittee to calculate and report rolling 12-month sums of total monthly loads for TP. Rolling 12-month sums can be compared directly to the annual wasteload allocation.

Effluent Data

The following table lists the statistics for effluent phosphorus levels from 03/21/2018 – 12/27/2022. The mass discharge was calculated using the flow rate reported on the same day that the concentration was measured.

Total Phosphorus Statistics		
	Concentration (mg/L)	Mass Discharge (lbs/day)
1-day P ₉₉	10	4.3
4-day P ₉₉	6.5	2.4
30-day P ₉₉	4.5	1.3
Mean	3.5	0.87
Std	2.0	0.88
Sample Size	79	79
Range	0.58 – 10	0.043 – 6.4

Multi-Discharge Variance Interim Limit

With the permit application, Dale has applied for the phosphorus multi-discharger variance (MDV). Conditions of the phosphorus MDV require the facility to comply with an interim phosphorus limit in lieu of meeting the final WQBEL. A review of effluent phosphorus data indicates that Dale will be unable to comply with the 0.8 mg/L phosphorus limits required under s. 283.16 (6) (a) 1., Wis. Stats. Therefore, the recommended interim limit, pursuant to s. 283.16 (6) (am), Wis. Stats., is 1.0 mg/L as a monthly average. A compliance schedule may be appropriate to meet this interim limit but compliance with 1.0 mg/L shall be no later than the end of the reissued permit.

The effluent data indicates that 4-day P₉₉ value of **6.5 mg/L is a level currently achievable (LCA)** for the discharge. A limit of 6.5 mg/L as a monthly average should not be exceeded during the compliance schedule.

PART 5 – TOTAL SUSPENDED SOLIDS

Total Suspended Solids (TSS) effluent limits in lbs/day are calculated as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs*

Attachment #1

(April 2020). This WLA is found in Appendix I of the *Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Upper Fox and Wolf Basins (UFW TMDL)* report dated February 2020 are expressed as maximum annual loads (lbs/year). The WLA for Dale is 3,214 lbs/year.

Revisions to chs. NR 106 and 205, Wis. Adm. Code align Wisconsin water quality-based effluent limits with 40 CFR 122.45(d), which requires WPDES permits to contain the following concentration limits, whenever practicable and necessary to protect water quality:

- Weekly average and monthly average limitations for continuous discharges subject to ch. NR 210.
- Daily maximum and monthly average limitations for all other discharges.

Dale is a municipal treatment facility and is therefore subject to weekly average and monthly average TSS limits derived from TSS annual WLAs.

$$\begin{aligned} \text{TSS Weekly Average Permit Limit} &= \text{WLA} \div 365 \text{ days/yr} * \text{multiplier} \\ &= (3214 \text{ lbs/yr} \div 365 \text{ days/yr}) * 3.11 \\ &= 27 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{TSS Monthly Average Permit Limit} &= \text{WLA} \div 365 \text{ days/yr} * \text{multiplier} \\ &= (3214 \text{ lbs/yr} \div 365 \text{ days/yr}) * 1.90 \\ &= 17 \text{ lbs/day} \end{aligned}$$

The multiplier used in the weekly average and monthly average calculation was determined according to implementation guidance. A coefficient of variation was calculated, based on TSS mass monitoring data, to be 1.27. This is the standard deviation divided by the mean of mass data. However, it is believed that the optimization of the wastewater treatment system to achieve the WLA-derived permit limits will reduce effluent variability. Thus, the maximum anticipated coefficient of variation expected by the facility is 0.6. This value, along with monitoring frequency, is used to select the multiplier. The current permit specifies TSS monitoring as 3/week; if a different monitoring frequency is used, the stated limits should be reevaluated.

Weekly average and monthly average mass effluent limits are recommended for this discharge. The limits are equivalent to a concentration of 55 mg/L and 33 mg/L at the facility design flow of 0.060 MGD.

Since wasteload allocations are expressed as annual loads (lbs/yr), permits with TMDL-derived monthly average permit limits should require the permittee to calculate and report rolling 12-month sums of total monthly loads for TSS. Rolling 12-month sums can be compared directly to the annual wasteload allocation.

Effluent Data

The following table lists the statistics for effluent TSS levels from 11/10/2017 – 12/19/2022. The mass discharge was calculated using the flow rate reported on the same day that the concentration was measured.

Total Suspended Solids Statistics		
	Concentration (mg/L)	Mass Discharge (lbs/day)
1-day P ₉₉	35	11

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4-day P ₉₉	19	6.0
30-day P ₉₉	9.7	2.8
Mean	5.7	2.0
Std	7.8	2.6
Sample Size	248	248
Range	0 – 52	0 – 17

The effluent data shows that Dale can currently meet the TMDL-based mass limits, so these limits are recommended in the reissued permit to be effective immediately.

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 86° F (or 86 °F) limit applies because the hydrologic classification is not listed as wetland in ch. NR 104, Wis. Adm. Code.

Section NR 106.59(2)(b), Wis. Adm. Code, allows the use of temperature effluent data, on a case-by-case basis, from at least two other POTWs within a 100-mile radius that utilize similar wastewater treatment technology and have a similar ratio of domestic to industrial waste stream composition, or representative data of the POTW. Bowler WWTF is a similar facility which had a maximum effluent temperature measurement of 82 deg F in the past ten years. Wittenberg WWTF is another similar facility which had a maximum effluent temperature measurement of 67 deg F in the past twelve years. Using data from these two facilities, there is not reasonable potential for Dale to exceed the daily maximum temperature limit of 86° F. **Monitoring for one year is recommended in the reissued permit to determine reasonable potential for the next reissuance.**

PART 7 – WHOLE EFFLUENT TOXICITY (WET)

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

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC₅₀ (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.

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- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC₂₅ (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The IWC for chronic WET was 38% during the last permit term. The IWC of **58%** shown in the WET Checklist summary below was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

$$IWC \text{ (as \%)} = Q_e \div \{(1 - f) Q_e + Q_s\} \times 100$$

Where:

Q_e = annual average flow = 0.060 MGD = 0.093 cfs

f = fraction of the Q_e withdrawn from the receiving water = 0

Q_s = ¼ of the 7-Q₁₀ = 0.27 cfs ÷ 4 = 0.0675 cfs

*The IWC increased from 38% to 58%. The previous memo estimated the 7-Q₁₀ of the Rat River based on low flows from a different creek in the watershed north of Dale. The 7-Q₁₀ that is estimated for this WQBEL memo is estimated from the PRESTO-Lite model which is a more accurate estimation.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.
- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the receiving water location, upstream and out of the influence of the mixing zone and any other known discharge. The specific receiving water location must be specified in the WPDES permit.
- Shown below is a tabulation of all available WET data for Outfall 001. Efforts are made to ensure that decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08(3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations. Significant changes were made to WET test methods in 2004 and these changes were assumed to be fully implemented by certified labs by no later than June 2005. Data before July 1, 2005 has been excluded from this evaluation.

WET Data History

Date Test Initiated	Acute Results LC ₅₀ %				Chronic Results IC ₂₅ %					Footnotes or Comments
	<i>C. dubia</i>	Fathead minnow	Pass or Fail?	Used in RP?	<i>C. dubia</i>	Fathead Minnow	Algae (IC ₅₀)	Pass or Fail?	Use in RP?	
09/16/2008					>100	>100		Pass	No	1
09/16/2010					>100	>100		Pass	No	1
05/13/2014	>100	75	Fail	Yes	44.1	73	86.4	Pass	Yes	
06/18/2018	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
11/13/2018	>100	>100	Pass	Yes	>100	>100		Pass	Yes	

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06/11/2019	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
03/31/2020	>100	51.8	Fail	Yes	65.7	41.6		Pass	Yes	
05/20/2020	>100	>100	Pass	Yes						
06/17/2020	>100	>100	Pass	Yes						
01/25/2022	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
10/25/2022	>100	>100	Pass	Yes	86.3	>100		Pass	Yes	

Footnotes:

1. *Tests done by S-F Analytical, July 2008 – March 2011.* The DNR has reason to believe that WET tests completed by SF Analytical Labs from July 2008 through March 31, 2011 were not performed using proper test methods. Therefore, WET data from this lab during this period has been disqualified and was not included in the analysis.
- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. **WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.**

$$\text{Acute Reasonable Potential} = [(TUa \text{ effluent}) (B)(AMZ)]$$

$$\text{Chronic Reasonable Potential} = [(TUc \text{ effluent}) (B)(IWC)]$$

According to s. NR 106.08(6)(d), Wis. Adm. Code, TUa and TUc effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC₅₀, IC₂₅ or IC₅₀ ≥ 100%).

$$\text{Acute Reasonable Potential} = [(TUa \text{ effluent}) (B)]$$

Acute WET Limit Parameters

TUa (maximum) 100/LC ₅₀	B (multiplication factor from s. NR 106.08(5)(c), Wis. Adm. Code, Table 4)
100/51.8 = 1.93	3.8 Based on 2 detects

$$[(TUa \text{ effluent}) (B)(AMZ)] = 7.34 > 1.0$$

$$\text{Chronic Reasonable Potential} = [(TUc \text{ effluent}) (B)(IWC)]$$

Chronic WET Limit Parameters

TUc (maximum) 100/IC ₂₅	B (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	IWC
100/41.6 = 2.4	3.0 Based on 3 detects	58%

$$[(TUc \text{ effluent}) (B)(IWC)] = 4.18 > 1.0$$

Attachment #1

Therefore, reasonable potential is shown for acute and chronic WET limits using the procedures in s. NR 106.08(6) and representative data from 05/13/2014 – 01/25/2022.

