

Permit Fact Sheet

General Information

Permit Number	WI-0031917-10-0
Permittee Name and Address	VILLAGE OF LUBLIN P.O. BOX 1, LUBLIN, WI 54447
Permitted Facility Name and Address	Village of Lublin Burma Drive, Lublin, Wisconsin
Permit Term	October 01, 2026 to September 30, 2031
Discharge Location	Burma Drive, East of Lublin (NE¼ NW¼ of Section 23; T30N-R3W)
Receiving Water	A dry run tributary to the North Fork Eau Claire River within the North Fork Eau Claire River watershed in the Lower Chippewa River Drainage Basin, Taylor County.
Stream Flow (Q _{7,10})	0
Stream Classification	UT: Limited Aquatic Life (LAL) community. Although the dry run tributary is not listed in ch. NR 104, Wis Adm. Code, it does meet the definition of LAL under ch. NR 102.04(3)(b), Wis. Adm. Code. North Fork Eau Claire River: Warmwater Sport Fish (WWSF) community. All surface waters are within the ceded territory, non-public water supplies and recreational use.
Discharge Type	Existing intermittent
Annual Average Design Flow (MGD)	0.02 MGD
Industrial or Commercial Contributors	No
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Village of Lublin owns and operates a domestic wastewater treatment system. The plant designed to treat 20,000 gallons per day, currently treats an average of 10,000 gallons per day. The facility consists of two stabilization ponds operated one after another (in series). Within these ponds naturally occurring bacteria and organisms already present in the wastewater metabolize and reduce organic matter. The cleaned wastewater (effluent) is authorized to be discharged to a dry run tributary approximately 0.5 miles upstream of the North Fork Eau Claire River in Taylor County.

Substantial Compliance Determination

There have been several minor violations of effluent limits and one sample collected late, however, the facility has taken the necessary steps to correct their actions and nothing further is required.

After a desktop review of all discharge monitoring reports, CMARs, land app reports, compliance schedule items, and a site visit on 06/26/26, by Arthur Ryzak, WDNR, the Village of Lublin has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	INFLUENT An average of 0.010 MGD (2021 – 2025)	Representative grab samples shall be collected at the lift station wet well.
001	EFFLUENT An average of 0.092 MGD during periods of discharge with an average of 52 days of discharge each year. (2021 – 2025 data)	Grab samples shall be collected after the weir in the effluent manhole.
002	SLUDGE Biosolids have not been removed since 1980 and is not anticipated to be removed this permit term.	Representative samples shall be collected at various locations and depths that are combined for analysis. Sludge shall be managed according to ch. NR 204, Wis. Admin. Code.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT TO PLANT

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

Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term, and no changes were required in this permit section.

Explanation of Limits and Monitoring Requirements

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

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Monthly Avg	20 mg/L	Weekly	Grab	
BOD5, Total	Weekly Avg	30 mg/L	Weekly	Grab	
Suspended Solids, Total	Monthly Avg	20 mg/L	Weekly	Grab	
Suspended Solids, Total	Weekly Avg	30 mg/L	Weekly	Grab	
pH Field	Daily Max	9.0 su	Weekly	Grab	
pH Field	Daily Min	6.0 su	Weekly	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	Weekly	Grab	
Phosphorus, Total	Monthly Avg	2.5 mg/L	Weekly	Grab	INTERIM LIMIT expires September 30, 2030
Phosphorus, Total	Monthly Avg	0.225 mg/L	Weekly	Grab	FINAL LIMIT effective October 1, 2030.
Phosphorus, Total	6-Month Avg	0.075 mg/L	Weekly	Grab	FINAL LIMIT effective April 1, 2031. Compliance is measured each April and October.
Phosphorus, Total	6-Month Avg	0.085 lbs/day	Weekly	Calculated	FINAL LIMIT effective April 1, 2031. Compliance is measured each April and October.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.7 mg/L	Weekly	Grab	The limit is effective during the month of May.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	Weekly	Grab	Report the daily maximum ammonia result in the Nitrogen, Ammonia Total column of the eDMR. See the Ammonia Limitation permit section.
Nitrogen, Ammonia Variable Limit		mg/L	Weekly	Grab	Use the daily pH result to look up the applicable ammonia limit in the permit Variable Ammonia Limitation table and report

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					the limit in the Ammonia Variable Limit column on the eDMR.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	Grab	See the Nitrogen Series Monitoring permit section for testing schedule.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	Grab	See the Nitrogen Series Monitoring permit section for testing schedule.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Total Nitrogen = Total Nitrogen Kjeldahl (mg/L) + Nitrite + Nitrate Nitrogen (mg/L). See the Nitrogen Series Monitoring permit section for testing schedule.

