

Village of Granton Public Noticed Fact Sheet

General Information

Permit Number:	WI-0020885-11-0
Permittee:	Village of Granton, 210 Maple Street, Village Hall PO Box 69, Granton WI 54436
Discharge Location:	Granton Wastewater Treatment Facility, 317 Hill St, Granton, WI 54436 North bank of the South Branch of O’Neill Creek approximately 1,000 feet west of the Highway K bridge. SW1/4, NE1/4, Section 2, T24N R01W, Village of Granton, Clark County, WI
Receiving Water:	the surface waters of the South Branch of O’Neill Creek in the O’Neill and Cunningham Creeks Watershed of the Black River Drainage Basin located in Clark County
StreamFlow (Q _{7,10}):	0.23 cfs
Stream Classification:	Warm Water Sport Fish (WWSF) community, non-public water supply
Discharge Type:	Existing, Fill and Draw
Design Flow:	0.0574 MGD Annual Average
Significant Industrial Loading?	None
Operator at Proper Grade?	Due to operational changes at the facility for phosphorus, the facility has received the phosphorus subclass. The phosphorus subclass certification will be due on October 31, 2024, one year after notification to the facility of the subclass addition during the facility inspection.
Approved Pretreatment Program?	N/A

Facility Description

The Village of Granton operates a fill and draw, 3-cell aerated lagoon wastewater treatment system. Ferric chloride is added in Manhole 2 with air mixing to assist in settling out the phosphorus in the ponds. Effluent is disinfected seasonally via chlorination followed by dichlorination. The facility discharges seasonally to the South Branch of O’Neill Creek. The annual average design flow of the facility is 0.0574 million gallons per day (MGD). The actual annual average influent flow in 2023 was 0.030 MGD and the actual annual average effluent flow was 0.271. The only major operational change in the last permit term was addition of ferric chloride in the treatment system for chemical phosphorus removal. However, the permittee is in the process of switching from addition of ferric chloride to poly aluminum chloride for chemical phosphorus removal. Significant effluent monitoring and/or limit changes in this permit term are as follows: 1) the addition of annual monitoring for total nitrogen, nitrite + nitrate nitrogen and total Kjeldahl nitrogen, 2) the variable daily maximum ammonia limit table has been expanded to include applicable limits at a lower effluent pH & the limits apply year-round, 3) the ammonia monitoring frequency has increased, 4) the conditional reapproval of a multi-discharger variance (MDV) for phosphorus and the inclusion of the associated schedules to comply with s. 283.16, Wis. Stats. requirements for phosphorus, 5) addition of weekly average BOD mass limits June – Sept, 6) because the permittee is using chemical addition for phosphorus control, the lagoon variance for TSS is no longer approved, therefore TSS concentration and mass limits that vary monthly have been added, 7) fecal coliform monitoring and limits will be replaced during the permit term with Escherichia coli (E. coli) monitoring and limits, per the associated compliance schedule, and

8) addition of a dissolved oxygen (DO) limit, along with a compliance schedule to meet the new limits. The influent & effluent flow monitoring frequencies have changed from “continuous” to “daily” for eDMR reporting purposes. Clarification language has been added notifying the permittee they must monitor sludge for List 2 nutrients and meet the requirements of List 3 (Pathogen Control) and List 4 (Vector Attraction Reduction) prior to landspreading if they remove sludge from the lagoon(s). Additionally, to quantitate the risk, PFAS sludge sampling has been included in the permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code. A schedule has been included in the permit requiring the permittee submit a sludge management plan prior to removal and land application of sludge from the lagoon(s). A schedule has also been added that requires the permittee have an operator certified in the P Subclass (Phosphorus).

Substantial Compliance Determination

Enforcement During Last Permit: The facility had a discharge violation of their monthly average ammonia nitrogen limit in May of 2022 due to having to discharge later than planned. This was not a reoccurring issue, and no further enforcement was taken.

After a desk top review of all discharge monitoring reports, land application reports, and compliance schedule items, and an inspection on 10/03/2023, Granton WWTF has been found to be in substantial compliance with their current permit.

Compliance determination conducted by Jenna Monahan on 10/13/2023.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)
701	Influent: 0.030 MGD (2023)	Representative influent samples shall be taken at the flow control structure.
110	Inplant: No flow monitoring	Representative composite samples shall be taken from the three sides of the holding pond. Permittee is only required to monitor weekly for the four weeks prior to a discharge event.
002	Effluent: 0.271 MGD (2023)	Representative effluent samples shall be taken at the contact chamber prior to discharge. Fecal coliform/E. coli, chlorine and pH samples shall be collected after disinfection; all others shall be collected prior to disinfection. Sampling is only required during discharge.
005	Lagoon Sludge: Facility has not removed & landspread sludge since 05/30/1986, however they may remove sludge this permit term.	Representative composite sludge samples shall be monitored for the parameters as listed in the table below. If the permittee plans to remove sludge, they shall monitor sludge for Lists 1, 2, 3 & 4 prior to land application. The Department shall be notified at least 30 days in advance of sludge removal so that appropriate monitoring forms can be provided. Approval of landspreading sites must be completed prior to sludge removal.

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	
BOD5, Total		mg/L	Weekly	24-Hr Comp	
Suspended Solids, Total		mg/L	Weekly	24-Hr Comp	

Changes from Previous Permit:

The sample frequency for flow has been changed from “continuous” to “daily” for eDMR reporting purposes.

Explanation of Limits and Monitoring Requirements

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

2 Inplant - Monitoring and Limitations

Sample Point Number: 110- HOLDING POND SIDES A-B-C

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
BOD5, Total		mg/L	Weekly	3-Grab Comp	
Suspended Solids, Total		mg/L	Weekly	3-Grab Comp	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Weekly	3-Grab Comp	
pH Field		su	Weekly	3-Grab Comp	

Changes from Previous Permit:

No changes

Explanation of Limits and Monitoring Requirements

This monitoring is required to ensure that adequate treatment has taken place before discharging to the 365-day storage pond.

3 Surface Water - Monitoring and Limitations

Sample Point Number: 002- EFFLUENT TO O'NEILL CREEK

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate	Daily Max	0.288 MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	mg/L	2/Week	24-Hr Comp	See section below on variable weekly & monthly average BOD ₅ limits
BOD5, Total	Monthly Avg	mg/L	2/Week	24-Hr Comp	
BOD5, Total	Weekly Avg	lbs/day	2/Week	Calculated	
Suspended Solids, Total	Weekly Avg	mg/L	2/Week	24-Hr Comp	See section below on variable weekly & monthly average TSS limits
Suspended Solids, Total	Monthly Avg	mg/L	2/Week	24-Hr Comp	
Suspended Solids, Total	Weekly Avg	lbs/day	2/Week	Calculated	
Dissolved Oxygen	Daily Min	7.0 mg/L	Daily	Grab	Monitoring required at permit effective date. Limit effective 04/01/2026. See the associated compliance schedule.
Nitrogen, Ammonia Variable Limit		mg/L	2/Week	24-Hr Comp	Daily maximum limit varies with effluent pH. See ammonia section below for limits.
Nitrogen, Ammonia (NH ₃ -N) Total	Daily Max - Variable	mg/L	2/Week	24-Hr Comp	
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	15 mg/L	2/Week	24-Hr Comp	See section below on variable weekly & monthly average ammonia limits
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	6.2 mg/L	2/Week	24-Hr Comp	
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	2/Week	Grab	Interim limit effective May - September until the final E. coli limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli		#/100 ml	2/Week	Grab	Monitoring only May - Sept until the final limit goes into effect per the Effluent Limitations for E. coli

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					Schedule.
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Limit effective May - Sept per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit effective May - Sept per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Chlorine, Total Residual	Daily Max	27 ug/L	Daily	Grab	Limit & monitoring apply May - Sept
Chlorine, Total Residual	Weekly Avg	8.2 ug/L	Daily	Grab	
Phosphorus, Total	Monthly Avg	0.6 mg/L	2/Week	24-Hr Comp	See the MDV/Phosphorus subsections and phosphorus compliance schedules.
Phosphorus, Total		lbs/month	Monthly	Calculated	Report the total monthly phosphorus discharged in lbs/month on the last day of the month on the DMR. See Standard Requirements for 'Appropriate Formulas' to calculate the Total Monthly Discharge in lbs/month. See the MDV/phosphorus schedules below & and associated schedules.
Phosphorus, Total		lbs/yr	Annual	Calculated	Report the sum of the total monthly discharges for the calendar year on the Annual report form. See the MDV/phosphorus sections below & the associated schedules.
Temperature Maximum		deg F	Weekly	Multiple Grab	Monitoring required in 2027 only. See temp section below.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Comp	Monitoring required

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Comp	annually in specific quarters. See Nitrogen Series Monitoring section below for more info.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	

Changes from Previous Permit

1) the addition of annual monitoring for total nitrogen, nitrite + nitrate nitrogen and total Kjeldahl nitrogen, 2) the variable daily maximum ammonia limit table has been expanded to include applicable limits at a lower effluent pH & the limits apply year-round, 3) the ammonia monitoring frequency has increased from weekly to 2/week, 4) the conditional reapproval of a multi-discharger variance (MDV) for phosphorus and the inclusion of the associated schedules to comply with s. 283.16, Wis. Stats. requirements for phosphorus, 5) addition of weekly average BOD mass limits June – Sept, 6) because the permittee is using chemical addition for phosphorus control, the lagoon variance for TSS is no longer approved, therefore TSS concentration and mass limits that vary monthly have been added, 7) fecal coliform monitoring and limits will be replaced during the permit term with Escherichia coli (E. coli) monitoring and limits, per the associated compliance schedule, 8) a dissolved oxygen limit has been added along with a schedule to meet the new limit, and 9) the sample frequency for flow has been changed from “continuous” to “daily” for eDMR reporting purposes.