Expression of WET limits

Acute WET limit = 1.0 TU_a (daily maximum)

Chronic WET limit = [100/IWC] TU_c = 1.7 TU_c expressed as a monthly average

The WET checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The checklist steps the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET checklist analysis completed for this permittee is shown in the table below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET checklist, see Chapter 1.3 of the WET Guidance Document: <https://dnr.wisconsin.gov/topic/Wastewater/WET.html>.

WET Checklist Summary

	Acute	Chronic
AMZ/IWC	Not Applicable. 0 Points	IWC = 58%. 10 Points
Historical Data	9 tests used to calculate RP. 2 tests failed. 0 Points	5 tests used to calculate RP. No tests failed when compared to the IWC (38%) at the time of testing. 0 Points
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. 0 Points	Same as Acute. 0 Points
Receiving Water Classification	Variance water, less than 4 miles to a warmwater sport fish classification. 5 Points	Same as Acute. 5 Points
Chemical-Specific Data	Reasonable potential for limits for no substances based on ATC; Ammonia nitrogen limit carried over from the current permit. Chromium, copper, nickel, zinc, chloride and ammonia detected. Additional Compounds of Concern: None. 3 Points	Reasonable potential for limits for chloride and ammonia based on CTC (6 pts); Chromium, copper, nickel, and zinc detected (3 pts). Additional Compounds of Concern: None. 9 Points
Additives	0 Biocides and 0 Water Quality Conditioners added. Permittee has proper P chemical SOPs in place: Not used. 0 Points	All additives not used. 0 Points
Discharge Category	0 Industrial Contributors.	Same as Acute.

Attachment #1

	Acute	Chronic
	0 Points	0 Points
Wastewater Treatment	Secondary treatment.	Same as Acute.
	0 Points	0 Points
Downstream Impacts	No impacts known.	Same as Acute.
	0 Points	0 Points
Total Checklist Points:	8 Points	24 Points
Recommended Monitoring Frequency (from Checklist):	1x yearly	1x yearly
Limit Required?	Yes Limit = 1.0 TU _a	Yes Limit = 1.7 TU _c
TRE Recommended? (from Checklist)	Yes	No

- After consideration of the guidance provided in the Department's WET Program Guidance Document (2022) and other information described above 1x yearly acute and chronic WET tests are recommended in the reissued permit. Tests should be done in rotating quarters to collect seasonal information about this discharge. WET testing should continue after the permit expiration date (until the permit is reissued).
- According to the requirements specified in s. NR 106.08, Wis. Adm. Code, acute and chronic WET limits are required. The acute WET limit shall be expressed as 1.0 TU_a as a daily maximum in the effluent limits table of the permit. The chronic WET limit shall be expressed as 1.7 TU_c as a monthly average in the effluent limits table of the permit.
- A minimum of annual acute and chronic monitoring is required because acute and chronic WET limits are required. Federal regulations in 40 CFR Part 122.44(i) require that monitoring occur at least once per year when a limit is present.

Attachment #2
Ammonia Limits Calculations

2009 Calculations

Weekly Average & Monthly Average Limits based on Chronic Toxicity Criteria (CTC): Weekly average and monthly average limits for Ammonia Nitrogen are based on chronic toxicity criteria. The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified for Limited Aquatic Life is calculated by the following equation.

$$CTC = E \times \{ [0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})] \} \times C$$

Where:

pH = the pH (su) of the receiving water,

E = 1.0,

C = 8.09 x 10^{(0.028 x (25 - T))}

T = the temperature of the receiving (°C)

The 4-Day criterion is simply equal to the 30-Day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q₁₀ (4-Q₃, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q₅ (estimated as 85% of the 7-Q₂ if the 30-Q₅ is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature. 100% of the flow is used if the Temperature ≥ 16 °C. Only 25% of the flow is used if the Temperature < 11 °C. And 50% of the flow is used if the Temperature ≥ 11 °C but < 16 °C. But because there is no background flow, most of this is a moot point – limits will equal respective criteria.

Since minimal ambient data is available, the “default” basin assumed values are used for Temperature and pH, while the background ammonia concentration is of no significance with the lack of background flow. The assumed conditions are shown in the table below, with the resulting criteria and effluent limitations.

NH ₃ -N limitations based on CTC For Limited Aquatic Life waters		Summer	Winter
		May – Oct.	Nov. – April
Background Information:	7-Q ₁₀ (cfs)	0	0
	7-Q ₂ (cfs)	0	0
	Ammonia (mg/L)	--	--
	Temperature (°C)	23	7
	pH (su)	8.21	7.97
	% of Flow used	100	25
	Reference Weekly Flow (cfs)	0	0
	Reference Monthly Flow (cfs)	0	0
Criteria mg/L:	4-Day Chronic	16.68	67.37
	30-Day Chronic	6.67	26.95
Effluent Limits mg/L:	Weekly Average	17	67
	Monthly Average	6.7	27

Section NR 106.33(2) specifies that the department may not include limits for Ammonia Nitrogen in WPDES permits for municipal WWTF's treating primarily domestic wastewater, when the calculated limits are equal to or greater than 20 mg/L from May through October, and equal to or greater than 40 mg/L from November through April. Consequently, no weekly average limit would be recommended for the winter months at the Dale SD #1 WWTF.

Note that the limits for the summer months are slightly more restrictive than the limits included in the current permit for planning purposes. This is due to the fact that the assumed temperature is slightly greater, at 23° C instead of 22° C. Also note that if the effluent pH is substituted for the assumed ambient pH, the effluent limitations would be considerably more stringent (numerically lower).

Attachment #2

However, these limits may not be adequately protective of the downstream reaches of the tributary to which the Dale SD #1 WWTF discharges. This was noted when limits for the current permit were calculated. The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as a Limited Forage Fishery is calculated by the following equation.

$$CTC = E \times \left\{ \left[0.0676 \div (1 + 10^{(7.688 - pH)}) \right] + \left[2.912 \div (1 + 10^{(pH - 7.688)}) \right] \right\} \times C$$

Where:

pH = the pH (su) of the receiving water.

E = 1.0,

C = the minimum of 3.09 or $3.73 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or

C = $3.73 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and

T = the temperature (°C) of the receiving water – (Early Life Stages Present), or

T = the maximum of the actual temperature (°C) and 7 – (Early Life Stages Absent)

The rules provide a mechanism for less stringent weekly average and monthly average effluent limitations when early life stages (ELS) of critical organisms are absent from the receiving water. This applies only when the water temperature is less than 14.5 °C, during the winter and spring months. In a Limited Forage Fishery, the critical species is Fathead Minnows which typically begins spawning in April. So ideally “ELS Absent” criteria apply from October through March, and “ELS Present” criteria apply from April through September. But significantly greater receiving water flow can be expected in April, so winter and summer can be grouped as November – April and May – October, respectively, while providing an adequate level of protection, yet simplifying the permit to correspond to periods when the cutoff levels of s. NR 106.33(2) apply.

Attachment #2

Using the same assumed background conditions as above, the following CTC and effluent limitations are calculated.

NH ₃ -N limitations based on CTC For Limited Forage Fishery waters		Summer May – Oct.	Winter Nov. – April
Background Information:	7-Q ₁₀ (cfs)	0	0
	7-Q ₂ (cfs)	0	0
	Ammonia (mg/L)	--	--
	Temperature (°C)	23	7
	pH (su)	8.21	7.97
	% of Flow used	100	25
	Reference Weekly Flow (cfs)	0	0
	Reference Monthly Flow (cfs)	0	0
Criteria mg/L:	4-Day Chronic		
	ELS Present	5.60	8.06
	ELS Absent	7.69	31.06
	30-Day Chronic		
	ELS Present	2.24	3.22
	ELS Absent	3.08	12.42
Effluent Limits mg/L:	Weekly Average	5.6	31
	Monthly Average	2.2	12

But the department may account for natural in-stream decay of ammonia. That decay would be limited to summer when the stream temperature exceeds 10 °C. Below that temperature, there is minimal decay in most situations. Ammonia decay can be estimated using the following equation.

$$NH_3-N_T = NH_3-N_0 \times e^{-K \times T}$$

Where: NH₃-N_T = Ammonia Nitrogen concentration at time T,
 NH₃-N₀ = Ammonia Nitrogen concentration at time Zero (at the outfall),
 K = decay coefficient, assume K = 0.315 at 23 °C, and
 T = travel time in days