Changes from Previous Permit

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

- The **flow** limit has been removed this permit term.
- **BOD5** and **Total Suspended Solids** limits have been replaced by effluent limits as described in s. NR 104.02(3)(b), Wis. Adm. Code.
- The final **WQBEL Phosphorus limits** will become effective this permit term. Once the Water Trading (WQT) Plan has been submitted and approved the permit will be modified to include phosphorus parameters needed to comply with WQT.
- A daily maximum **ammonia** limit is required to protect water quality. The permittee was allowed to choose between variable limit based on pH or a single limit of 5.1 mg/L. The permittee chose the variable limit which has been added this permit term.
- A monthly average **ammonia** limit was added during the month of May in accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated February 27, 2026.

Discharge season – In previous permit terms, the facility was authorized to discharge on a fill-and-draw basis during March 15th through May 30th and September 1st through November 30th as part of a variance per s. NR 104.02(4)(c) Wis. Adm. Code. A re-evaluation has determined that not all of the required conditions identified in code are applicable and the fill-and-draw discharge schedule is no longer required. The permittee may continue to discharge on a fill-and-draw basis for extended discharge periods. Please note, at the next permit reissuance, limits may change based on all collected

effluent data. All samples shall be taken during normal operating conditions; therefore, monitoring is required only during periods of discharge.

Flow - In the previous permit issuance the facility was given alternative limits for flow and BOD5 per s. NR 104.02(4)(c), Wis. Adm. Code. Re-evaluation has determined that not all of the required conditions identified in code can be met, therefore, the flow limit and specified discharge season have been removed

BOD₅ and Total Suspended Solids (TSS) - In the previous permit issuance the facility was given variance limits for flow, BOD₅ and TSS per s. NR 104.02(4)(c), Wis. Adm. Code. Re-evaluation has determined that not all of the required conditions are met and variance limits are not applicable. Limits for a Limited Aquatic Life community are now effective (Table 2, s. NR 104.02(3)b Wis. Adm. Code).

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

3 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
002	B	Liquid	Sludge removal is not anticipated this permit term. If removal is needed see the land application and schedule sections of the permit for more information.			
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? The community's water supply is provided by private wells. Radium-226 levels are unknown since private water wells are not required to be tested for radium, but Radium-226 has not been found to be an issue in Taylor County.						
Is a priority pollutant scan required? No						

3.1 Sample Point Number: 002- LAGOON SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Once	Composite	
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	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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	
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Per Application	Composite	
Phosphorus, Total		Percent	Per Application	Composite	
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	
Potassium, Total Recoverable		Percent	Per Application	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	See the Sludge Analysis for PCBs permit section.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	See the Sludge Analysis for PCBs permit section.
PFOA + PFOS		ug/kg	Once	Calculated	Report the sum of PFOA and PFOS. See PFAS permit sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					PFAS List. See PFAS Permit Sections for more information.

Changes from Previous Permit:

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

- **List 1** (Metals), **PCBs** and **PFAS** monitoring is required during the 2028 calendar year.
- Because it’s recommended that **List 2** (Nutrients) are monitored with List 1 monitoring, they have been added to the table.
- Due to changes within the **land application forms**, the 3400-049 (“Characteristics Report”), 3400-052 (“Other Methods of Disposal”) and 3400-055 (Annual Land Application”) will need to be submitted each year.
- Monitoring **PFAS** is required once pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

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

List 2 Nutrient monitoring – Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in 2028. 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.

- Sludge analysis during the second year of the permit term has been included. There are check boxes available on the electronic forms to identify if desludging didn’t occur.
- Sludge characteristics report (3400-049) – at the top of the form check “yes” or “no” in the box identifying if any land application occurred that year. Complete the form if required or identify the year samples will be or have been taken in the comments section.
- 3400-052 (“Other Methods of Disposal”) and 3400-055 (“Annual Land Application”) - The reports are technically 2 separate forms that are now combined in one location but separated onto two different tabs. If you answer “No” to

both listed questions the forms are complete. If you need to answer “Yes” to either question the corresponding form tabs will go from gray to blue indicating information can be entered on the report.