Explanation of Limits and Monitoring Requirements

The effluent monitoring frequency for all parameters were considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Requirements in administrative code (NR 108, 205, 210 and 214 Wis. Adm. Code) and Section 283.55, Wis. Stats. were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. For more information see the March 22, 2021 version of the Bureau of Water Quality Program Guidance Document “Monitoring Frequencies for Individual Wastewater Permits”. Using the criteria previously stated, the department has determined a monitoring frequency increase for ammonia is needed from weekly to 2/week.

Limits were determined for Granton’s existing discharge to the South Branch of O’Neill Creek using chs. NR 102, 104, 105, 106, 207, 210, 212 and 217 of the Wisconsin Administrative Code (where applicable). For additional information on any of the limits see the December 21, 2023 memo from Nicole Krueger to Holly Heldstab titled “Water Quality-Based Effluent Limitations for Granton Wastewater Treatment Facility WPDES Permit No. WI-0020885-11”.

MUNICIPAL EFFLUENT LIMITS – Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are not required due to the non-continuous nature of the discharge.

BOD₅: See the table below for variable BOD₅ limits. Standard municipal wastewater requirements for BOD₅ are included based on ch. NR 210, Wis. Adm. Code ‘Sewage Treatment Works’ requirements for discharges to fish and aquatic life streams. Weekly average mass limits have been added for the months of June – September. Mass limits are included in the reissued permit for these months for antidegradation purposes. If BOD₅ loading increases, this would be considered an increased discharge under ch. NR 207, Wis. Adm. Code.

Variable Weekly Average and Monthly Average BOD₅ Limits

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)	Weekly Avg (lbs/day)
January	21	21	49
February	20	20	48
March	21	21	50
April	30	45	-
May	26	26	61
June	8.1	8.1	20
July	6.6	6.6	16
August	6.5	6.5	16
September	8.0	8.0	20
October	14	14	35
November	24	24	57
December	22	22	53

Total Suspended Solids (TSS): See the table below for variable TSS limits. Standard municipal wastewater requirements for TSS are included based on ch. NR 210, Wis. Adm. Code ‘Sewage Treatment Works’ requirements for discharges to fish and aquatic life streams. The permittee was previously granted an effluent limit variance of 60 mg/L as described in s. NR 210.07(2), Wis. Adm. Code applicable where aerated lagoons or stabilization ponds are the principal treatment processes. The facility is currently using chemical treatment for phosphorus removal so are no longer eligible for the variance. Therefore, monthly average and weekly average TSS limits have been added.

Variable Weekly Average and Monthly Average TSS Limits

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)	Weekly Avg (lbs/day)
January	21	21	49
February	20	20	48
March	21	21	50
April	30	45	-
May	26	26	61
June	10	10	24
July	10	10	24
August	10	10	24
September	10	10	24
October	14	14	35
November	24	24	57
December	22	22	53

pH: Categorical limits for pH are required per ch. NR 210 (Subchapter II). Chapter NR 102, Wis. Adm. Code ‘Water Quality Standards for Surface Waters’ also specifies requirements for pH for fish and aquatic life streams.

Dissolved Oxygen (DO): A dissolved oxygen limit has been added, along with an associated compliance schedule to meet the limit. The previous WQBEL evaluation calculated the monthly variable BOD₅ limits using an effluent DO of 7.0 mg/L. Therefore, a daily minimum DO limit of 7.0 mg/L is included that the assumptions of the BOD₅ limits calculations are met.

Ammonia: See tables below for daily maximum, weekly average and monthly average ammonia limits. 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. Daily maximum ammonia limits that vary with effluent pH apply year-round. Weekly average & monthly average limits that vary by month also apply. Samples for ammonia shall be collected at the same time as the pH samples.

Daily Maximum Ammonia Limits that Vary with Effluent pH

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	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

Variable Weekly Average and Monthly Average Ammonia Limits

Month	Weekly Avg (mg/L)	Monthly Avg (mg/L)
January	15	6.2
February	15	6.2
March	15	14
April	26	24
May	16	12
June	11	8.1
July	7.7	4.5
August	7.5	4.1
September	11	6
October	19	9.0
November	26	12
December	25	11

Disinfection/E. Coli/Fecal Coliform: Granton disinfects the effluent May-Sept using chlorination/dechlorination, prior to discharge to the South Branch of O’Neill Creek. Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020. The new rule requires that WPDES permits for facilities with required disinfection include monitoring for E. coli while facilities are disinfecting during the recreation period, and establish effluent limitations for E. coli established in s. NR 210.06 (2), Wis. Adm Code. The administrative code rule changes included the following actions: revised the bacteria water quality criteria from fecal coliform to E. coli to protect recreation in ch. NR 102, Wis. Adm. Code.; removed fecal coliform criteria for certain individual waters from ch. NR 104, Wis. Adm. Code.; revised permit requirements for publicly and privately

owned sewage treatment works in ch. NR 210, Wis. Adm. Code.; and, updated approved analytical methods for bacteria in ch. NR 219, Wis. Adm. Code.

E. coli monitoring is required at the permit effective date. An interim fecal coliform limit of 400 #/100 ml as a monthly geometric mean will apply from the permit effective date through the end of a compliance schedule. At the end of the compliance schedule, E. coli limits of 126 #/100 ml as a monthly geometric mean that may not be exceeded and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply.

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 (0.225 monthly average and 0.075 & 0.18 lbs/day mg/L 6-month average) were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has re-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. Granton’s MDV application was conditionally approved by the DNR on October 25, 2023. 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 new interim monthly average highest attainable condition (HAC) limit of 0.6 mg/L applies at the permit effective date.

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.

Total Nitrogen Monitoring (NO₂+NO₃, TKN 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:

- 2nd quarter (April – June) 2024
- 4th quarter (October – December) 2025
- 2nd quarter (April – June) 2026
- 4th quarter (October – December) 2027
- 2nd quarter (April – June) 2028

PFOS and PFOA: NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Based on information available at the time the 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): Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code, as revised in August 2016. (See the

current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at <http://dnr.wi.gov/topic/wastewater/wet.html>). No WET testing is required because information related to the discharge indicates low to no risk for toxicity.

Mercury: The permit application did not require monitoring for mercury because the Melrose Wastewater Treatment Facility 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), Wis. Adm. Code.” A review of the past five years of sludge characteristics data reveals that all the sample results are within expected analytical ranges and well below the 17 mg/kg level. The concentration in the one sludge sample provided in the last permit term was <0.0022 mg/kg. Therefore, no mercury monitoring is required at Outfall 002.

Chloride: Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. Effluent chloride concentrations submitted with the permit application indicate low to no risk for toxicity, therefore no effluent limits or monitoring are required.

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° F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects. Due to the amount of upstream flow available for dilution in the limit calculation (Qs:Qe >20:1), the lowest calculated limitation is 120° F (s. NR 106.55(6)(a), Wis. Adm. Code). For lagoon treatment systems of domestic waste, there is no reasonable potential for the discharge to exceed this limit. Therefore, temperature limits nor monitoring are not required. Monitoring is required in one year of the permit term to establish a baseline of effluent temperature data for the next permit reissuance.