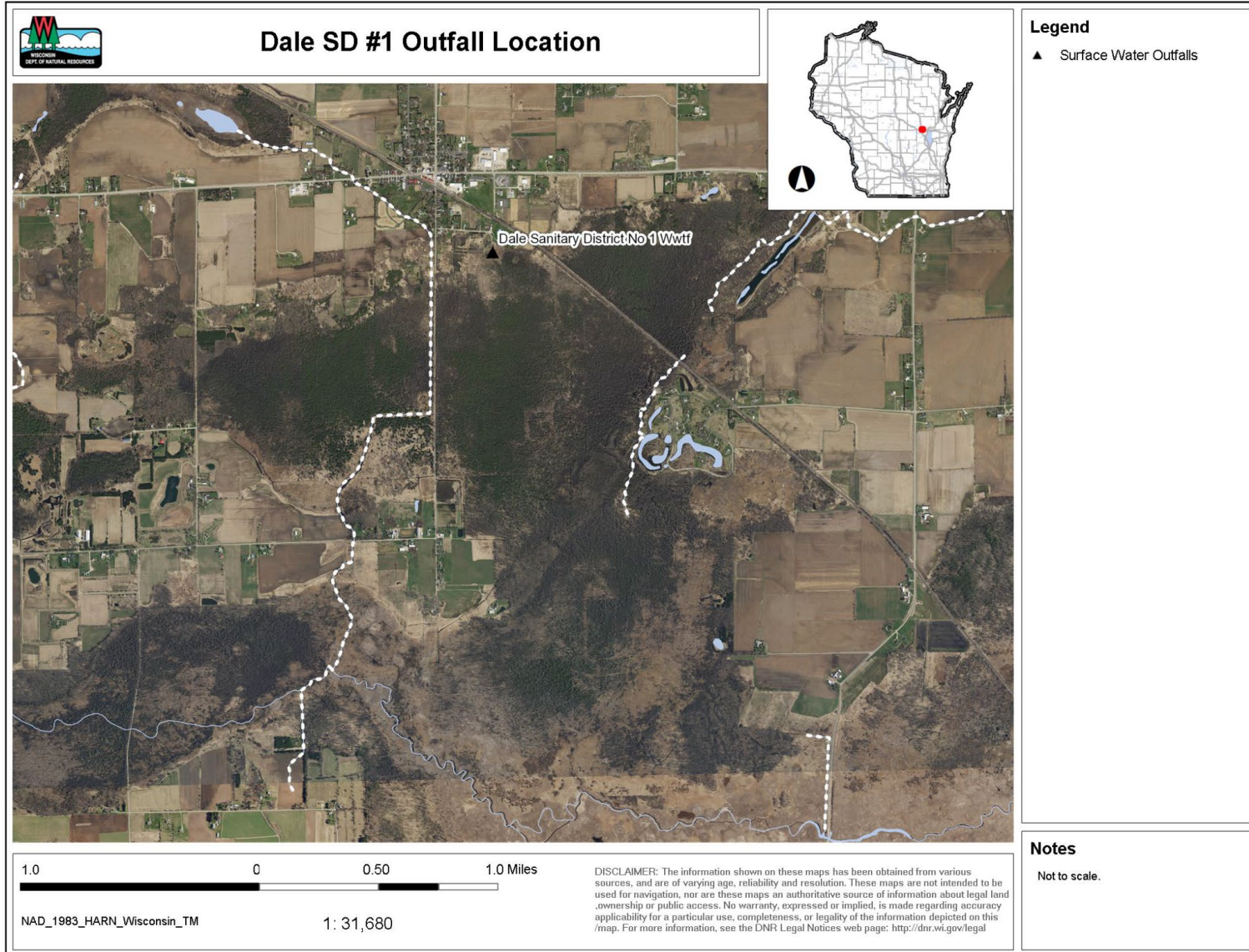
There is no known information on the rate of travel in the tributary from the Dale SD #1 WWTF, so a “speed” of five miles per day will be assumed. As noted earlier, the classification changes approximately 1.5 miles from the outfall. So the value of T in the equation above will be assumed to equal 0.3 days. This then yields a combine factor of $e^{-K \times T} = 0.91$ for the Dale SD #1 WWTF, meaning that 91% of the ammonia discharged is remaining by time the effluent reaches the point at which the classification changes. And using the equation above, setting NH₃-N_T equal to the effluent limits above, yields the effluent limits needed at the outfall to assure protection of the Limited Forage Fishery downstream. So a weekly average limit of 6.2 and a monthly average limit of 2.4 mg/L are recommended.

This exercise could be repeated for the Rat River another one mile downstream. But at the confluence of the tributary from Dale, the Rat River has a fairly extensive drainage area, so there is very likely to be some background flow. Even though low-flow data is not available from USGS for this location, it is believed that the limits above protective of the Limited Forage Fishery (with no background flow) will be adequately protective of the diverse fishery in the Rat River.

2014 Calculations

Default ambient temperature data are available in NR 102 based on the 2010 thermal standards. Although no default conditions are listed for Limited Aquatic Life waters, seasonal default temperatures for Limited Forage Fish waters are used to calculate limits at Dale, especially since the receiving water classification changes to Limited Forage Fish downstream of the Dale outfall. In fact, the weekly and monthly average ammonia limits for Dale were calculated based on criteria for the downstream Limited Forage Fish classification, with a seasonal decay factor of 0.91 applied during warmer water conditions in the months of May – October (no factor is applied for colder months). Since ammonia is more toxic in higher pH and higher temperature waters, the highest seasonal ambient default temperatures for Limited Forage Fish waters from Table 2 in ch. NR 102 are used for the updated ammonia limits along with new default pH values. The information used to update Dale's weekly and monthly ammonia limits are summarized in the following table:

NH₃-N limitations based on CTC For Limited Forage Fishery waters		Nov. – March	April	May – June	July – Sept.	Oct.
Ambient Conditions	Temperature (°F)	46	50	64	69	55
	Temperature (°C)	7.8	10	17.8	20.6	12.8
	pH (su)	7.90	8.09	8.09	8.08	8.06
Criteria in mg/L:	4-Day Chronic					
	ELS Present		6.76	6.76	6.86	
	ELS Absent	32.53				17.94
	30-Day Chronic					
	ELS Present		2.70	2.70	2.74	
ELS Absent	13.01				7.18	
Effluent Limits in mg/L after applying seasonal decay factor:	Weekly Average	33	6.8	7.4	7.5	20
	Monthly Average	13	2.7	3.0	3.0	7.9



Facility Specific Chloride Variance Data Sheet

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

Section I: General Information

A. Name of Permittee: Dale Sanitary District No. 1
 B. Facility Name: Dale Sanitary District No. 1 Wastewater Treatment Facility (WWTF)
 C. Submitted by: Wisconsin Department of Natural Resources
 D. State: Wisconsin Substance: Chloride Date completed: February 13, 2024
 E. Permit #: WI-0030830-08-0 WQSTS #: (EPA USE ONLY)
 F. Duration of Variance Start Date: October 1, 2024 End Date: September 30, 2029
 G. Date of Variance Application: March 15, 2022
 H. Is this permit a: First time submittal for variance
 Renewal of a previous submittal for variance (Complete Section IX)

I. Description of proposed variance:
 The Dale Sanitary District No. 1 Wastewater Treatment Facility (WWTF) discharges to an unnamed tributary to the Rat River in Outagamie County. The Dale Sanitary District No. 1 seeks a variance to the water quality standards for chloride for its WWTF.

The Department concludes that the Dale Sanitary District No. 1 has met the requirements of s. NR 106.83(2), Wisconsin Administrative Code, and s. 283.15, Wisconsin Statutes. The Department further concludes that requiring the Dale Sanitary District No. 1 to meet the water quality standard for chloride would result in substantial and widespread adverse social and economic impacts in its service area. Furthermore, the Department concludes that there is no feasible pollutant control technology that can be applied to achieve compliance with the chloride water quality-based effluent limit (WQBEL). The Department therefore proposes that this permit include a discharger-specific variance to the chloride water quality standard for aquatic life.

The proposed variance for chloride, from the chronic WQBEL of 400 mg/L, to an interim limit of 490 mg/L, is expressed as a weekly average limit. The Department concludes that the interim limit reflects the greatest pollutant reduction achievable by the permittee with the pollutant control technologies currently applied in the permittee’s WWTF. The permit requires the permittee to implement Source Reduction Measures (SRMs). The Department considers the highest attainable condition (HAC) of the receiving water to be the interim limit – applied for the term of the variance – combined with the permittee’s implementation of SRMs. The term of the proposed variance is five years, concurrent with the term of the proposed WPDES permit. The underlying designated uses and criteria of Wisconsin’s chloride water quality standards (WQS) will be retained, and all other applicable WQS will remain in effect with adoption of the proposed variance.

The previous permit for this facility contained a chloride variance, including an interim chloride limit, chloride target value and requirements to implement source reduction measures, in accordance with s. NR 106.83(2), Wis. Adm. Code.

Citation: An interim chloride effluent limitation under s. NR 106.83(2), Wis. Adm. Code, represents a variance to water quality standards authorized by s. 283.15, Wis. Stats., and 40 CFR §131.14.