PFAS- The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS” should be followed

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

4 Schedules

4.1 Sludge Mapping

Required Action	Due Date
Map Sludge Depth: Sludge depth measurements should be taken across the ponds. A map showing the sludge profile shall be prepared and submitted.	12/31/2028

Explanation of Schedule

Map Sludge Depth – The depth and distribution of the sludge in the ponds is not currently known. This information is important to determine the effectiveness of the ponds and estimate when sludge removal is needed.

4.2 Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus

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

Required Action	Due Date
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.) Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	09/30/2027
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41, Stats. 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. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	12/31/2027

Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	09/30/2028
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	09/30/2029
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	08/31/2030
Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	09/30/2030

Explanation of Schedule

Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus – In accordance with NR 217.17 Wis. Adm. Code a 9-year schedule to achieving the final water quality-based effluent limits was added in the previous permit. This term the remaining four years of the schedule have been included. The permittee has indicated they will be using water quality trading (WQT) to meet the WQBEL phosphorus limits. Once the WQT plan has been submitted and approved, this permit will be modified and the remainder of this schedule removed. If WQT doesn't occur the permittee shall complete the remaining actions by the due dates.

4.3 Sludge Management Plan

Required Action	Due Date
Submit a Sludge Management Plan: The permittee shall submit an update to the 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 draw-down; 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 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. The plan is due at least 60 days prior to desludging.	

Explanation of Schedule

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

Attachments

Water Flow Schematic created November 2015

Water Quality Based Effluent Limits memo dated February 27, 2026

Justification Of Any Waivers From Permit Application Requirements

A decision has been made not to require effluent monitoring for metals in the application because:

1. The very low design flow (0.020 MGD) and low actual flows (an average of 0.010 MGD) from this facility.
2. The wastewater is all domestic with no industrial contributors.
3. The metals in the sludge are well below high quality limits which correlates to low metal concentrations in the effluent.
4. The village does not have a public water supply system and does not have any control over corrosivity in the influent wastewater.