4 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)
005	B	Liquid	Fecal Coliform	Injection	Land Application	Facility has not removed & landspread sludge since 05/30/1986, however they may remove sludge this permit term. Pathogen reduction & vector control methods listed are likely options the facility will choose, but other methods are possible.
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: 005- POND SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Nitrogen, Total Kjeldahl		Percent	Per Application	Composite	Prior to land application
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Per Application	Composite	Prior to land application
Phosphorus, Total		Percent	Per Application	Composite	Prior to land application
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	Prior to land application
Potassium, Total Recoverable		Percent	Per Application	Composite	Prior to land application
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Once in 2025
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2025
PFOA + PFOS		ug/kg	Once	Calculated	Once in 2025

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
PFAS Dry Wt			Once	Grab	Once in 2025. Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Changes from Previous Permit:

List 2 Nutrient monitoring – Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in year two of the permit. Results will assist in the determination of the acres needed for land application of sludge should it be necessary. The number of acres needed is also required for the Sludge Management Schedule (see schedules for more information).

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

PFAS – Monitoring is required once during the permit term pursuant 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).

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”.

5 Schedules

5.1 Effluent Limitations for E. coli

The permittee shall comply with surface water limitations for E. coli as specified. No later than 14 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification.

Required Action	Due Date
<p>Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.</p>	05/21/2024
<p>Operational Evaluation Report: The permittee shall prepare and submit an Operational Evaluation Report to the Department for review and approval. The report shall include an evaluation of collected effluent data and proposed operational improvements that will optimize efficacy of disinfection at the treatment plant during the period prior to complying with final E. coli limitations and, to the extent possible, enable compliance with the final E. coli limitations. The report shall include a plan and schedule for implementation of the operational improvements. These improvements shall occur as soon as possible, but not later than 04/30/2025. The report shall state whether the operational improvements are expected to result in compliance with the final E. coli limitations.</p> <p>The permittee shall implement the operational improvements in accordance with the approved plan and schedule specified in the Operational Evaluation Report and in no case later than 04/30/2025.</p> <p>If the Operational Evaluation Report concludes that the operational improvements are expected to result in compliance with the final E. coli limitations, the permittee shall comply with the final E. coli limitations by 04/30/2025 and the permittee is not required to comply with subsequent milestones identified below in this compliance schedule ('Submit Facility Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet Limitations', 'Construction Upgrade Progress Report', 'Complete Construction', 'Achieve Compliance').</p> <p>FACILITY PLAN - If the Operational Evaluation Report concludes that operational improvements alone are not expected to result in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance.</p> <p>If the Department disagrees with the conclusion of the report and determines that the permittee can achieve final E. coli limitations using the existing treatment system with only operational improvements, the Department may reopen and modify the permit to include an implementation schedule for achieving the final E. coli limitations sooner than 04/30/2028.</p>	11/30/2024
<p>Submit Facility Plan: If the Operational Evaluation Report concluded that the permittee cannot achieve final E. coli limitations with operational improvements alone, the permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.</p>	04/30/2025
<p>Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to achieve compliance with final E. coli limitations and a schedule for completing construction of the upgrades by the complete construction date specified below.</p>	03/31/2026
<p>Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41, Stats., prior to initiating activities defined as</p>	09/30/2026

construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	
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 wastewater treatment system upgrades.	03/31/2028
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2028

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

5.2 Dissolved Oxygen (DO) Schedule

This compliance schedule requires the permittee to achieve compliance with the new dissolved oxygen (DO) limit by the specified date.

Required Action	Due Date
Report on Effluent Discharges: Submit a report on dissolved oxygen levels in the effluent to surface water with conclusions regarding compliance.	03/31/2025
Complete Actions: Complete actions necessary to achieve compliance with the DO effluent limitation. DO limit becomes effective April 1, 2026.	03/31/2026

Explanation of Schedule: The previous WQBEL evaluation calculated the monthly variable BOD₅ limits using an effluent DO of 7.0 mg/L. Therefore, a daily minimum DO limit of 7.0 mg/L is included that the assumptions of the BOD₅ limits calculations are met. The compliance schedule lays out a timeline for the permittee to investigate and implement a plan to comply with the new DO limit by the end of the schedule.

5.3 Phosphorus Schedule - Continued Optimization

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

Required Action	Due Date
Optimization: The permittee shall continue to implement the optimization plan as previously approved to optimize performance to control phosphorus discharges. Submit a progress report on optimizing removal of phosphorus by the Due Date.	03/31/2025
Progress Report #2: Submit a progress report on optimizing removal of phosphorus.	03/31/2026
Progress Report #3: Submit a progress report on optimizing removal of phosphorus.	03/31/2027
Progress Report #4: Submit a progress report on optimizing removal of phosphorus.	03/31/2028
Progress Report #5: Submit a progress report on optimizing removal of phosphorus.	03/31/2029

Explanation of Continued Optimization Schedule: 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 continue to implement the optimization plan that was approved during the previous permit term.

5.4 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
<p>Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/01/2026
<p>Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/01/2027
<p>Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/01/2028
<p>Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.</p>	03/01/2029
<p>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.</p>	
<p>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.</p>	

Explanation of County Payment Schedule: 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).

5.5 Sludge Management Plan

Required Action	Due Date
<p>Submit a Sludge Management Plan: The permittee shall submit a management plan for approval if removal of sludge will occur during this permit term. The plan shall demonstrate compliance with ch. NR 204, Wis. Adm. Code and at minimum address 1) How and where is sludge sampled; 2) Available sludge storage details and location(s); 3) How will the sludge be removed with details on volume, characterization and how will the treatment plant continue to function during the drawdown; 4) Describe the type of transportation and spreading vehicles and loading and unloading practices; 5) Identify approved land application sites, apply for needed sites, site limitations, total acres needed and vegetative cover management; 6) Specify record keeping procedures including site loading; 7) Address contingency plans for adverse weather and odor/nuisance abatement; and 8) Include any other pertinent information such as other disposal options that may be used or specifications of any pretreatment processes</p> <p>Once approved, all sludge management activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes. No desludging may occur unless approval from the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed.</p> <p>The plan is due at least 60 days prior to desludging.</p>	

Explanation of Sludge Management Plan Schedule: If the lagoons are to be de-sludged during this permit term. A management plan is needed to show compliance with ch NR 204, Wis. Adm. Code by clearly explains how the sludge will be safely removed, what contingencies are in place, the type of equipment that will be used and how the sludge will be land applied to ensure the proper precautions are in place to prevent any negative impacts to surface water or groundwater.

5.6 Operator Certification

Required Action	Due Date
<p>Operator Certification- P Subclass: Per s. NR 114.53 Wis. Adm. Code, the permittee shall have an operator in charge certified in the P Subclass (Phosphorus) by the due date. Within 30 days of receiving certification, the permittee shall notify the department in writing of the certified operator's name and certification number with the P Subclass certification.</p>	10/31/2024

Explanation of Schedules: Per s. NR 114.53 Wis. Adm. Code, Granton WWTF must have an operator in charge that holds all certifications at the proper level. Nutrient Removal Subclass P for Total Phosphorus is a required subclass due to the use of chemical addition for phosphorus removal.

Special Reporting Requirements

None

Other Comments:

Publishing Newspaper: Clark County Press, PO Box 149, Neillsville, WI 54456

Attachments:

- December 21, 2023 WQBEL memo from Nicole Krueger to Holly Heldstab titled “Water Quality-Based Effluent Limitations for Granton Wastewater Treatment Facility WPDES Permit No. WI-0020885-11”.
- MDV Application submitted by facility dated 9/20/2023 and received by the Dept. 9/25/2023
- MDV Evaluation Checklist, completed by Matt Claucherty, dated 10/25/2023
- MDV Conditional Approval Letter, completed by Matt Claucherty, dated 10/25/2023

Expiration Date:

March 31, 2029

Justification Of Any Waivers From Permit Application Requirements

N/A

Prepared By: Holly Heldstab, Wastewater Specialist

Date: February 9, 2024

CORRESPONDENCE/MEMORANDUM

DATE: 12/21/2023
 TO: Holly Heldstab – WCR
 FROM: Nicole Krueger – SER *Nicole Krueger*
 SUBJECT: Water Quality-Based Effluent Limitations for Granton Wastewater Treatment Facility
 WPDES Permit No. WI-0020885-11

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 Granton Wastewater Treatment Facility in Clark County. This municipal wastewater treatment facility (WWTF) discharges to the South Branch of O’Neill Creek, located in the O’Neill and Cunningham Creeks Watershed in the Black River Drainage Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 002:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate	0.288 MGD					1
BOD ₅			Variable	Variable		2
TSS			Variable	Variable		3
Ammonia Nitrogen	Variable		Variable	Variable		4
pH	9.0 s.u.	6.0 s.u.				1
Bacteria						5
Interim Limit Fecal Coliform				400 #/100 mL geometric mean		
Final Limit <i>E. coli</i>				126 #/100 mL geometric mean		
Residual Chlorine	27 µg/L		8.2 µg/L			
Phosphorus LCA Interim Limit HAC Interim Limit Final WQBEL				0.8 mg/L 0.6 mg/L 0.225 mg/L	0.075 mg/L 0.18 lbs/day	6
Temperature						7
TKN, Nitrate+Nitrite, and Total Nitrogen						8

Footnotes:

1. No changes from the current permit.
2. The following monthly variable BOD₅ limits are recommended:

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)	Weekly Avg (lbs/day)
January	21	21	49
February	20	20	48
March	21	21	50

April	30	45	-
May	26	26	61
June	8.1	8.1	20
July	6.6	6.6	16
August	6.5	6.5	16
September	8.0	8.0	20
October	14	14	35
November	24	24	57
December	22	22	53

3. The following monthly variable TSS limits are recommended:

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)	Weekly Avg (lbs/day)
January	21	21	49
February	20	20	48
March	21	21	50
April	30	45	-
May	26	26	61
June	10	10	24
July	10	10	24
August	10	10	24
September	10	10	24
October	14	14	35
November	24	24	57
December	22	22	53

4. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH is below. These limits apply year-round.