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

Name	Email	Phone	Contribution
Sarah Donoughe	Sarah.Donoughe@Wisconsin.gov	(920) 366-6076	Permit Drafter
Barti Oumarou	Barti.Oumarou@Wisconsin.gov	(920) 424-4013	Compliance Engineer
Nicole Krueger	Nicole.Krueger@Wisconsin.gov	(414) 897-5750	Parts II D-H and J

Section II: Criteria and Variance Information	
A. Water Quality Standard from which variance is sought:	395 mg/L chloride (based on chronic toxicity criterion)
B. List other criteria likely to be affected by variance:	None
C. Source of Substance:	The following have been identified as the major sources of chloride discharged to the Dale WWTF: 1) Wastewater from the Town of Dale's Maintenance Garage where trucks used for roadway anti-icing and de-icing are washed; 2) Storm water that enters the sanitary sewer collection system through processes of infiltration and/or inflow (I&I) – especially after periods of roadway anti-icing and de-icing; and 3) Residential water softeners.
D. Ambient Substance Concentration:	<u>0 mg/L</u> <input type="checkbox"/> Measured <input checked="" type="checkbox"/> Estimated <input type="checkbox"/> Default <input type="checkbox"/> Unknown
E. If measured or estimated, what was the basis? Include citation.	The background stream flow is zero at the point of discharge, so the background concentration is estimated to be zero.
F. Average effluent discharge rate:	0.027 MGD (average flow form 10/01/2017 – 12/31/2022) Maximum effluent discharge rate: 0.22 MGD (07/19/2021)
G. Effluent Substance Concentration:	Average = 392 mg/L <input checked="" type="checkbox"/> Measured <input type="checkbox"/> Estimated 4-day P99 = 492 mg/L <input type="checkbox"/> Default <input type="checkbox"/> Unknown Maximum = 754 mg/L
If measured or estimated, what was the basis? Include Citation. Permit – required sampling from 10/01/2017 – 12/31/2022.	
I. Type of HAC:	<input type="checkbox"/> Type 1: HAC reflects waterbody/receiving water conditions <input type="checkbox"/> Type 2: HAC reflects achievable effluent conditions <input checked="" type="checkbox"/> Type 3: HAC reflects current effluent conditions
J. Statement of HAC:	The Department has determined the highest attainable condition of the receiving water is achieved through the application of the variance limit in the permit, combined with a permit requirement that the permittee implement its Chloride SRM plan. Thus, the HAC at commencement of this variance is 490 mg/L expressed as a weekly average, which reflects the greatest chloride reduction achievable with the current treatment processes, in conjunction with the implementation of the permittee's Chloride SRM plan. The current effluent condition is reflective of on-site optimization measures that have already occurred. This HAC determination is based on the economic feasibility of available compliance options for the Dale Sanitary District No. 1 WWTF at this time (see Economic Section below). The permittee may seek to renew this variance in the subsequent reissuance of this permit; the Department will reevaluate the HAC in its review of such a request. A subsequent HAC cannot be defined as less stringent than this HAC.
K. Variance Limit:	490 mg/L
L. Level currently achievable (LCA):	490 mg/L
M. What data were used to calculate the LCA, and how was the LCA derived? (Immediate compliance with LCA is required.)	This is the 4-day P99 from 10/01/2017 – 12/31/2022.
N. Explain the basis used to determine the variance limit (which must be \leq LCA). Include citation.	Chapter NR 106, Subchapter VII, Wis. Adm. Code, allows for a variance; the imposition of a less restrictive interim limit; a compliance schedule that stresses source reduction and public education; and allowance for a target value or limit to be a goal for reduction. The proposed variance limit of 490 mg/L = 4-day P99. The limit is established in accordance with s. 283.15 (5), Wis. Stats. and ch. NR 106 Subchapter II, Wis. Adm. Code.
O. Select all factors applicable as the basis for the variance provided under 40 CFR 131.10(g). Summarize justification below:	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input checked="" type="checkbox"/> 6 The use of a reverse osmosis system was evaluated. The cost of the system was estimated to an average cost per household that would result in a MHI of 3.7%. Without a variance, meeting the water quality standard of 400 mg/L would result in substantial and widespread economic and social impacts.

Section III: Location Information	
A. Counties in which water quality is potentially impacted: <u>Outagamie and Winnebago</u>	
B. Receiving waterbody at discharge point: <u>Unnamed tributary to the Rat River (WBIC No. 252200)</u>	
C. Flows into which stream/river? <u>Rat River</u> How many miles downstream? <u>~3.5 mi</u>	
D. Coordinates of discharge point (UTM or Lat/Long): <u>44° 15' 50" N Latitude, 88° 40' 44" W Longitude</u>	
E. What is the distance from the point of discharge to the point downstream where the concentration of the substance falls to less than or equal to the chronic criterion of the substance for aquatic life protection? Approximately 3 miles downstream, at the Rat River.	
F. Provide the equation used to calculate that distance (<i>Include definitions of all variables, identify the values used for the clarification, and include citation</i>): (interim limit in mg/L x effluent design flow in cfs) + (background concentration in mg/L x background stream flow in cfs) / (effluent design flow in cfs + background stream flow in cfs) = ≤ 395 mg/L. The background concentration is assumed to be 0 mg/L. In order for the instream concentration to be less than 395 mg/L, the background stream flow needs to be greater than 0.025 cfs. The Rat River, approximately 3 miles downstream of Outfall 001, has a 7Q10 of 0.27 cfs which provides enough dilution for the instream concentration to be less than 395 mg/L.	
G. What are the designated uses associated with the direct receiving waterbody, and the designated uses for any downstream waterbodies until the water quality standard is met? The receiving water and downstream waters are designated for recreation and fish and aquatic life uses. At the point of discharge the receiving water's fish and aquatic life classification is Limited Aquatic Life, and about a half-mile downstream that classification changes to Limited Forage Fish. The Rat River (downstream) has a Warm Water Sport Fish classification.	
H. Identify all other variance permittees for the same substance which discharge to the same stream, river, or waterbody in a location where the effects of the combined variances would have an additive effect on the waterbody: There are no other permittees that discharge to this stream – or in the Rat River watershed – which have chloride variances (see attached map Current Outfall Variances April 2024).	
I. Please attach a map, photographs, or a simple schematic showing the location of the discharge point as well as all variances for the substance currently draining to this waterbody on a separate sheet See attached map (Current Outfall Variances April 2024).	
J. Is the receiving waterbody on the CWA 303(d) list? If yes, please list <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown the impairments below. The receiving water is not on the CWA 303(d) list (Impaired Waters List), but the Rat River (downstream) is included on that list for low dissolved oxygen impairment caused by excessive levels of phosphorus.	
K. Please list any contributors to the POTW in the following categories: <i>May need to contact facility for this information</i>	
Food processors (cheese, vegetables, meat, pickles, soy sauce, etc.)	None
Metal Plating/Metal Finishing	None
Car Washes	None
Municipal Maintenance Sheds (salt storage, truck washing, etc.)	Town Maintenance Facility (truck washing)
Laundromats	None

Other presumed commercial or industrial chloride contributors to the POTW	None
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L. If the POTW does not have a DNR-approved pretreatment program, is a sewer use ordinance enacted to address the chloride contributions from the industrial and commercial users? If so, please describe.
 In August of 2019, Dale Sanitary District adopted a Sewer Use Ordinance that requires residential customers to have their water softener tuned-up once every two years at the customer's expense. Each residential customer shall provide documentation to the Dale Sanitary District that the water softener has been inspected and tuned-up by a qualified water softener servicing firm to ensure proper control settings and adjustments. The tune-up is to include testing the water before and after softening, checking salt levels, breaking up salt bridge if necessary, cycling the system with resin treatment, and general testing of the unit as a whole. In the event that the District needs to arrange for a customer's water softener tune-up, penalties shall apply. -- For all new construction, and for all softener replacements, all softeners installed shall be Demand Based Softeners. No Time-Based Softeners are allowed.

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

A. Are there any industrial users contributing chloride to the POTW? If so, please list.
 The Dale Sanitary District No. 1 is too small to have local pretreatment authority (Design flow < 5 MGD). All users in the Sanitary District are billed as residential. There are no significant commercial, institutional, or industrial sources. All influent waste is domestic strength.

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

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

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

Section V: Public Notice

A. Has a public notice been given for this proposed variance? Yes No
B. If yes, was a public hearing held as well? Yes No N/A
C. What type of notice was given?
 Notice of variance included in notice for permit Separate notice of variance
D. Date of public notice: TBD (approx. May 2024) **Date of hearing:** July 9, 2024
E. Were comments received from the public in regards to this notice or hearing? (If yes, see notice of final determination) Yes No

Section VI: Human Health

A. Is the receiving water designated as a Public Water Supply? Yes No
B. Applicable criteria affected by variance: No human health criteria for chloride.
C. Identify any expected impacts that the variance may have upon human health, and include any citations:
 None

Section VII: Aquatic Life and Environmental Impact

A. Aquatic life use designation of receiving water: The unnamed tributary is limited aquatic life. The Rat River has a warmwater sport fish classification.
B. Applicable criteria affected by variance: Chronic toxicity criterion for chloride is 395 mg/L per ch. NR 105, Wis. Adm. Code.

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

Due to the zero flow of the stream, the instream concentration would be 490 mg/L which exceeds the genus mean chronic value for one of the 13 species used to determine the criteria (Water flea - Ceriodaphnia dubia; 417 mg/L).

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

There are no Endangered or Threatened species known that would affect the water quality criterion, as the chronic toxicity criterion for chloride is more stringent than all genus mean chronic values for organisms with chloride toxicity data. As a result, no endangered species with data would need more protection than already provided by the existing criterion.

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

Section VIII: Economic Impact and Feasibility

A. Describe the permittee’s current pollutant control technology in the treatment process:

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

Upgrading Dale Sanitary District’s treatment plant to include a reverse osmosis (RO) treatment system for removing chloride from the wastewater effluent would allow the permittee to comply with the chloride WQBELs.

Upgrading to a public water supply with a centralized lime softening treatment system would eliminate the need for residential water softeners and potentially eliminate the major source of chlorides to the wastewater treatment facility (water softener regeneration brine).

C. How long would it take to implement these changes?

The cost of providing reverse osmosis at the wastewater treatment facility was evaluated and determined to be prohibitively expensive.

D. Estimate the capital cost (Citation): \$67,500 for RO treatment (source: WDNR Form 3400-193 Chloride Variance Application from permittee)

E. Estimate additional O & M cost (Citation): \$21,900/yr for RO treatment (source: WDNR Form 3400-193 Chloride Variance Application from permittee)

F. Estimate the impact of treatment on the effluent substance concentration, and include any citations: Treatment for chlorides at the plant without an RO system would have little impact.