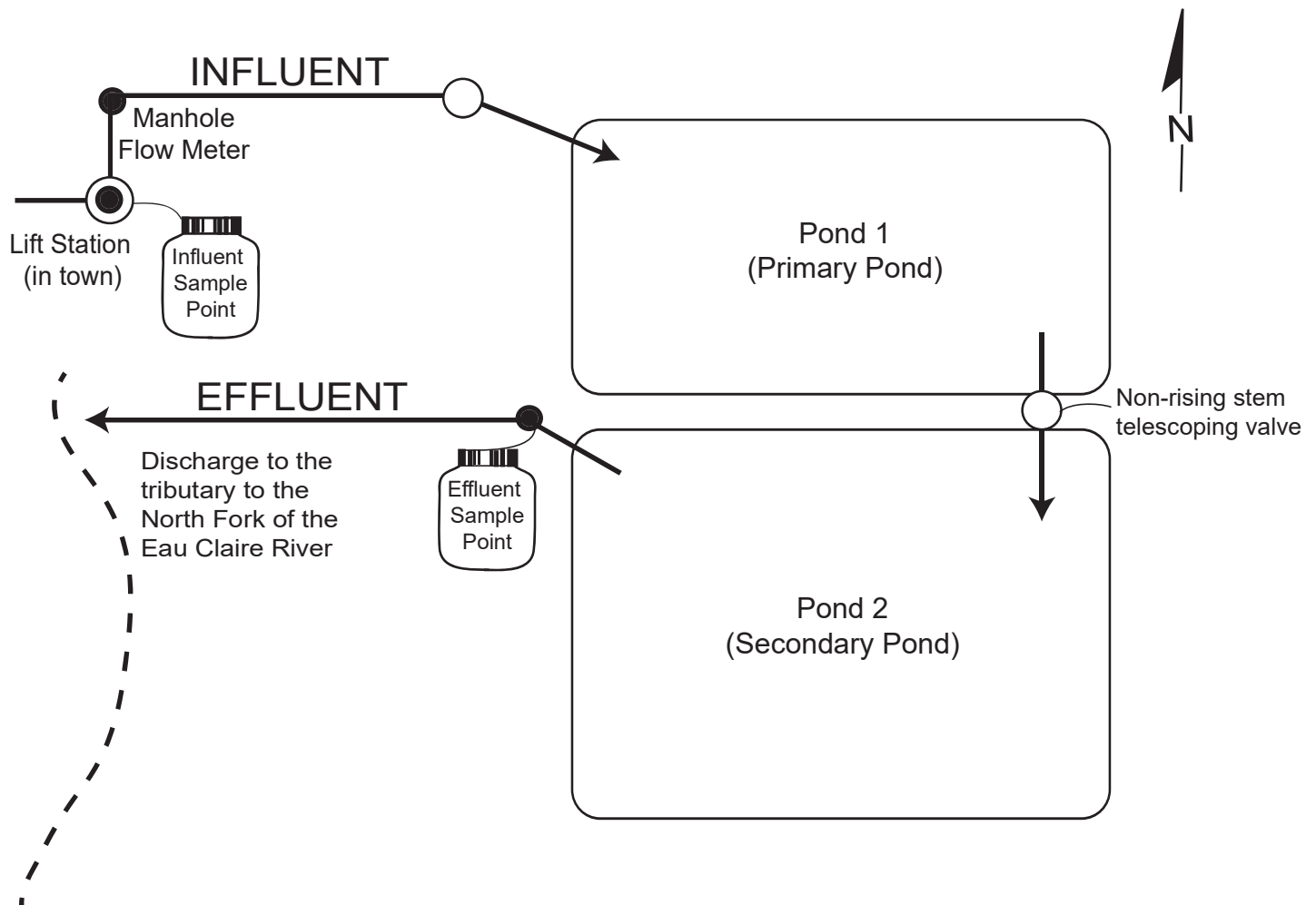
Prepared By: Sheri A. Snowbank

Wastewater Specialist

Date: April 6, 2026

VILLAGE OF LUBLIN Wastewater Treatment Facility

The Lublin wastewater treatment facility is a fill and draw facility consisting of two stabilization ponds operated in series. Effluent is discharged to a dry run tributary to the North Fork of the Eau Claire River in Taylor County. The diagram below shows the treatment units and sampling locations.



-  Control Structures
-  Sample Locations

NOT TO SCALE

Flow: 0.020 MGD
BOD: 42.4 lbs/day
Suspended Solids: 50 lbs/day
Construction Year: 1980

CORRESPONDENCE/MEMORANDUM**State of Wisconsin**

DATE: February 27, 2026

TO: Sheri Snowbank – NOR/Spooner Service Center

FROM: Michael Polkinghorn – NOR/Rhineland Service Center

SUBJECT: Water Quality-Based Effluent Limitations for the Village of Lublin
WPDES Permit No. WI-0031917-10-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable) for the discharge from the Village of Lublin in Taylor County. This municipal wastewater treatment facility (WWTF) discharges to a dry run tributary to the North Fork Eau Claire River, located in the North Fork Eau Claire Watershed in the Lower Chippewa River Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

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

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD ₅			30 mg/L	20 mg/L		2
TSS			30 mg/L	20 mg/L		2
pH	9.0 s.u.	6.0 s.u.				2, 3
Dissolved Oxygen		4.0 mg/L				2, 3
Ammonia Nitrogen Year round	5.1 mg/L or Variable					4
May				4.7 mg/L		
Phosphorus						
MCL				2.5 mg/L		5
Final				0.225 mg/L	0.075 mg/L 0.085 lbs/day	
TKN, Nitrate+Nitrite, and Total Nitrogen						3, 6

Footnotes:

1. Monitoring whenever the discharge occurs.
2. The updated BOD₅ and TSS limits are based on the Limited Aquatic Life (LAL) community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code. Data indicates the facility can meet the limits at permit reissuance, and no compliance schedule is recommended.
3. No changes from the current permit.
4. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit. The Village of Lublin shall notify the Department if the single limit or the variable limits based on effluent pH are preferred.

Daily Maximum Ammonia Nitrogen Limits – LAL

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

5. A water quality trading plan is currently being prepared by the facility as an alternative compliance option to offset any total phosphorus discharged from this outfall that exceed the phosphorus WQBELs. The phosphorus WQBELs may be expressed as computed compliance limits, but the minimum control level (MCL) limit must be met at the point of discharge.
6. 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. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).