Effluent pH s.u.	Daily max mg/L	Effluent pH s.u.	Daily max mg/L	Effluent pH s.u.	Daily max mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

The monthly variable weekly average and monthly average ammonia limits are below.

Month	Weekly Avg (mg/L)	Monthly Avg (mg/L)
January	15	6.2
February	15	6.2
March	15	14
April	26	24

May	16	12
June	11	8.1
July	7.7	4.5
August	7.5	4.1
September	11	6
October	19	9.0
November	26	12
December	25	11

5. Bacteria limits apply during the disinfection season of May through September. The fecal coliform interim limit will apply until the end of the compliance schedule when *E. coli* limits take effect. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
6. Under the phosphorus MDV, a level currently achievable (LCA) interim limit of 0.8 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 0.6 mg/L can be met. The final WQBELs remain at 0.225 mg/L as a monthly average and 0.075 mg/L as a six-month average, as well as a respective mass limit of 0.18 mg/L.
7. Monitoring only.
8. 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).

Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are not required due to the non-continuous nature of the discharge.

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

Attachments (4) – Narrative, Map, Ammonia Limits, and Outfall Map

PREPARED BY: Nicole Krueger, Water Resources Engineer – SER

E-cc: Jenna Monahan, Wastewater Engineer – WCR
 Geisa Thielen, Regional Wastewater Supervisor –WCR
 Diane Figiel, Water Resources Engineer – WY/3
 Nate Willis, Wastewater Engineer – WY/3

Attachment #1
**Water Quality-Based Effluent Limitations for
 Granton Wastewater Treatment Facility**

WPDES Permit No. WI-0020885-11

Prepared by: Nicole Krueger

PART 1 – BACKGROUND INFORMATION

Facility Description

The Village of Granton operates a fill and draw, 3-cell aerated lagoon wastewater treatment system. Ferric chloride is added in Manhole 2 with air mixing to assist in removing phosphorus in the ponds. The facility discharges seasonally to the South Branch of O’Neill Creek. No major operational changes occurred during the last permit term.

Attachment #2 is a map of the area showing the approximate location of Outfall 002.

Existing Permit Limitations

The current permit, expiring on 03/31/2024, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate	0.288 MGD				1
BOD ₅			Variable	Variable	2
TSS				60 mg/L	3
Ammonia Nitrogen	Variable		Variable	Variable	4
pH	9.0 s.u.	6.0 s.u.			1
Fecal Coliform May – September				400#/100 mL geometric mean	
Residual Chlorine May – September	38 µg/L		8.2 µg/L		
Phosphorus MDV Interim				0.8 mg/L	5
Temperature					6

Footnotes:

1. 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.
2. The following variable BOD₅ limits are effective in the permit:

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)	Weekly Avg (lbs/day)
January	21	21	49
February	20	20	48
March	21	21	50
April	30	45	-
May	26	26	61

Attachment #1

June	8.1	8.1	-
July	6.6	6.6	-
August	6.5	6.5	-
September	8.0	8.0	-
October	14	14	35
November	24	24	57
December	22	22	53

- This is a TSS variance limit as described in s. NR 210.07(2), Wis. Adm. Code, where aerated lagoons or waste stabilization ponds are the principal treatment processes. The facility is currently using chemical treatment for phosphorus removal so are no longer eligible for this variance.
- The following two tables are the variable ammonia limits. The daily maximum limits apply year-round.

Effluent pH (s.u.)	Daily Max (mg/L)	Effluent pH (s.u.)	Daily Max (mg/L)
pH ≤ 7.5	No Limit	8.2 < pH ≤ 8.3	9.4
7.5 < pH ≤ 7.6	34	8.3 < pH ≤ 8.4	7.8
7.6 < pH ≤ 7.7	29	8.4 < pH ≤ 8.5	6.4
7.7 < pH ≤ 7.8	24	8.5 < pH ≤ 8.6	5.3
7.8 < pH ≤ 7.9	20	8.6 < pH ≤ 8.7	4.4
7.9 < pH ≤ 8.0	17	8.7 < pH ≤ 8.8	3.7
8.0 < pH ≤ 8.1	14	8.8 < pH ≤ 8.9	3.1
8.1 < pH ≤ 8.2	11	8.9 < pH ≤ 9.0	2.6

Month	Weekly Avg (mg/L)	Monthly Avg (mg/L)
January	15	6.2
February	15	6.2
March	15	14
April	26	24
May	16	12
June	11	8.1
July	7.7	4.5
August	7.5	4.1
September	11	6
October	19	9.0
November	26	12
December	25	11

- This MDV interim limit became effective on 04/01/2021.
- Monitoring only.

Receiving Water Information

- Name: South Branch of O’Neill Creek
- Waterbody Identification Code (WBIC): 1749300
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q₁₀ and 7-Q₂ values are from USGS for Station BK29, where Outfall 001 is located.

Attachment #1

7-Q₁₀ = 0.23 cfs (cubic feet per second)

7-Q₂ = 0.41 cfs

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
7-Q ₁₀ (cfs)	0.29	0.27	0.36	1.89	0.85	0.47	0.29	0.23	0.24	0.26	0.45	0.36
7-Q ₂ (cfs)	0.55	0.54	0.94	3.61	1.57	0.89	0.56	0.44	0.51	0.77	1.04	0.70

- Hardness = mg/L as CaCO₃. This value represents the geometric mean of data from
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%
- Source of background concentration data: Metals data from O’Neill Creek at Grand Ave Bridge is used for this evaluation. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen are described later.
- Multiple dischargers: There is another discharge to O’Neill Creek (Lynn Dairy), however they are not in the immediate vicinity and the mixing zones do not overlap. Therefore, the other dischargers do not impact this evaluation.
- Impaired water status: The immediate receiving water is 303(d) listed as impaired for total phosphorus.

Effluent Information

- Design flow rate(s):
 Annual average = 0.0574 MGD (Million Gallons per Day)
 For reference, the actual average flow from 04/01/2019 – 10/31/2023 was 0.034 MGD including days of zero flow. 0.27 MGD was the average flow excluding days of zero flow.
 The daily maximum limit of 0.288 MGD is used to calculate limits in this evaluation because of the noncontinuous seasonal discharge.
- Hardness = 107 mg/L as CaCO₃. This value represents the geometric mean of data from 11/02/2022 – 11/11/2022.
- 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: Ferric chloride is used for phosphorus removal.
- 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

	Copper µg/L
1-day P ₉₉	17
4-day P ₉₉	10

Attachment #1

	Copper µg/L
30-day P ₉₉	9.7
Mean	5.4
Std	3.6
Sample size	29
Range	<0.718 – 17
Dates	11/07/2000 – 11/06/2023

“<” means that the pollutant was not detected at the indicated level of detection. The mean concentration was calculated using zero in place of the non-detected results.