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

End-of-pipe RO wastewater treatment technology for chloride produces concentrated brine that can be as much or more of an environmental liability than the untreated effluent. Since the concentrated brine cannot be further treated, the only recourse for the disposal of the brine is transfer to another community, which is often not feasible. Appropriate chloride source reduction activities are preferable environmentally to effluent end-of-pipe treatment in most cases, since the end product of treatment (production of a concentrated brine) does not remove the load of chloride from the environment.

There would be some impacts based on disposal of brine from RO. These include air pollution impacts from trucking brine and increased chloride impacts at the point where brine is discharged.

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

Reverse Osmosis (RO) treatment of the Dale SD No. 1 WWTF effluent to meet the WQBEL is technically feasible. However, it is not economically feasible. See WDNR variance application and screening tool for costs of reverse osmosis. Use of reverse osmosis was evaluated. The resulting total cost for sewer user rates was estimated to result in an average cost to households that would be 4.42% of the MHI. An increase of this

magnitude would cause substantial and widespread adverse social and economic impacts in the area where the discharge is located.

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

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

The cost of adding RO to the existing treatment plant's treatment train would cause substantial and widespread adverse social and economic impacts in the area where the discharge is located. Implementation of the SRMs in the proposed permit is preferable economically and environmentally to installing RO.

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

Alternative water supply sources were considered, since water softening was determined to be a primary source of chloride discharged by the WWTF. Presently, the Sanitary District's residents are all served by private wells. If municipal wells were installed to provide the water supply, it is likely that the Sanitary District's residents would continue to use water softeners, as the groundwater is naturally hard due to the predominance of dolomitic bedrock in the region. The City of Appleton draws its water from the relatively 'softer' Lake Winnebago; however, it is more than 10 miles from Dale Sanitary District No. 1 to the City of Appleton. In projects in which one municipality has supplied water to another, the Department has witnessed costs in the range of \$1 million per mile to install the pipeline between the two municipalities. Also, if the Dale Sanitary District No. 1 were to obtain its water from a different municipal water system, a water distribution system would also need to be installed to serve the Sanitary District. The costs associated with this option makes it cost prohibitive.

An alternative to the current practice of having the Sanitary District's residents provide their own water softening has been identified as a potential practice for consideration. Specifically, that alternative involves installing a municipal water system that includes lime softening to serve the Sanitary District. The technical and economic feasibility of that alternative is not known but is required to be investigated by Dale Sanitary District No. 1 as a condition of approval of this variance.

As noted above, the cost of RO treatment at the WWTF is prohibitive; the Department has considered other wastewater treatment options, including hauling or piping wastewater to another POTW, and the installation of individual septic systems. In this situation, piping wastewater to another POTW can realistically be considered only to the City of Appleton, more than 10 miles away. The cost of installing a wastewater pipeline over that distance would be comparable to that identified above for a water pipeline – and that cost would be prohibitive. Hauling wastewater from the Dale Sanitary District No. 1 to another POTW for treatment – approximately 32,000 gal/day – was deemed to be practicably unfeasible. Many of the residential lots in the Dale Sanitary District No. 1 are too small for siting a septic system drain field, making the option of switching to individual septic systems for wastewater treatment likewise unfeasible.

See guidance document Justification for Variances to Water Quality Standards for Chloride in Wisconsin (07/09/2010 DRAFT).

Section IX: Compliance with Water Quality Standards

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

Public outreach and education. Water softener tune-ups have been completed. Continuous reductions of Inflow and Infiltration.

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

The permit includes a requirement that the permittee shall implement the following source reduction measures:

1. Identify any new or additional sources of chloride to the sewer system.
2. Continue to educate homeowners on the impact of chloride from residential softeners, discuss options available for increasing softener salt efficiency, and request voluntary reductions.
3. Continue to educate licensed installers and self-installers of softeners on providing optional hard water that has not been softened for outside faucets for residences.
4. Conduct an inventory of water softeners in use in the District to collect information about the age, type of regeneration control unit and when each was last tuned-up.
5. Mandate through District ordinance a DIR and high salt efficiency standard for new residential softeners.
6. Mandate through District ordinance participation in an every-other-year residential softener tune-up program involving qualified servicing to ensure proper control settings and adjustments.
7. Implement aggressive inflow and infiltration reduction measures to reduce the amount of winter road deicers entering the sanitary sewer system to include performing manhole inspections, repairing manholes and installing internal chimney seals.
8. Work with the Town of Dale to investigate possible methodologies of reducing the discharge of chloride from the Town of Dale Maintenance Garage to the sanitary sewer system.
9. Evaluate the feasibility, in terms of both the technical and economic aspects, of installing a municipal water system with lime softening technology and submit these findings in the final chloride report.

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

A. Date of previous submittal: 6/13/17 Date of EPA Approval: 6/21/17
 B. Previous Permit #: WI-0030830-07-0 Previous WQSTS #: _____ (EPA USE ONLY)
 C. Effluent substance concentration: Avg. 392 mg/L Variance Limit: 510 mg/L
 D. Target Value(s): 460 mg/L Achieved? Yes No Partial

E. For renewals, list previous steps that were to be completed. Show whether these steps have been completed in compliance with the terms of the previous variance permit. Attach additional sheets if necessary.

Condition of Previous Variance	Compliance
Identify any new or additional sources of chloride to the sewer system.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Continue to educate homeowners on the impact of chloride from residential softeners, discuss options available for increasing softener salt efficiency, and request voluntary reductions.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Conduct an inventory of water softeners in use in the District to collect information about the age, type of regeneration control unit and when each was last tuned-up.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Mandate through District ordinance a DIR (Demand Initiated Regeneration) and high salt efficiency standard for new residential softeners.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Implement aggressive inflow and infiltration reduction measures to reduce the amount of winter road deicers entering the sanitary sewer system, to include performing manhole inspections, repairing manholes and installing internal chimney seals.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Work with the Town of Dale to investigate possible methodologies of reducing the discharge of chloride from the Town of Dale Maintenance Garage to the sanitary sewer.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Dale Sanitary District Chloride Source Reduction Plan Update March 2024

Planned Actions Included in 2022 Final Report	Comments
Identify any new or additional sources of chloride to the sewer system.	No new sources of chloride have been identified. Lack of rain affects dilution of the pollutant.
Continue to educate homeowners on the impact of chloride from residential softeners, discuss options available for increasing softener salt efficiency, and request voluntary reductions.	Educational materials regarding water softener recommendations are included in Dale Sanitary District Annual Reports.
Continue to educate licensed installers and self-installers of softeners on providing optional hard water that has not been softened for outside faucets for residences.	Plumbers are generally aware that it is not recommended to provide softened water for outside faucets, as it may be harmful to vegetation.
Conduct an inventory of water softeners in use in the District to collect information about the age, type of regeneration control unit and when each was last tuned-up.	Dale Sanitary District has conducted an inventory of water softeners in use in the District with less than 10% participation. The effort was ineffective.
Mandate through District ordinance a DIR (Demand Initiated Regeneration) and high salt efficiency standard for new residential softeners.	The Dale Sanitary District Ordinance requires demand initiated regeneration units for new residential softeners. Currently this type of unit is the only type available for purchase.
Mandate through District ordinance participation in an every-other-year residential softener tune-up program involving qualified servicing to ensure proper control settings and adjustments.	The current ordinance includes a provision requiring water softener tune-ups. The District feels these efforts are ineffective, as little can be tuned-up or adjusted on water softeners to make a significant difference.
Implement aggressive inflow and infiltration reduction measures to reduce the amount of winter road deicers entering the sanitary sewer system, to include performing manhole inspections, repairing manholes and installing internal chimney seals.	Dale Sanitary District cleans and televises approximately 20% of their system every year, and repairs defects when identified in order to reduce I/I. In addition, they continue to improve and seal manholes annually throughout their system with Flex-Seal.
Work with the Town of Dale to investigate possible methodologies of reducing the discharge of chloride from the Town of Dale Maintenance Garage to the sanitary sewer.	Attached is a letter from the Town of Dale confirming that all Town of Dale snow removal equipment is washed outside to ensure that no salt residue enters the sanitary sewer system.
Evaluate the feasibility, in terms of both the technical and economic aspects, of installing a municipal water system with lime softening technology, and submit these findings in the final chloride report.	The community of Dale is served by private water wells. Installation of a municipal water system with lime softening technology would require construction of a complete municipal water system including wells, a water distribution system, water storage, and treatment. The cost for these water improvements for the approximate 200 customers would be very significant. Large sewer utility rate increases were adopted to construct wastewater treatment plant improvements in 2020 needed to meet ammonia effluent limits. It would not be economically feasible to install a municipal water softening system using lime softening technology to lower wastewater chloride levels within the District.

Mail Complete Application to:

Wisconsin Department of Natural Resources
 Permits Section-WQ/3, Attn: Amanda Minks
 PO Box 7921
 Madison, WI 53707-7921

**Phosphorus Multi-Discharger
 Variance Application for Municipal
 Facilities - s. 283.16, Wis. Stats.**

Form 3200-150 (R 05/16)

Page 1 of 5

Notice: Pursuant to s. 283.16, Wis. Stats, an owner of an existing permitted wastewater treatment system may apply for a variance to a phosphorus water quality based effluent limits (WQBEL). Complete this form and submit to the Department of Natural Resources (DNR) to request coverage under the multi-discharger variance (MDV) for phosphorus. Personal information collected will be used for administrative purposes and may be provided to requestors to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.]