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

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

Attachments (3) – Narrative, discharge area map & thermal table.

PREPARED BY: Michael A. Polkinghorn – Water Resources Engineer

E-cc: Arthur Ryzak, Regional Wastewater Engineer – NOR/Ladysmith Service Center
Michelle BalkLudwig, Regional Wastewater Supervisor – NOR/Spooner Service Center
Diane Figiel, Water Resources Engineer – WY/3
Nate Willis, Wastewater Engineer – WY/3

Water Quality-Based Effluent Limitations for Village of Lublin

WPDES Permit No. WI-0031917-10-0

Prepared by: Michael A. Polkinghorn

PART 1 – BACKGROUND INFORMATION

Facility Description

The Village of Lublin owns and operates a municipal WWTF constructed in 1980. Primary and secondary treatment consists of two lagoons operated in series where naturally occurring microorganisms present in the wastewater break down organic matter. Effluent is discharged on a noncontinuous basis via Outfall 001 to a dry run tributary for approx. 0.5 miles until reaching the North Fork Eau Claire River. Discharge occurs during March 15th – May and September – November.

Discussion with the compliance engineer indicated the facility would likely benefit with being able to discharge in June during the spring season. Because the discharge timeframe currently controlled by the variance in s. NR 104.02(4)(c), Wis. Adm. Code, is planned to be removed for the reissued permit term, the facility may default on discharge timeframes with respect to their operation. **Any existing and recommended permit limits for the reissued permit term (except ammonia nitrogen), are recommended during June or any other months outside of the historic discharge timeframe.**

Attachment #2 is a discharge area map of Outfall 001 and the area where effluent flows into the North Fork Eau Claire River.

Existing Permit Limitations

The current permit, expiring on 09/30/2026, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate March 15 th – May September October – November	0.24 MGD 0.02 MGD 0.06 MGD					1
BOD ₅			45 mg/L	30 mg/L		1
TSS			45 mg/L	30 mg/L		1
pH	9.0 s.u.	6.0 s.u.				1
Dissolved Oxygen		4.0 mg/L				1
Ammonia Nitrogen	9.8 mg/L					
Phosphorus						2
Interim				2.5 mg/L		
Final				0.225 mg/L	0.075 mg/L	

Attachment #1

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
					0.043 lbs/day	
TKN, Nitrate+Nitrite, and Total Nitrogen						3

Footnotes:

1. These are variance limits as described in s. NR 104.02(4)(c), Wis. Adm. Code, applicable to fill and draw or domestic waste stabilization pond facilities discharging to a Limited Aquatic Life (LAL) or Limited Forage Fish (LFF) community receiving water. In absence of this variance, limits based on the LAL or LFF community of the receiving water as described in s. NR 104.02(3)(a) or (b), Wis. Adm. Code, shall apply.
2. A compliance schedule is in the current permit to meet the final WQBELs by 09/30/2030.
3. 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. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total nitrogen is the sum of nitrate (NO₃), nitrite (NO₂), and total Kjeldahl nitrogen (TKN) (all expressed as N).

Receiving Water Information

- Name: Dry run tributary (UT) to the North Fork Eau Claire River
- Waterbody Identification Code (WBIC): Not applicable as the receiving water is a wetland. The WBIC for the North Fork Eau Claire River is 2145400.
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code:
 - UT: Limited Aquatic Life (LAL) community. Although the dry run tributary is not listed in ch. NR 104, Wis. Adm. Code, it does meet the definition of LAL under ch. NR 102.04(3)(b), Wis. Adm. Code. The tributary was proposed to be included as LAL in a code update based on its *Fish and Aquatic Life Use Designation Summary (February 2005)*, but the proposed code update was not finalized. The discharge area is described as flow through a dry run for 130 feet, followed by wetland diffuse flow for 1,220 feet, and finally enclosed pipe flow for 850 feet before the confluence with the North Fork Eau Claire River. The dry run and pipe sections have been identified as dry most of the year and cannot support a macroinvertebrate community. This classification will be continued for this evaluation in absence of an updated fish and habitat survey.
 - North Fork Eau Claire River: Warmwater Sport Fish (WWSF) community. This section of the North Fork Eau Claire River was also considered in the same use designation summary and was found to remain a WWSF classification. In addition, the more recent *Natural Community Verification Report (June 2015)*, confirmed a fish population composition consistent with a warmwater designated use. Downstream impacts to the North Fork Eau Claire River will continue to be evaluated approx. 0.5 miles downstream of Outfall 001.
 - All surface waters are non-public water supplies and recreational use.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The low flows for the UT and the North Fork Eau Claire River are zero.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: Not applicable where the receiving water low flows are zero.
- Source of background concentration data: Background concentrations are not included because they