Effluent Chloride Data

Sample Date	Chloride mg/L	Sample Date	Chloride mg/L	Sample Date	Chloride mg/L
11/2/2022	102	10/19/2023	93	11/6/2023	88
11/8/2022	102	10/24/2023	91	11/9/2023	84
11/15/2022	104	10/31/2023	94	11/13/2023	90
4/11/2022	127	11/3/2023	91		
1-day P ₉₉ = 128 mg/L					
4-day P ₉₉ = 111 mg/L					

The following table presents the average concentrations and loadings at Outfall 002 from 04/01/2019 – 10/31/2023 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameter Averages with Limits

	Average Measurement	Average Mass Discharged
BOD ₅	8.1 mg/L*	16.3 lbs/day
TSS	11.5 mg/L*	
pH field	7.3 s.u.	
Phosphorus	0.53 mg/L	
Ammonia Nitrogen	0.52 mg/L*	
Fecal coliform	79 #/100 mL	
Flow	0.034 MGD	

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

PART 2 – BOD₅ and TSS

In establishing BOD₅ (Biochemical Oxygen Demand) limitations, the primary intent is to prevent a lowering of dissolved oxygen levels in the receiving water below water quality standards as specified in ss. NR 102.04(4)(a) and (b). The 26-lb method is the most frequently used approach for calculating BOD₅ limits when resources are not available to develop a detailed water quality model. This simplified model was developed in the 1970's by the Wisconsin Committee on Water Pollution on the Fox, Wisconsin, Oconto, and Flambeau Rivers. Further studies throughout the 1970's proved this model to be relatively accurate. The model has since then been used by the Department on many occasions when resources are not available to perform a site-specific model. The "26" value stems from the following equation:

$$\frac{26 \text{ lbs/day}}{\text{ft}^3/\text{sec}} * \frac{1 \text{ day}}{86,400 \text{ sec}} * \frac{454,000 \text{ mg}}{\text{lbs}} * \frac{1 \text{ ft}^3}{28.32 \text{ L}} = 4.8 = 2.4 * 2 \text{ mg/L}$$

The 4.8 has been calculated by taking 2.4 which is the number one receives when converting 26 lbs of BOD/day/cfs into mg/L, multiplied by 2.0 which is the change in the DO level. A typical background DO level for Wisconsin waters is 7 mg/L, so a 2 mg/L decrease is allowed in order to meet the 5 mg/L standard for warm water streams. The above relationship is temperature dependent, and an appropriate temperature correction factor is applied. The 26-lb method is based on a typical 24°C summer value for warm water streams. Adjustments for temperature are made using the following equation:

$$k_t = k_{24} (0.967^{(T-24)})$$

Where k_{24} = 26 lbs of BOD/day/cfs

Calculations based on Full Assimilative Capacity at 7Q10 Conditions:

$$Limitation(mg / L) = 2.4(DO_{stream} - DO_{std}) \left(\frac{({}_7Q_{10} + Q_{eff})}{Q_{eff}} \right) (0.967^{(T-24)})$$

Where:

Q_{eff} = effluent design flow = 0.288 MGD

DO_{stream} = background dissolved oxygen = 7 mg/L

DO_{std} = dissolved oxygen criteria from s. NR 102.04(4) = 5.0 mg/L

${}_7Q_{10}$ = 0.23 cfs

T = Receiving water temperature from s. NR 102.25

The previous evaluation calculated the monthly variable BOD₅ limits using effluent DO of 7.0 mg/L. **DO limit is recommended to be included in the reissued permit, expressed as a daily minimum** so that the assumptions of the BOD₅ limits calculations are met.

The current BOD₅ limits are summarized below:

Current BOD₅ Limits

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)	Weekly Avg (lbs/day)
January	21	21	49
February	20	20	48
March	21	21	50
April	30	45	-
May	26	26	61
June	8.1	8.1	
July	6.6	6.6	
August	6.5	6.5	
September	8.0	8.0	
October	14	14	35
November	24	24	57
December	22	22	53

There are not mass limits effective for the months of June – September currently. Mass limits should be included in the reissued permit for these months for antidegradation purposes. If BOD₅ loading increases, this would be considered an increased discharge under ch. NR 207, Wis. Adm. Code. The recommended mass limits are summarized below:

BOD₅ Mass Limits

Month	Weekly Avg (lbs/day)*
June	20
July	16
August	16
September	20

*Mass limit = concentration limit (mg/L) x effluent flow rate (MGD) x 8.34

The TSS limitations are primarily given to maintain or improve water clarity and are not water quality based. However, the Department typically does not require TSS limits lower than 10 mg/L (for the months of June, July, August, and September), otherwise suspended solids limitations are established as the same concentration as the BOD₅ limitations. The recommended TSS limits are shown below:

TSS Limits

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)	Weekly Avg (lbs/day)
January	21	21	49
February	20	20	48
March	21	21	50
April	30	45	-
May	26	26	61
June	10	10	24
July	10	10	24
August	10	10	24
September	10	10	24
October	14	14	35
November	24	24	57
December	22	22	53

PART 3 – 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 Granton.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling for all the detected substances. 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 = 0.18 cfs, (1-Q₁₀ (estimated as 80% of 7-Q₁₀)), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MEAN BACK-GRD.	MAX. EFFL. LIMIT*	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P ₉₉	1-day MAX. CONC.
Chlorine		19.0		26.9	5.38			
Arsenic		340	10	476	95.2	1.38		
Cadmium	170	18.9	0.21	26.7	5.3	<0.19		
Chromium	170	2784	3.46	3933	787	<1.1		
Copper	170	25.6	3.80	34.6			16	17
Lead	170	179	4.64	250	50.1	<4.3		
Nickel	170	735	20	1030	206	1.80		
Zinc	170	191		271	54.1	<5.7		
Chloride (mg/L)		757	8.87	1066			128	127

* 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 = 0.0575 cfs (¼ of the 7-Q₁₀), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD.* mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P ₉₉
Chlorine		7.28		8.22	1.64		
Arsenic		152.2	10	171	34.1	1.38	
Cadmium	175	3.82	0.21	4.29	0.9	<0.19	
Chromium	179	212.82	3.46	240	48.0	<1.1	
Copper	179	17.03	3.80	18.7			9.7
Lead	179	49.15	4.64	54.9	11.0	<4.3	
Nickel	179	85.42	20	94	18.8	1.80	
Zinc	179	200.29		226	45.2	<5.7	
Chloride (mg/L)		395	8.87	445		111	

* 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 = 0.50 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370	0.21	785	157	<0.19
Chromium (+3)	3818000	3.46	8101978	1620396	<1.1
Lead	140	4.64	292	58.4	<4.3
Nickel	43000	20	91226	18245	1.80

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 0.50 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3	10	17.0	3.40	1.38

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 chlorine.

Total Residual Chlorine – Because chlorine is added as a disinfectant, effluent limitations are recommended to assure proper operation of the de-chlorination system. Section NR 210.06(2)(b), Wis. Adm. Code, states, “When chlorine is used for disinfection, the daily maximum total residual chlorine concentration of the discharge may not exceed 0.10 mg/L.” Because the WQBELs are more restrictive, they are recommended instead. Specifically, a daily maximum limit of 27 µg/L is required. The current daily maximum of 38 µg/L was based on two times the ATC and should be replaced by the calculated limit using the 1-Q₁₀ receiving water flow because it is more stringent.

The weekly average effluent limitation of 8.2 µg/L should also be included in the permit because it is more restrictive than the daily maximum limit.

These limits apply when Granton uses chlorine during the disinfection season of May – September. Granton has not used chlorine since 2016 but this limit is recommended to continue in the case it is utilized again in the future.

Mercury – The permit application did not require monitoring for mercury because Granton 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), Wis. Adm. Code.” A review of the past five years of sludge characteristics data reveals that all the sample results are within expected analytical ranges and well below the 17 mg/kg level. There is one available sample available from the current permit term which was reported as <0.0022 mg/kg. Therefore, no mercury monitoring is recommended at Outfall 002.

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based on the type of discharge and known levels of PFOS/PFOA in the source water, PFOS and PFOA monitoring is not recommended. 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.

PART 4 – 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:

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

Where:

A = 0.411 and B = 58.4 for a Warm Water Sport fishery, and
 pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 250 sample results were reported from 04/04/2019 – 10/31/2023. The maximum reported value was 8.66 s.u. (Standard pH Units). The effluent pH was 8.44 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 8.27 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 8.23 s.u. Therefore, a value of 8.23 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 8.23 s.u. into the equation above yields an ATC = 5.4 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 calculated using the the 1-Q₁₀ receiving water low flow 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	11
1-Q ₁₀	7.6

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

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 – WWSF

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	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4

Attachment #1

6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

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 #3.

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from 04/04/2019 – 10/31/2023.

Effluent Ammonia Data

Ammonia Nitrogen mg/L	April - May	June - September	October - March
1-day P ₉₉	26.1		
4-day P ₉₉	17.8		
30-day P ₉₉	13.5		
Mean*	11.4	0.12	0.27
Std	4.62	0.01	0.87
Sample size	16	6	14
Range	<0.13 – 18	<0.13 – 0.197	<0.13 – 2.26

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

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, the following ammonia nitrogen limitations are recommended. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code.