Facility and Permit Information				Facility Contact Information			
WPDES Permit No. WI- 0 0 3 0 8 3 0				Contact Name Doug Wunderlich			
Facility Name Dale Sanitary District No. 1				Title District President			
Facility Street Address W9611 Wheeler Road				Address W9879 STH 96			
City Dale	State WI	ZIP Code 54931		City Fremont	State WI	ZIP Code 54940	
Receiving Water Unnamed Trib to Rat River	County Outagamie			Phone No. (incl. area code) (920) 850-8508	Fax Number		
Source of Water Supply N/A Private Wells	Average Discharge Flow Rate 0.0322 MGD			Email Address wunderlichplumbingllc@gmail.com			

Variance Request Schedule **Check all that apply:**

- This variance is being requested at the time of application for permit reissuance pursuant to s. 283.16(4)(b)1, Wis. Stat.
- This variance is being requested within 60 days after the department reissues or modifies the permit to include a phosphorus WQBEL pursuant to s. 283.16(4)(b)2, Wis. Stat.
- This variance is being requested from a current WPDES Permit pursuant to 283.16(4)(b)3, Wis. Stat.

Date of Current Permit Issuance: _____

Note: WPDES permit must be issued prior to April 2014.

- Has the MDV been included in previously issued WPDES Permits?
 Yes
 How many permits has the MDV been approved for? _____
 No

Variance Requirements

- Has this point source discharge been authorized by a WPDES permit prior to December 1, 2010? Yes No

Note: If no, you are ineligible for the MDV in accordance with s. 283.16(4), Wis. Stat. STOP

- Has this point source relocated its outfall location since December 1, 2010? Yes No

- Is the point source located in an eligible MDV county as specified in Appendix H of the MDV Implementation Guidance? Yes No

Note: If no, you are ineligible for the MDV in accordance with s. 283.16(4), Wis. Stat.

8. Does this limit require a major facility upgrade in order to achieve compliance? Yes
 No

Justify:

Addition of a chemical feed system and tertiary filtration treatment facilities would be required to meet phosphorus limits.

Note: If no, you are ineligible for the MDV in accordance with s. 283.16(4), Wis. Stat. STOP. A major facility upgrade means that a facility needs to install new equipment and a new process such as installing filtration or equivalent technology.

9. Phosphorus Water Quality-Based Effluent Limitation from which variance is sought:

- Concentration-based WQBEL pursuant to s. NR 217.13, Wis. Adm. Code
 TMDL mass-based WQBEL pursuant to s. NR 217.16, Wis. Adm. Code

Check all months for which variance is requested:

- All months

- Jan Apr Jul Oct
 Feb May Aug Nov
 Mar Jun Sep Dec

10. Do you believe these limits could be achieved during the term of the permit? Yes
 No

11. Current effluent quality

Note: Use 30-day P99 if 11 or more representative effluent samples are present. Only include effluent data for those outfall(s) a variance is being requested for.

Outfall Number(s)	Conc. (mg/L)	Number of Samples Results Used	Sample Time Period Used	
1	4.0	33	03/01/2018	12/01/2020

12. Are applicable phosphorus limits currently effective in the WPDES permit more restrictive than 1 mg/L? Yes
 No

Facility Information (provide attachments as necessary)

13. What are the average phosphorus levels within your influent TP concentration? 6 mg/L

14. Has the treatment process at the facility been optimized to maximize its phosphorus removal capabilities?

- Yes

Completion date: _____

- No, but in process of completing
 No, not yet started

15. Has a facility planning or evaluation study for phosphorus been approved by the Department?

Yes

Approval date: 01/20/2021

No, but in process of completing

No, not yet started

16. Briefly describe the technology that would need to be added to comply with phosphorus limits in your permit:

Chemical feed system and tertiary treatment units to filter out phosphorus, such as disk filters, upflow sand filter or membrane filter system.

Attach any new or additional information that you would like to provide the Department regarding optimization measures and/or compliance alternatives planning efforts.

Projected Compliance Costs

17. What is the projected net present value cost for complying with the phosphorus WQBELs? **\$ 1,855,728**

Source of cost projection:

Preliminary Compliance Alternatives Plan, December 2020 and Net Present Value Calculator

Note: If a facility uses projected compliances costs provided in the Economic Impacts Analysis, they must certify that these costs are reasonable for the facility in question. See "projected compliance costs" in Section 2.02 of the MDV Implementation Guidance for details.

18. Has the feasibility of water quality trading or adaptive management been evaluated for the facility? Yes
 No

19. Is the facility eligible for adaptive management or water quality trading? Yes
 No

20. What is the needed offset to comply with AM/WQT? 690 lbs/year
 Unknown at this time

21. Is adaptive management or water quality trading a viable compliance option? Yes
 No

Describe:

Opportunities are not available for water quality trading with the agricultural community within HUC12 watershed trading area. Adaptive management would require a significant undertaking by the District with considerable risk and cost of professional services.

Service Area Information- Provide the following information for each municipality included in the wastewater facility service area.

Municipality Name	County	Population Served	Customer Households Served	Median Household Income (MHI)
Dale CDP	Outagamie	475	176	\$79,688.00

Non-Residential Customers:

Percent of wastewater flow attributed to commercial industrial, large institutional and any other special customer category:

17 %

Describe types of non-domestic wastewater contributions that constitute a significant phosphorus contribution or that significantly affect the capabilities of the treatment facility. Examples include: large food processors, dairies, or industries with unique wastewater.

None

Affordability to Municipal Dischargers

22. What is the projected household user charge, expressed as a percent of MHI, once phosphorus compliance costs are factored in?

1.34 %

Attach supporting information on a separate attachment to this form. The applicant may also provide additional information on impacts to commercial, industrial, or other special customers or any other information regarding affordability.

23. What is the secondary indicator score for the county (counties) in which the service area is located in?

3

*Note: See Appendix A of the MDV Implementation Guidance for details.
 If the service area is located in multiple counties, provide the weighted average value.*

Watershed Project. Select one of the following watershed project options:

Option A. County payment contribution



Option B. Binding, written agreement with the DNR to construct a project or implement a watershed plan.



Submit Form 3200-148 with MDV application

Option C. Binding, written agreement with another entity that is approved by the DNR to construct a project or implement a watershed plan.



Submit Form 3200-148 with MDV application.

WPDES Permit No.

WI- 0 | 0 | 3 | 0 | 8 | 3 | 0

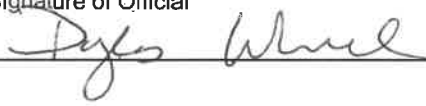
**Phosphorus Multi-Discharger
Variance Application for Municipal
Facilities** - s. 283.16, Wis. Stats.

Form 3200-150 (R 05/16)

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Certification

Based on the information provided, I believe that my permitted facility qualifies for coverage under the multi-discharger phosphorus variance based on the requirements of s. Wis. Stat. 283.16 (4), Wis. Stat. I understand that as a condition of the variance, the Department will impose interim limitations and require a watershed project or plan to be completed as part of the phosphorus reduction measures for phosphorus during the term of the variance in accordance with s. Wis. Stat. 283.16(6). I understand that these conditions will be included in the WPDES permit issued to this facility and I agree to comply with all applicable permit conditions for this variance. I hereby certify that the determination in Wis. Stat. 283.16(2)(a) applies to my permitted facility and that my permitted facility cannot otherwise comply with its phosphorus water quality based effluent limitations without a major facility upgrade. To the best of my knowledge, the information in this application is true, accurate, and complete.

Print or type name of person submitting request (Individual must be an Authorized Representative)	Title
Doug Wunderlich	Dale Sanitary District President
Signature of Official	Date Signed
	9/2/21

**Dale Sanitary District WWTP
Phosphorus Concentrations**

Influent Phosphorus Concentration - mg/L			
	2018	2019	2020
January		5.0	5.1
February		8.9	4.9
March	8.0	11.0	8.7
April	6.0	12.0	2.6
May	3.8	4.0	
June	5.0	4.3	2.5
July	7.2	5.4	5.9
August	8.8	9.0	
September	2.5	5.5	7.9
October		1.6	8.7
November	4.1	5.7	8.4
December		4.7	5.1
Average	5.7	6.4	6.0
Overall Average	6.0		

Effluent Phosphorus Concentration - mg/L			
	2018	2019	2020
January		5.1	3.4
February		5.8	3.8
March	5.7	6.1	4.8
April	4.8	3.7	3.9
May	4.2	3.1	2.9
June	4.5	4.2	4.0
July	4.4	4.7	2.5
August	4.5	3.7	1.6
September	4.4	4.0	4.8
October		3.0	3.2
November	4.1	2.5	3.5
December	4.5	2.5	3.1
Average	4.6	4.0	3.5
Overall Average	4.0		

Phosphorus Preliminary Compliance Plan
Preliminary Opinion of Probable Costs
Dale WWTP, Dale Sanitary District
December 2020