Attachment #1

do not impact the calculated WQBEL when the receiving water low flows are equal to zero.

- Multiple dischargers: The Thorp WWTF discharges to an unnamed tributary to the North Fork Eau Claire River, approx. 14 mi downstream of Outfall 001. At this distance the mixing zones of the facilities are not expected to overlap. Therefore, other dischargers do not impact this evaluation.
- Impaired water status: There are no known impacts to the UT. The North Fork Eau Claire River is on the Clean Water Act Section 303(d) list for a phosphorus impairment (Stream mi 22.48 – 31.43).

Effluent Information

- Flow rate(s):
Annual average design = 0.02 million gallons per day (MGD)
Maximum 365-day annual average = 0.136 MGD
For reference, the actual average flow from October 2021 – January 2026 was 0.091 MGD excluding days discharge did not occur. The maximum 365-day annual average of 0.136 MGD is used to account for the noncontinuous nature of the discharge.
- 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).
- Wastewater source: Domestic wastewater with no industrial contributors.
- Water supply: Private wells.
- Additives: None.
- Effluent characterization: This facility is categorized as a minor municipality and received instructions in the application notification letter that exempt it from standard monitoring requirements.

The following table presents the average concentrations and loadings at Outfall 001 from October 2021 – January 2026 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement
Flow Rate	0.091 MGD
BOD ₅	8.6 mg/L *
TSS	11 mg/L*
pH field	7.5 s.u.
Dissolved Oxygen	6.3 mg/L
Ammonia Nitrogen	3.1 mg/L *
Phosphorus	1.3 mg/L

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

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

Mercury – The permit application did not require monitoring for mercury because Village of Lublin 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

Attachment #1

influent and effluent mercury monitoring once every three months if, “there are two or more exceedances in the last five years of the high-quality sludge mercury concentration of 17 mg/kg specified in s. NR 204.07(5).” However, sludge sampling is not available because the Village of Lublin produces nonsignificant amounts of sludge where the last time sludge was removed from the lagoons was January 1980. It is not expected that there are exceedances of the high-quality mercury concentration based on similar municipal treatment plants and the lack of industries. **Therefore, mercury monitoring is not recommended during the reissued permit term.**

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

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR CONVENTIONAL POLLUTANTS

The BOD₅, TSS, and flow rate limits in the current permit are variance limits as described in s. NR 104.02(4)(c), Wis. Adm. Code, applicable to fill and draw or domestic waste stabilization pond facilities discharging to a LAL or LFF community receiving water. The BOD₅ and TSS variance limits are reevaluated at this time because the UT has a 7-Q₁₀ low flow of zero and does not have a high flow to allow the receiving water condition as described in s. NR 104.02(4)(c)1, Wis. Adm. Code, to be met.

The designated use of the immediate receiving water (UT) is an LAL community. **In absence of the current variance, the following effluent limits are required to protect the LAL community water quality standards as described in s. NR 104.02(3)(b), Wis. Adm. Code:**

LAL Community Conventional Pollutant Limits

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average
BOD ₅			30 mg/L	20 mg/L
TSS			30 mg/L	20 mg/L
Dissolved Oxygen		4.0 mg/L		
pH	9.0 s.u.	6.0 s.u.		

Because the variance is no longer applicable to the Village of Lublin, **the daily maximum flow rate limits are recommended to be removed during the reissued permit term.**

BOD₅

The following table summarizes effluent BOD₅ monitoring data from October 2021 – November 2025.

BOD₅ Effluent Data

Statistics	Conc. (mg/L)
1-day P ₉₉	22.8

Attachment #1

4-day P ₉₉	15.0
30-day P ₉₉	10.7
Mean*	8.6
Std	4.21
Sample size	31
Range	<2 - 19

*Any nondetectable values are treated as zero in calculation of the average.