Final Daily Maximum Ammonia Limits

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14

Attachment #1

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

Final Weekly and Monthly Average Limits

Month	Monthly Avg (mg/L)	Weekly Avg (mg/L)
January	6.2	15
February	6.2	15
March	14	15
April	24	26
May	12	16
June	8.1	11
July	4.5	7.7
August	4.1	7.5
September	6	11
October	9.0	19
November	12	26
December	11	25

PART 5 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

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

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

E. coli monitoring is recommended at the same frequency that fecal coliform monitoring is required in the current permit. Because Granton’s permit requires 2/weekly monitoring, the 410 counts/100 mL limit will effectively function as a daily maximum limit unless the facility performs additional monitoring. Any additional monitoring beyond what is required by the permit must also be reported on the DMR as required in the standard requirements section of the permit.

These limits are required during May through September. No changes are recommended to the current recreational period and the required disinfection season.

Interim Limit

At this time, there is no effluent *E. coli* data available to determine if these limits are currently met. The permit will include a compliance schedule to meet these limits. During the compliance schedule, an interim limit applies to prevent back-sliding from the current level of disinfection during the compliance schedule period. Therefore, the current **fecal coliform limit shall be included in the reissued permit as an interim limit of 400 counts/100 mL as a monthly geometric mean.**

PART 6 – 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 Granton currently has a limit of 0.8 mg/L as a monthly average, this limit should be included in the reissued permit. This limit remains applicable unless a more stringent WQBEL is given. In addition, the need for a WQBEL for phosphorus must be considered.

Water Quality-Based Effluent Limits (WQBEL)

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

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.075 mg/L applies for the South Branch of O’Neill Creek.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream phosphorus concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Qs + (1-f) Qe) - (Qs - f Qe) (Cs)] / Qe$$

Where:

WQC = 0.075 mg/L for South Branch of O’Neill Creek

Qs = 100% of the 7-Q₂ of 0.23 cfs

Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code

Qe = effluent flow rate = 0.288 MGD = 0.446 cfs

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

Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall be calculated as a median using the procedures specified in s. NR

Attachment #1

102.07(1)(b) to (c), Wis. Code. All representative data from the most recent 5 years shall be used, but data from the most recent 10 years may be used if representative of current conditions.

A review of all available in stream total phosphorus data from 07/11/2023 – 09/19/2023 (n=3) stored in the Surface Water Integrated Monitoring System database indicates the median background total phosphorus concentration in the South Branch of O’Neill Creek at Division Ave near Granton (SWIMS station ID 103138) is 0.14 mg/L.

Substituting a background concentration above criteria into the limit calculation equation above would result in a calculated limit that is less than the applicable criterion of 0.075 mg/L. However, s. NR 217.13(7), Wis. Adm. Code, specifies that “if the WQBEL calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06, Wis. Adm. Code, for the water body, the effluent limit shall be set equal to the criterion.”

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from 04/04/2019 – 10/31/2023.

Total Phosphorus Effluent Data

	Phosphorus mg/L
1-day P ₉₉	1.7
4-day P ₉₉	1.0
30-day P ₉₉	0.68
Mean	0.53
Std	0.32
Sample size	67
Range	0.13 – 2.3

Reasonable Potential Determination

The calculated WQBEL of 0.075 mg/L is less than the current limit of 0.8 mg/L, so the WQBEL must be included in the permit per s. NR 217.15(2), Wis. Adm. Code.

In accordance with s. NR 217.15(1), Wis. Adm. Code, there is reasonable potential for the discharge to cause or contribute to an exceedance of the water quality criteria. The data suggest that a compliance schedule will be necessary for the facility to meet the given phosphorus limits.

Limit Expression

According to s. NR 217.14(2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.075 mg/L may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.225 mg/L, equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. Code shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

Mass Limits

A mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code, because the discharge is to a surface water that is to or upstream of a phosphorus impaired water. **This final mass limit shall be 0.075 mg/L × 8.34 × 0.288 MGD = 0.18 lbs/day expressed as a six-month average.**

Multi-Discharge Variance Interim Limit

With the permit application, Granton has re-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. The recommended interim limit during the 2nd permit under MDV approval, pursuant to s. 283.16 (6) (a), Wis. Stats., is 0.6 mg/L as a monthly average. A compliance schedule may be appropriate to meet this interim limit but compliance with 0.6 mg/L shall be no later than the end of the reissued permit. The previous interim limit of 0.8 mg/L should not be exceeded during the compliance schedule.

PART 7 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s. NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from 04/03/2019 – 10/31/2023.

The table below summarizes the maximum temperatures reported during monitoring from 04/21/2022 – 11/18/2022.

Monthly Temperature Effluent Data & Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(°F)
JAN				
FEB				
MAR				
APR	46	46	56	83
MAY	50	51	66	85
JUN				
JUL			83	87
AUG			83	86

Attachment #1

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(°F)
SEP			75	85
OCT			63	84
NOV	45	51	50	82
DEC				

Reasonable Potential

Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
 - (a) The highest recorded representative daily maximum effluent temperature
 - (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub-lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:
 - (a) The highest weekly average effluent temperature for the month.
 - (b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

Since this facility provides long hydraulic detention times, elevated effluent temperatures are unlikely and discharge temperatures are expected to be similar to ambient conditions for the months where there was flow but no temperature data available.

Based on the available effluent data no effluent limits are recommended for temperature. The complete thermal table used for the limit calculation is in Attachment #4. **Monitoring is recommended to continue for one year in the reissued permit.**

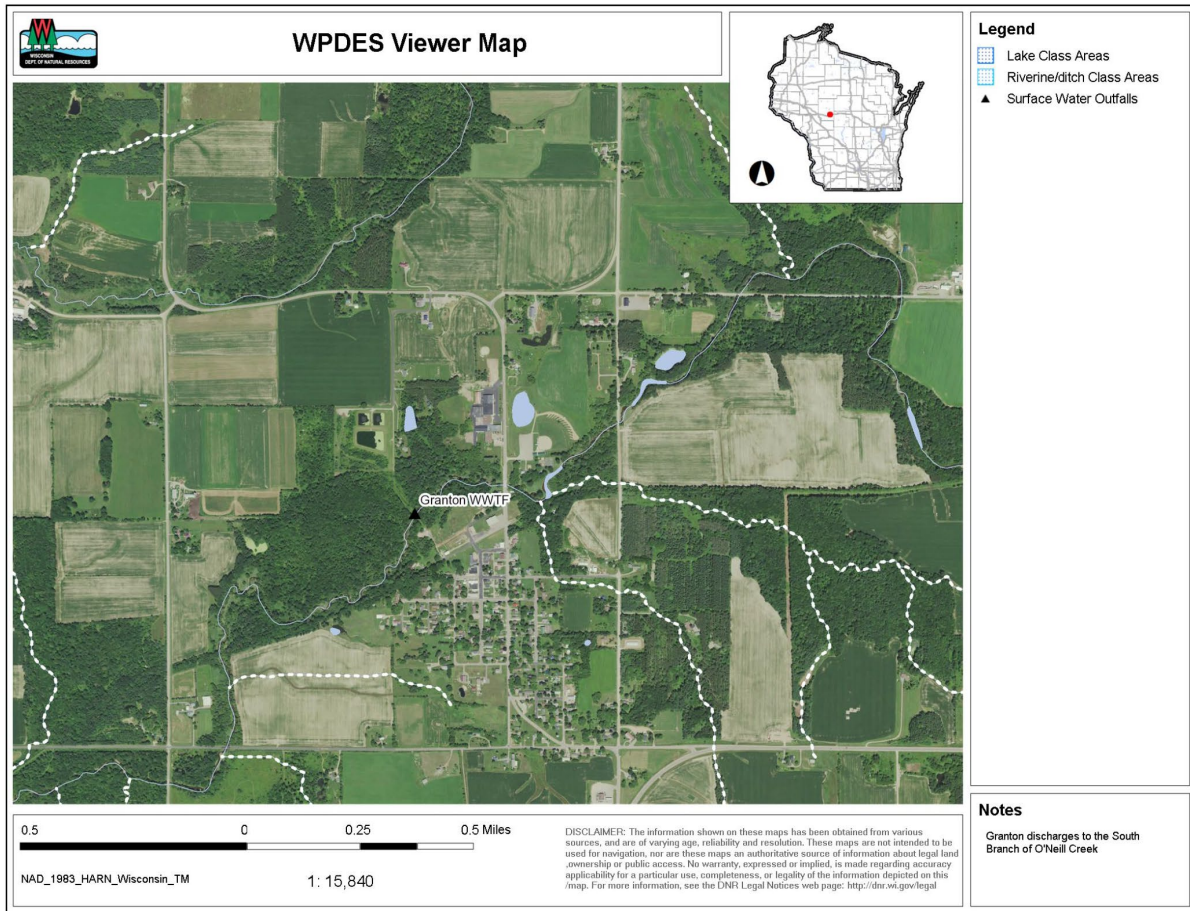
PART 6 – WHOLE EFFLUENT TOXICITY (WET)

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)*.