Type	Sand Filters		Cloth Media Disk Filters	Membrane System	Package Filter	Lease Package Filter
	Drydon/Parkson	ICS/Nexom	Drydon/Aqua Aerobics	Drydon/Ovivo	Water Life Systems	Water Life Systems
Tertiary Treatment	Dyna Upflow Sand Filter	Blue Pro Upflow Sand Filter	Cloth Media Disk Filters	Membrane Filter		
Equipment from Supplier	\$165,000	\$185,000	\$407,250	\$485,800	\$450,000	N/A
Chemical Feed System Prior to Tertiary Treatment	\$60,000	Included	\$60,000	N/A	N/A	N/A
Mechanical Installation 40 to 50% of Equipment Cost	\$112,500	\$92,500	\$186,900	\$194,320	\$50,000	\$50,000
Piping	\$100,000	\$100,000	\$100,000	\$100,000	\$75,000	\$75,000
Chemical Feed System at Head of Plant	\$179,000	N/A	\$179,000	\$179,000	N/A	N/A
Building/Tank to House Tertiary Treatment	\$375,000	\$375,000	\$200,000	\$125,000	N/A	N/A
Flow Meter and Housing	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Lift Station to Tertiary Treatment or for Reject Water	\$50,000	\$50,000	\$150,000	\$150,000	N/A	N/A
Sitework and Erosion Control	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Subtotal	\$1,136,500	\$897,500	\$1,378,150	\$1,329,120	\$670,000	\$220,000
Electrical and Controls 10%	\$113,650	\$89,750	\$137,815	\$132,912	\$67,000	\$22,000
Contractor General Conditions Costs 10%	\$113,650	\$89,750	\$137,815	\$132,912	\$67,000	\$22,000
Subtotal	\$1,363,800	\$1,077,000	\$1,653,780	\$1,594,944	\$804,000	\$264,000
Contingencies 20%	\$272,760	\$215,400	\$330,756	\$318,989	\$160,800	\$52,800
Subtotal	\$1,636,560	\$1,292,400	\$1,984,536	\$1,913,933	\$964,800	\$316,800
Engineering, Legal, Administrative 20%	\$327,312	\$258,480	\$396,907	\$382,787	\$192,960	\$63,360
TOTAL	\$1,963,872	\$1,550,880	\$2,381,443	\$2,296,719	\$1,157,760	\$380,160
(A/P, i%, n) Factor, i=3.125, n=20 yrs	0.068	0.068	0.068	0.068	0.068	0.068
Equivalent Annual Cost	\$133,543	\$105,460	\$161,938	\$156,177	\$78,728	\$25,851
Annual Operation and Maintenance Costs						
Labor	\$2,500	\$2,500	\$2,500	\$10,000	\$2,500	\$2,500
Power	\$1,500	\$1,000	\$1,500	\$2,000	\$1,500	\$1,500
Chemicals	\$3,500	\$2,500	\$3,500	\$75,000	N/A	N/A
Replacement 5% of equipment	\$11,750	\$11,750	\$27,863	\$31,790	\$22,500	N/A
Parts and Supplies 1% of equipment	\$2,150	\$2,350	\$5,573	\$6,358	N/A	N/A
Maintenance Costs by Hired Technician (\$1,500 plus reimbursables, estimated at \$1700/mo)					\$20,400	\$20,400
Lease Cost						\$144,000
Total Annual O&M Costs	\$21,400	\$20,100	\$40,935	\$125,148	\$46,900	\$168,400
Total Annual Equivalent Cost	\$154,943	\$125,560	\$202,873	\$281,325	\$125,628	\$194,251

Dale Sanitary District Sewer User Rate Calculations
April 2021 - Based on Nexom Upflow Sand Filter WWTP Upgrade

REVENUE	Current Revenue				User Ratio	Equivalent User	Required Rates/Revenue			Proposed Rate Increase			
	User	Rate	Quarterly	Annual			User	Rate (1/4)	Quarterly	Annual	Quarterly	Monthly	Annual
Single Residential	159	\$117	\$18,603	\$74,412	1.0	159	159	\$267.02	\$42,455.50	\$169,822.01	\$150.02	\$50.01	\$600.06
Business	30	\$150	\$4,500	\$18,000	1.3	38	30	\$342.33	\$10,269.84	\$41,079.35	\$192.33	\$64.11	\$769.31
Alzena Subdivision	17	\$204	\$3,468	\$13,872	1.7	30	17	\$465.57	\$7,914.62	\$31,658.48	\$261.57	\$87.19	\$1,046.26
Total Usage Fees	206		\$26,571	\$106,284		227				\$242,560			
Tax Roll Assessment				\$90,500						\$90,500			
Interest				\$800						\$800			
TOTAL REVENUE				\$197,584						\$333,860			
EXPENSES 2026													
2022 Estimated O&M				\$139,800									
Equip. Repl. Fund 2022				\$25,000									
Debt Retirement 2020 Improvements				\$43,500									
Estimated Additional O&M Costs				\$20,100									
Estimated Debt Retirement 2026				\$105,460									
TOTAL EXPENSES 2026				\$333,860									
EXPENSES MINUS REVENUE				\$136,276						\$0			
Annual Increase Required Per Equiv User				\$600.06									
Quarterly Increase Required Per Equiv User				\$150.02									

Debt Retirement 2020 \$43,500
 (\$1,050,000, 30% PF, 1.65%, 20 Years)

Future Debt Retirement \$105,460
 (\$1,550,880, 3.125%, 20 Years)

Percent of MHI	Projected	Current
Dale CDP MHI (for SFY 2022 Projects)	\$79,688	\$79,688
Residential Yearly Rate	\$1,068	\$468
Proposed Rate/MHI in Percentage	1.34%	0.59%
Needed Rate for 2% Annual	\$1,593.76	
Needed Rate for 2% Quarterly	\$398.44	
Needed Rate for 1.01% Annual	\$804.85	
Needed Rate for 1.01% Quarterly	\$201.21	

**Dale Sanitary District Sewer User Rate Calculations
April 2021 - Based on Purchase Water Life**

REVENUE	Current Revenue				User Ratio	Equivalent User	Required Rates/Revenue				Proposed Rate Increase		
	User	Rate	Quarterly	Annual			User	Rate (1/4)	Quarterly	Annual	Quarterly	Monthly	Annual
Single Residential	159	\$117	\$18,603	\$74,412	1.0	159	159	\$267.09	\$42,467.38	\$169,869.51	\$150.09	\$50.03	\$600.36
Business	30	\$150	\$4,500	\$18,000	1.3	38	30	\$342.42	\$10,272.71	\$41,090.83	\$192.42	\$64.14	\$769.69
Alzena Subdivision	17	\$204	\$3,468	\$13,872	1.7	30	17	\$465.70	\$7,916.83	\$31,667.34	\$261.70	\$87.23	\$1,046.78
Total Usage Fees	206		\$26,571	\$106,284		227				\$242,628			
Tax Roll Assessment				\$90,500						\$90,500			
Interest				\$800						\$800			
TOTAL REVENUE				\$197,584						\$333,928			
EXPENSES 2026													
2022 Estimated O&M				\$139,800									
Equip. Repl. Fund 2022				\$25,000									
Debt Retirement 2020 Improvements				\$43,500									
Estimated Additional O&M Costs				\$46,900									
Estimated Debt Retirement 2026				\$78,728									
TOTAL EXPENSES 2026				\$333,928									
EXPENSES MINUS REVENUE				\$136,344						\$0			
Annual Increase Required Per Equiv User				\$600.36									
Quarterly Increase Required Per Equiv User				\$150.09									

Debt Retirement 2020
(\$1,050,000, 30% PF, 1.65%, 20 Years) \$43,500

Future Debt Retirement
(\$1,157,760, 3.125%, 20 Years) \$78,728

Percent of MHI	Projected	Current
Dale CDP MHI (for SFY 2022 Projects)	\$79,688	\$79,688
Residential Yearly Rate	\$1,068	\$468
Proposed Rate/MHI in Percentage	1.34%	0.59%
Needed Rate for 2% Annual	\$1,593.76	
Needed Rate for 2% Quarterly	\$398.44	
Needed Rate for 1.01% Annual	\$804.85	
Needed Rate for 1.01% Quarterly	\$201.21	

Notice: This checklist is meant to be a tool to help Department of Natural Resources (DNR) staff review municipal and industrial multi-discharger variance (MDV) applications (Forms 3200-149 and 3200-150). Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31-19.39, Wis. Stats.).

Permittee Name
Dale Sanitary District

WPDES Permit Number
WI- 0 | 0 | 3 | 0 | 8 | 3 | 0

County
Outagamie

1. Did the point source apply for the MDV at the appropriate time?	<input checked="" type="radio"/> Yes <input type="radio"/> No. STOP- facility not eligible at this time.	See Questions 1-3.
2. This operation is (check one):	<input type="radio"/> New or relocated outfall. STOP- facility not eligible. <input checked="" type="radio"/> Existing outfall	See Questions 5-6.
3. Is the point source is located in an MDV eligible area?	<input checked="" type="radio"/> Yes <input type="radio"/> No. STOP- facility not eligible.	Apply County information to Appendix H. Additional information provided in Q7 on municipal form & Q7-8 on industrial form.
4. The secondary indicator score for the county (counties) the discharge is located is:	3	See Appendices A-F. If the score is less than 2, stop; the facility is not eligible. See Q23 on municipal form & Q28 on industrial form.
5. Is a major facility upgrade required to comply with phosphorus limits?	<input checked="" type="radio"/> Yes <input type="radio"/> No. STOP- facility not eligible.	See Q8 on municipal form/Q9 on industrial form.
6. List the months where phosphorus limits cannot be achieved during the permit term:	<input checked="" type="checkbox"/> All <input checked="" type="checkbox"/> Jan <input checked="" type="checkbox"/> Apr <input checked="" type="checkbox"/> Jul <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Feb <input checked="" type="checkbox"/> May <input checked="" type="checkbox"/> Aug <input checked="" type="checkbox"/> Nov <input checked="" type="checkbox"/> Mar <input checked="" type="checkbox"/> Jun <input checked="" type="checkbox"/> Sep <input checked="" type="checkbox"/> Dec	Consider checking with limit calculator. If this does not match information in application, the application should be updated prior to approval.