A review of the effluent BOD₅ statistics and the calculated monthly average BOD₅ concentrations show the Village of Lublin can meet the updated BOD₅ limits. **Therefore, a compliance schedule is not needed and the updated BOD₅ limits will be effective upon permit reissuance.**

TSS

The following table summarizes effluent TSS monitoring data from October 2021 – November 2025.

TSS Effluent Data

Statistics	Conc. (mg/L)
1-day P ₉₉	34.9
4-day P ₉₉	21.1
30-day P ₉₉	13.9
Mean*	10.6
Std	6.80
Sample size	39
Range	<2 - 28

*Any nondetectable values are treated as zero in calculation of the average.

A review of the effluent TSS statistics and the calculated monthly average TSS concentrations show the Village of Lublin can meet the updated TSS limits. **Therefore, a compliance schedule is not needed and the updated TSS limits will be effective upon permit reissuance.**

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 limits year round. These limits are re-evaluated at this time due to the following changes:

- The need for weekly and monthly average WQBELs.
- A change in the maximum expected effluent pH.

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

The effluent pH data was examined as part of this evaluation. A total of 39 sample results were reported from October 2021 – November 2025. The maximum reported value was 8.3 s.u. (Standard pH Units). The effluent pH was 8.3 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 8.5 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 8.5 s.u. Therefore, a value of 8.5 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 8.5 s.u. into the equation above yields an ATC = 5.12 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method

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.

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

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.

In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using 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

Method	Ammonia Nitrogen Limit (mg/L)
2×ATC	10

1-Q ₁₀	5.1
-------------------	-----

The 1-Q₁₀ method yields the most stringent limits for the Village of Lublin. Presented below is a table of daily maximum limitations corresponding to various effluent pH values. Use of this table is not necessarily recommended in the permit, but it is presented herein for informational purposes.

Daily Maximum Ammonia Nitrogen Limits – LAL

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

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

The weekly and monthly average ammonia nitrogen limits calculation from the previous limit evaluation (June 2021) do not change because of a lack of assimilative capacity with both the UT and the North Fork Eau Claire River having low flows of zero. The calculations from the previous limit evaluation are shown in the table below:

Weekly & Monthly Average Ammonia Nitrogen Limits – WWSF Community

North Fork Eau Claire River		Spring	Fall
		March – May	Sept. – Nov.
Effluent Flow	Q _e (MGD)	0.068	0.068
Background Information	7-Q ₁₀ (cfs)	0	0
	7-Q ₂ (cfs)	0	0
	Maximum Temperature (°C)	14	16
	pH (s.u.)	7.42	7.48
	Reference Weekly Flow (cfs)	0	0
	Reference Monthly Flow (cfs)	0	0
Criteria mg/L	4-day Chronic		
	Early Life Stages Present	11.65	
	Early Life Stages Absent		10.38
	30-day Chronic		
	Early Life Stages Present	4.66	
	Early Life Stages Absent		4.15
Effluent Limitations mg/L	Weekly Average		
	Early Life Stages Present	12	
	Early Life Stages Absent		10
	Monthly Average		
	Early Life Stages Present	4.7	
	Early Life Stages Absent		4.2

Attachment #1

The calculated weekly and monthly average limits for the North Fork Eau Claire River accounting for ammonia decay are more stringent than those for the UT. Therefore, the limits protective of the North Fork Eau Claire River water quality apply to the Village of Lublin.

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from May 2016 – November 2025. Additional effluent ammonia nitrogen data from May 2016 – May 2017 is utilized to better determine the need for limits during the March – May discharge timeframe.

Ammonia Nitrogen Effluent Data

Ammonia Nitrogen mg/L	May	Sept. – Nov.
1-day P ₉₉	16	11
4-day P ₉₉	9.5	6.4
30-day P ₉₉	6.1	3.8
Mean *	4.6	2.7
Std	3.2	2.2
Sample size	11	26
Range	<2 - 8.85	<2 - 7.3

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

Reasonable Potential

The need to include ammonia limits in the Village of Lublin permit is determined by calculating 99th upper percentile (or P₉₉) values for ammonia during the month ranges and comparing those to the calculated limits. **Based on this comparison, a daily maximum limit of 5.1 mg/L is recommended year round (March – May, September – November) and the monthly average limit of 4.7 mg/L is recommended during May.** In this case, the monthly average limit would apply during May only instead of March – May because the only effluent ammonia nitrogen data available is from May.