Attachment #1

Guidance in Chapter 1.11 of the WET Guidance Document (WET Testing of Minor Municipal Discharges) was consulted. This is a minor municipal discharge (< 1.0 MGD) comprised solely of domestic wastewater, with no history of WET failures and no toxic compounds detected at levels of concern. Ferric chloride is used for phosphorus removal but Granton has submitted an approved SOP. Therefore, no WET testing is recommended at this time because of the low risk in effluent toxicity.

Attachment #2



2007 Ammonia Limitations Calculations

The Department recently revised its surface water quality standards for ammonia. These revisions included the development of acute and chronic toxicity criteria and associated effluent limits for all waters.

The new criteria for full fish and aquatic life waters state that the thirty-day average concentration of total ammonia nitrogen (in mg N/L) should not exceed, more than once every three years on the average, the chronic criterion (CTC) calculated using the following equations:

When early life stages are present:

$$CTC = 0.854 * \left(\frac{0.0676}{1 + 10^{7.688 - \text{pH}}} + \frac{2.912}{1 + 10^{\text{pH} - 7.688}} \right) * \text{MIN}(2.85, 1.45 * 10^{0.028 * (25 - T)})$$

When early life stages are absent:

$$CTC = 0.854 * \left(\frac{0.0676}{1 + 10^{7.688 - \text{pH}}} + \frac{2.912}{1 + 10^{\text{pH} - 7.688}} \right) * 1.45 * 10^{0.028 * (25 - T)}$$

Where:

pH = receiving water pH in standard units

T = Stream Temperature in °C

In addition to the 30-day chronic criteria, the highest four-day average within that 30-day period should not exceed 2.5 times the CTC.

Limitations are then based on mass balance approach:

$$(\text{NH}_{3\text{T}})_{\text{effluent}} = \frac{Q_{\text{mix}} * \text{WQC} - Q_{\text{S}} * C_{\text{S}}}{Q_{\text{E}}}$$

where: $(\text{NH}_{3\text{T}})_{\text{effluent}}$ = Total ammonia limitation

C_{S} = Background total ammonia concentration

WQC = Water quality criteria

Q_{S} = Allowable dilution (25 to 100% of appropriate stream flow)

Q_{E} = Effluent flow

$Q_{\text{mix}} = Q_{\text{S}} + Q_{\text{E}}$

These limitations are applicable to warm and cold water fisheries, the only difference being when the early life stages of fish are considered to be present. In streams where burbot are potentially present, early life stages of fish may be found from January through September. All calculated limits are rounded to two significant digits.

Attachment #3

AMMONIA (as N) LIMITS

Effluent Flow (mgd): 0.288 (200 gpm)

Effluent Flow (cfs): 0.446

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
4Q3 (cfs)												
Estimated 7Q10 (cfs)	0.29	0.27	0.36	1.89	0.85	0.47	0.29	0.23	0.24	0.26	0.45	0.36
30Q5 (cfs)	0.41	0.4	3.4	6.67	2.59	1.28	0.63	0.48	0.51	0.59	0.91	0.59
7Q2 (cfs)												
Ammonia (mg/L) (1)	0.17	0.17	0.17	0.06	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0.17
Temperature (deg C) (2)	1	1	4	7.8	14.4	21	23	22	16	10	4	2
pH (std. units) (3)	7.3	7.3	7.3	7.3	7.79	7.79	7.79	7.79	7.79	7.3	7.3	7.3
% of river flow used:	25	25	25	25	50	100	100	100	100	25	25	25
Reference weekly flow:	0.073	0.068	0.090	0.473	0.425	0.470	0.290	0.230	0.240	0.065	0.113	0.090
Reference monthly flow:	0.1	0.1	0.9	1.7	1.3	1.3	0.6	0.5	0.5	0.1	0.2	0.1
CRITERIA (in mg/L):												
4-day Chronic (@ backgrd. pH):												
early life stages present	12.7	12.7	12.7	12.7	8.1	5.3	4.7	5.0	7.3	12.7	12.7	12.7
early life stages absent	20.6	20.6	20.6	19.6	8.1	5.3	4.7	5.0	7.3	17.0	20.6	20.6
30-day Chronic (@ backgrd. pH)												
early life stages present	5.1	5.1	5.1	5.1	3.2	2.1	1.9	2.0	2.9	5.1	5.1	5.1
early life stages absent	8.2	8.2	8.2	7.8	3.2	2.1	1.9	2.0	2.9	6.8	8.2	8.2
EFFLUENT LIMITS (in mg/L):												
Weekly average												
early life stages present	15	15	15	26	16	11	7.7	7.5	11			
early life stages absent										19	26	25
Monthly average												
early life stages present	6.2	6.2	14	24	12	8.1	4.5	4.1	6			
early life stages absent										9.0	12	11

(1) Default Data

(2) Default Data except for November and April

(3) O'Neil Creek Data except for May-September, where default values are used

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

Facility:	Granton WWTF	7-Q₁₀:	0.23 cfs	Temp Dates	
Outfall(s):	002	Dilution:	25%	Start:	04/21/22 04/03/19
Date Prepared:	12/11/2023	f:	0	End:	11/18/22 10/31/23
Design Flow (Q_e):	0.29 MGD	Stream type:	Small warm water sport or forage fish co		
Storm Sewer Dist.	0 ft	Q_s:Q_e ratio:	0.1 :1		
		Calculation Needed?	YES		

Month	Water Quality Criteria			Receiving Water Flow Rate (Q _s) (cfs)	Representative Highest Effluent Flow Rate (Q _e)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	T _a (default) (°F)	Sub-Lethal WQC (°F)	Acute WQC (°F)		7-day Rolling Average (Q _{esl}) (MGD)	Daily Maximum Flow Rate (Q _{ea}) (MGD)		Weekly Average (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	33	49	76	0.23	0.000	0.000	0				
FEB	34	50	76	0.23	0.000	0.000	0				
MAR	38	52	77	0.23	0.000	0.000	0				
APR	48	55	79	0.23	0.280	0.280	0	46	46	56	83
MAY	58	65	82	0.23	0.260	0.268	0	50	51	66	85
JUN	66	76	84	0.23	0.000	0.000	0				
JUL	69	81	85	0.23	0.266	0.280	0			83	87
AUG	67	81	84	0.23	0.280	0.280	0			83	86
SEP	60	73	82	0.23	0.280	0.280	0			75	85
OCT	50	61	80	0.23	0.237	0.280	0			63	84
NOV	40	49	77	0.23	0.275	0.280	0	45	51	50	82
DEC	35	49	76	0.23	0.000	0.000	0				

Mail Complete Application to:
 Wisconsin Department of Natural Resources
 Permits Section-WQ/3
 PO Box 7921
 Madison, WI 53707-7921

**Phosphorus Multi-Discharger
 Variance Application for Municipal
 Facilities** - s. 283.16, Wis. Stats.
 Form 3200-150 (R 03/17) 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 2 0 8 8 5				Contact Name Joshua Opelt			
Facility Name Village of Granton				Title Wastewater Operator			
Facility Street Address 317 Hill Street				Address 210 Maple St. P.O Box 69			
City Granton		State WI	ZIP Code 54436	City Granton		State WI	ZIP Code 54436
Receiving Water S. Branch O'Neil Creek		County Clark		Phone No. (incl. area code) 715-437-4237		Fax Number	
Source of Water Supply Village Water System		Average Discharge Flow Rate .26 MGD		Email Address vgwwt@hotmail.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? 1
 No

Received By:

SEP 25 2023

Water Quality

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:

The existing WWTF is a 3 cell aerated pond system with a seasonal discharge. The facility would need to be replaced with a mechanical treatment facility with year round discharge so that tertiary filtration could be economically added. Chemical feed and effluent polishing would be necessary.