7. What is the current effluent level achievable?

Outfall Number(s)	Conc. (mg/L)	Method for calculation:	Does this concur with application?	
001	4.85	<input checked="" type="radio"/> 30-day P99 <input type="radio"/> Other, specify:	<input type="radio"/> Yes <input checked="" type="radio"/> No, why not: application used smaller data subset	DNR staff should verify the effluent concentration value(s) provided. See Q11 on municipal form & Q12 on industrial form.

8. What is the appropriate interim limitation(s) for the permit term?
1.0 mg/L as a monthly average, per s. 283.16(6)(am), Wis. Stats.
Target Value = 0.2 mg/L
Facility upgrades will be required to consistently meet the interim limit for phosphorus.

Provide Rationale:
Effluent phosphorus data from the past three years (8/1/2018 - 7/31/2021, n=35) yield a 30-day p99 value of 4.85 mg/L. This value represents a level currently achievable (LCA), however the WQBEL memo may recommend a LCA that differs from and may used in lieu of what is shown above. If the MDV is requested for future permit terms, the interim limit corresponding to highest attainable condition will be recalculated using new data.

Note: See description in Section 2.02 of the MDV implementation guidance. Interim limitations should reflect the "highest attainable condition" for the permittee in question pursuant to s. 283.16(7), Wis. Stat.

<p>9. <i>For Industries Only-</i> Where does the phosphorus in the effluent come from? (check all that apply)</p>	<p><input type="checkbox"/> Process <input type="checkbox"/> Additive Usage <input type="checkbox"/> Water supply</p> <p><i>Can intake credits be given or can the facility use an alternative water supply?</i></p> <p><input type="radio"/> Not feasible <input type="radio"/> Possibly, but further analysis needed <input type="radio"/> Not evaluated at this time</p>	<p><i>See Q14-15 & 19 on industrial form. If the answer is "possibly" or "not evaluated", the schedule section of the MDV permit should contain a requirement to perform this analysis.</i></p>
<p>10. Has this facility optimized?</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> In progress <input type="radio"/> No</p>	<p><i>See Q14 on municipal form & Q16 & 20 on industrial form. Facility must optimize and operate at an optimize treatment level (s. 283.16(6)(a), Wis. Stat.) If no will need compliance schedule.</i></p>
<p>11. Has a facility plan/compliance alternative plan been completed for the facility?</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> In progress <input type="radio"/> No</p>	<p><i>See Q15 on municipal form & Q17 on industrial form.</i></p>
<p>12. What is the projected cost for complying with phosphorus?</p> <p>Source:</p>	<p>\$ <input type="text" value="1,855,729.00"/></p> <p><input type="text" value="20-yr net present value from preliminary compliance alternatives plan"/></p>	<p><i>Facility must submit site-specific compliance costs. If cost projections are used from EIA, the permittee must certify that these costs are reasonable for the facility in question. See "projected compliance costs" in Section 2.02 of the MDV Implementation Guidance for details.</i></p>

Comments on planning efforts:

A preliminary compliance alternatives plan, dated December 2020, was prepared by Martenson and Eisele, Inc. and submitted on behalf of Dale Sanitary District. The document provides planning considerations surrounding the low-level phosphorus effluent limits applicable to the Sanitary District. Non-treatment alternatives such as adaptive management and water quality trading were evaluated. Coordinating an adaptive management effort is not realistic for Dale Sanitary District. An in-depth assessment of water quality trading indicates that trading may be feasible, however no trading partners have been secured at this time. Dale Sanitary District should continue to investigate water quality trading in the next permit term. Treatment technologies capable of meeting the final phosphorus WQBEL were evaluated in the Plan. Site specific cost estimates were prepared, the most economic of which is used in the economic demonstration below.

<p>13. Are adaptive management and water quality trading viable?</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> Perhaps. Additional analysis required. <input type="radio"/> No</p>	<p><i>See Q18-21 on municipal form & Q22-25 on industrial form. If additional analyses required, the applicant may need to complete this analysis during the MDV permit term.</i></p>
<p>14. Has the point source met the appropriate primary screener?</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No. STOP- facility not eligible.</p>	<p><i>See Q4 of this form in addition to the "eligibility" guidance in Section 2.01 of the MDV Implementation Guidance.</i></p>

Comments on economic demonstration:

The preliminary compliance alternatives plan evaluates several treatment technologies including membrane filters, cloth media disk filters, and backwashing sand filters. The lowest cost option is identified as the Blue Pro Sand Filter, with capital costs of \$1,550,880 and increased O&M costs of \$20,100. These costs are lower than the statewide EIA estimate value for Dale Sanitary District of \$2M capital and \$20K estimated O&M increase. Capital costs financed over 20 years using the standard market interest rate of 2.7% result in annual payments of \$100,442, with a total annual cost of \$120,542 after O&M increases are included. The residential portion of compliance costs (excluding costs borne by businesses, industries, and institutions) is not clear from the MDV application. However, based on supporting materials provided, it appears that revenue from businesses make up 16.9% of all revenue. Therefore, the residential portion of compliance costs will be 83.1% of the total, or \$100,170. This cost, divided amongst 176 user households results in an annual average rate increase of \$569. With current annual average sewer rates at \$468, future sewer rates are projected at \$1,037 annually. This amount is 1.3% of Dale CDP's \$79,688 median household income. In Outagamie County with a Secondary score of 3, a 1% MHI sewer rate is required for eligibility. The Sanitary District meets the primary screener.

15. What watershed option was selected?

- County project option. *Complete Section 5.*
- Binding, written agreement with the DNR to construct a project or implement a watershed plan. *Complete Section 4.*
- Binding, written agreement with another person that is approved by the DNR to construct a project or implement a watershed plan. *Complete Section 4.*

Section 4. Watershed Plan Review

16. MDV Plan Number:

Note: This is for tracking purposes. Contact Statewide Phosphorus Implementation Coordinator for the plan number.

17. Did the point source complete Form 3200-148?

- Yes
- No

18. Is the project area in the same HUC 8 watershed as the point of discharge?

- Yes
- No. *STOP- Watershed plan must be updated.*

19. What is the annual offset required?

See Section 2.03 of the MDV implementation guidance. If this value is different from the offset target provided in form 3200-148, the watershed plan should be amended.

20. Does the plan ensure that the annual load is offset annually?

- Yes
- No. *STOP- Watershed plan must be updated.*

21. Are projects occurring on land owned/operated by a CAFO or within a permitted MS4 boundary?

- Yes. *Work with appropriate DNR staff to ensure projects are not working towards other permit compliance.*
- No.

22. Are other funding sources being used as part of the MDV watershed project?

- Yes. *Work with appropriate DNR staff to ensure that funding sources can be appropriately used in the plan area.*
- No.

23. Do you have any concerns about the watershed project?

Note: Coordinate with other DNR staff as appropriate.

- Yes. *STOP- Watershed plan must be updated.*
- No.

Comments:

Section 5. Payment to the County(ies)

24. At this time, the appropriate per pound payment is:

\$

See "Payment Calculator" document at [\central\water\WQWT_PROJECTS\WY_CW_Phosphorus\MDV](#).

Section 6. Determination

Based on the available information, the MDV application is:

- Approved
- Request for more information
- Denied

Save

Additional Justification (if needed):

Certification

Preparer Name	Title
Matt Claucherty	Water Resources Management Specialist
Signature of Preparer <i>Matthew Claucherty</i>	Date 9/13/2021

A copy of this completed checklist should be saved in SWAMP, and a notification of the decision should be sent to the Phosphorus Implementation Coordinator.

[Submit to Coordinator...](#)



09/13/2021

Charles Zehner, Clerk-Treasurer
P.O. Box 103
Dale, WI 54931

Subject: Conditional approval of a multi-discharger phosphorus variance
Receiving Stream: Tributary of the Rat River in Outagamie County
Permittee: Dale Sanitary District No. 1, WPDES WI-0030830

Dear Mr. Zehner:

In accordance with s. 283.16 of the Wisconsin Statutes, you have requested coverage under Wisconsin's multi-discharger phosphorus variance for the Dale Sanitary District No. 1 Wastewater Facility in an application dated 9/2/21. Wisconsin's multi-discharger phosphorus variance was approved by EPA on February 6, 2017. Coverage under the multi-discharger phosphorus variance may only be granted to an existing source that demonstrates a major facility upgrade is necessary to achieve phosphorus compliance and the upgrade will result in economic hardship as defined in the federally approved variance. The water quality criterion for which you are seeking a variance is contained in s. NR 102.06, Wis. Adm. Code.

After review of the application materials, the Department is tentatively approving coverage under the phosphorus multi discharger variance because the applicant has demonstrated that a major facility upgrade would be required to comply with the phosphorus water quality based effluent limitation, and the applicant meets the economic hardship eligibility criteria delineated in the federally approved variance. In addition, the permitted facility has agreed to comply with the interim limitations that will be included in the WPDES permit, and has agreed to reduce the amount of phosphorus entering surface waters by making payments to the counties pursuant to s. 283.16(6)(b)1., Wis. Stats.

Public comment on this decision will be solicited at the time of permit reissuance after which a final decision will be made. The Department appreciates your interest in Wisconsin's multi-discharger phosphorus variance. Should you have further questions regarding this matter, please contact me at matthew.claucherty@wisconsin.gov.

Sincerely,

Matt Clacherty, MDV Point Source Coordinator
Division of Environmental Management

Attachment
e-cc

Doug Wunderlich, Dale Sanitary District No. 1
Mary Jo Miller, Martenson & Eisele Engineers
Barti Oumarou, WDNR
Tim Elkins, EPA Region 5
Micah Bennett, EPA Region 5