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

- | | | | |
|------------------------------|---|------------------------------|---|
| <input type="checkbox"/> Jan | <input checked="" type="checkbox"/> Apr | <input type="checkbox"/> Jul | <input checked="" type="checkbox"/> Oct |
| <input type="checkbox"/> Feb | <input checked="" type="checkbox"/> May | <input type="checkbox"/> Aug | <input checked="" type="checkbox"/> Nov |
| <input type="checkbox"/> Mar | <input type="checkbox"/> Jun | <input type="checkbox"/> Sep | <input type="checkbox"/> 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	
2	.49	13	04/10/2022	11/30/2022

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? 5.09 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: _____

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:

In order to comply with the proposed phosphorus limit, the village would need to construct a new WWTF, including tertiary filtration. It is likely that a watershed based component would also be needed to achieve full compliance.

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? \$ 7,200,000

Source of cost projection:

Final Compliance Alternatives Plan for the Village of Granton, Dec. 2016.

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? _____ 281 lbs/year
 Unknown at this time

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

Describe:

The operator is part time, and the village board is a volunteer position. There is no interest in trying to manage an adaptive management or water quality trading program.

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)
Village of Granton	Clark	351	188	\$56,563.00

Non-Residential Customers:

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

21 %

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.

Granton Public School, Granton Ball Park, Granton Fire Station, Grassland Vet, several churches, Granton Hardware, Rogers Grocery, Maple Works Cafe, Granton Community Center, Granton Post Office, Citizens State Bank, Dave's Barber Shop.

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? $\$375.99 \text{ annual household user charge} \div \$56,563$

0.66 %

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?

6

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 | 2 | 0 | 8 | 8 | 5


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

Form 3200-150 (R 03/17)

Page 5 of 5

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 Village President
John Garbisch	
Signature of Official 	Date Signed 9/20/2023



10/25/2023

John Garbisch, Village President
PO Box 69
Granton, WI 54436

Subject: Conditional approval of a multi-discharger phosphorus variance
Receiving Stream: O'Neill Creek in Clark County
Permittee: Village of Granton, WPDES WI-0020885

Dear Mr. Garbisch:

In accordance with s. 283.16 of the Wisconsin Statutes, you have requested coverage under Wisconsin's multi-discharger phosphorus variance for the Village of Granton Wastewater Treatment Facility in an application dated 9/25/2023. 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 attention and interest in Wisconsin's multi-discharger phosphorus variance. Should you have further questions regarding this matter, please contact me at (608) 400 – 5596 or by email at matthew.claucherty@wisconsin.gov.

Sincerely,

Matt Claucherty, MDV Point Source Coordinator
Bureau of Water Quality

e-cc Joshua Opelt, Village of Granton
Holly Heldstab, WDNR
Jenna Monahan, WDNR
Tim Elkins, EPA Region 5
Micah Bennett, EPA Region 5

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

Village of Granton

WPDES Permit Number WI- 0 0 2 0 8 8 5	County Clark
---	-----------------

1. Did the point source apply for the MDV at the appropriate time?	<input checked="" type="radio"/> Yes <input type="radio"/> No. <i>STOP- facility not eligible at this time.</i>	See Questions 1-3.
2. This operation is (check one):	<input type="radio"/> New or relocated outfall. <i>STOP- facility not eligible.</i> <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. <i>STOP- facility not eligible.</i>	<i>Apply County information to Appendix H. Additional information provided in Q7 on municipal form & Q7-8 on industrial form.</i>
4. The secondary indicator score for the county (counties) the discharge is located is:	<u>3</u>	<i>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.</i>
5. Is a major facility upgrade required to comply with phosphorus limits?	<input checked="" type="radio"/> Yes <input type="radio"/> No. <i>STOP- facility not eligible.</i>	<i>See Q8 on municipal form/Q9 on industrial form.</i>
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	<i>Consider checking with limit calculator. If this does not match information in application, the application should be updated prior to approval.</i>

7. What is the current effluent level achievable?				
Outfall Number(s) 002	Conc. (mg/L) 0.45	Method for calculation: <input checked="" type="radio"/> 30-day P99 <input type="radio"/> Other, specify: _____	Does this concur with application? <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?
 0.6 mg/L as a monthly average, pursuant to s. 283.16(6)(a), Wis. Stats.
 Target Value = 0.2 mg/L

Provide Rationale:

Total phosphorus results for the past three years (10/1/2020 - 9/30/2020, n=38) yield a 30-day P99 value of 0.45 mg/L. This value has been achieved in the past, but some months have exceeded that level as well. The interim limit will be reevaluated in future permit terms should another variance be applied.

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 style="text-align: right;">Source:</p>	<p><u>\$ 7,200,000.00</u></p> <p>MDV Application (cost for facility replacement) See note below regarding costs used in economic determination</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>
<p>Comments on planning efforts: The December 2016 Final Compliance Alternatives Plan, prepared by MSA Professional Services Inc., evaluated a number of alternatives and provided site specific costs for major upgrades to comply with the WQBEL. Watershed based approaches such as adaptive management and water quality trading were evaluated. Adaptive management may not be feasible due to magnitude of receiving water (Black River Mainstem) and trading efforts have been limited due to WWTF staffing capacity. T Regionalization was ruled out due to costs associated with infrastructure to reach the nearest receiving facility (Neillsville, 8.5 miles away). Treatment technologies to meet the WQBEL included Ovivo ultrafiltration and CoMag ballasted clarification. A site specific cost estimate was provided for each, with the lowest cost option, CoMag ballasted clarification, used in the economic demonstration. Over the prior permit term, Granton has optimized phosphorus treatment via chemical feed to the lagoon system. The need for filtration is still present, however, and the 2016 treatment analyses are generally still valid.</p>		
<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. <i>STOP- facility not eligible.</i></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:

While the MDV application cites compliance costs of \$7.2M (for an entirely new facility), costs for filtration should be evaluated more directly as a conservative approach to economic eligibility. The 2016 plan provided a specific cost estimate for: "CoMag XP Series 300K Model". This was the lowest cost upgrade option to meet the WQBEL, with capital costs of \$2,736,000.00 and O & M costs of \$24,240.00. Using the ENR construction cost index, increases between May 2016 and May 2023 amount to a 38.6% total increase. Therefore, a conservative compliance cost is \$3,792,096.00 (capital) and \$33,596.64 (O&M increase). A 20-year CWFPP loan at 2.1% interest would result in annual payments of \$232,364 with total annual costs at \$265,961 including O&M. Applying a 21% nonresidential use rate, costs borne by households would be \$210,108.91. Divided amongst 188 customer households, an annual average per user rate increase would be \$1,117.60. With current rates averaging \$375.99, future rates would amount to \$1,493.59. This value is 2.6% of Granton's \$56,563 median household income. In Clark County with a secondary indicator score of 3, sewer rates at 1% of MHI met the primary screener. Granton 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

<p>16. MDV Plan Number:</p> <p><i>Note: This is for tracking purposes. Contact Statewide Phosphorus Implementation Coordinator for the plan number.</i></p>	<p>_____</p>
<p>17. Did the point source complete Form 3200-148?</p>	<p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p>
<p>18. Is the project area in the same HUC 8 watershed as the point of discharge?</p>	<p><input type="radio"/> Yes</p> <p><input type="radio"/> No. <i>STOP- Watershed plan must be updated.</i></p>
<p>19. What is the annual offset required?</p> <p><i>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.</i></p>	<p>_____</p>
<p>20. Does the plan ensure that the annual load is offset annually?</p>	<p><input type="radio"/> Yes</p> <p><input type="radio"/> No. <i>STOP- Watershed plan must be updated.</i></p>
<p>21. Are projects occurring on land owned/operated by a CAFO or within a permitted MS4 boundary?</p> <p><input type="radio"/> Yes. <i>Work with appropriate DNR staff to ensure projects are not working towards other permit compliance.</i></p> <p><input type="radio"/> No.</p>	
<p>22. Are other funding sources being used as part of the MDV watershed project?</p> <p><input type="radio"/> Yes. <i>Work with appropriate DNR staff to ensure that funding sources can be appropriately used in the plan area.</i></p> <p><input type="radio"/> No.</p>	
<p>23. Do you have any concerns about the watershed project?</p> <p><i>Note: Coordinate with other DNR staff as appropriate.</i></p>	<p><input type="radio"/> Yes. <i>STOP- Watershed plan must be updated.</i></p> <p><input type="radio"/> No.</p>

Comments:

Section 5. Payment to the County(ies)

24. At this time, the appropriate per pound payment is: \$ 62.65

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

Additional Justification (if needed):

Note that application question number 22 incorrectly provided the primary screener of 0.66% based on current sewer user rates only.

Certification

Table with 2 columns: Preparer Name, Title, Signature of Preparer, Date. Preparer: Matt Claucherty, Title: Water Resources Management Specialist, Date: 10/25/2023.

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...

Save