The Village of Lublin shall notify the Department if the single limit or the variable limits based on effluent pH are preferred.

Conclusions and Recommendations

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

Final Ammonia Nitrogen Limits

Month Range	Daily Maximum (mg/L)	Monthly Average (mg/L)
March – April	5.1 or Variable	
May	5.1 or Variable	4.7

Attachment #1

September – November	5.1 or Variable	
----------------------	-----------------------	--

PART 5 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

Section NR 102.04(5), Wis. Adm. Code, states that all surface waters shall be suitable for supporting recreational use and shall meet *E. coli* criteria during the recreation season. Section NR 102.04(5)(b), Wis. Adm. Code, allows the Department to make exceptions when it determines, in accordance with s. NR 210.06(3), Wis. Adm. Code, that wastewater disinfection is not required to meet *E. coli* limits and protect the recreational use. Section NR 210.06(3), Wis. Adm. Code, tasks the Department with determining the need for disinfection using a site-specific analysis based on potential risk to human or animal health. It sets out the factors that must be considered in determining the necessity to disinfect municipal wastewater or to change the length of the disinfection season.

The Village of Lublin had previously been exempted from disinfection based on the LAL or LFF community classification of the receiving water. Section NR 210.06(3)(g), Wis. Adm. Code, states that disinfection decisions may be made based on the hydrologic classifications listed in s. NR 104.02(1), Wis. Adm. Code (**not** on the water quality classifications - i.e., LFF, LAL - that are defined in s. NR 104.02(3), Wis. Adm. Code). The hydrologic classification for the UT is a diffuse surface water. Discharges to diffuse surface waters that have very little to no flow most often result in effluent-dominated situations. The risk of illness is related to the concentration of *E. coli* and therefore dilution is an important consideration when considering risk to human health. Since little to no dilution is present in these situations, disinfection should not be exempted based solely on this hydrological classification.

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

The maximum 180-day rolling average flowrate for the facility is 0.031 MGD (October 2021 – November 2025) including days discharge did not occur. The volumetric capacity of the lagoons is approx. 9.9 MG, calculated based on dimensions provided by the facility. Therefore, the estimated shortest detention time for the facility is approximately $9.9 \text{ MG} / 0.031 \text{ MGD} = 315$ days and is significantly greater than the 180-day minimum. This detention time is essentially providing disinfection where additional disinfection treatment is not expected to be needed. **Therefore, bacteria limits or monitoring are not recommended during the reissued permit term.**

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

Annual Average Mass Total Phosphorus Loading

Month	Average Phosphorus Concentration (mg/L)	Total Effluent Flow (Million Gallons)	Calculated Mass (lbs/month)
May 2025	1.45	3.3	40
October 2025	1.25	0.49	5.1
November 2025	1.47	1.6	19
Average =			22

Total P (lbs/month) = Monthly average (mg/L) × total flow (MG/month) × 8.34 (lbs/gallon)

Where total flow is the sum of the actual flow (MGD) for that month

Water Quality-Based Effluent Limits (WQBEL)

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

Phosphorus criteria in s. NR 102.06, Wis. Adm. Code, do not apply to LAL waters as described in s. NR 102.06(6)(d), Wis. Adm. Code. These waters were not included in the USGS/WDNR stream and river studies and, therefore, the Department lacked the technical basis to determine and propose applicable criteria. At some time in the future, the Department may adopt phosphorus criteria based on new studies focusing on LAL waters. *The Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges (2020)* suggests that during the interim, WQBELs should be based on the criteria and flow conditions for the next stream segment downstream (or downstream lake or reservoir, if appropriate), because ss. 217.12 and 217.13, Wis. Adm. Code, state that the Department must set WQBELs to protect downstream waters. The North Fork Eau Claire River is approx. 0.5 mi downstream of Outfall 001 where the previous limit evaluation (June 2021), determined via the Phosphorus Limits Downstream Protections Checklist (May 2021), that the implementation of phosphorus WQBELs protective of the North Fork Eau Claire River was appropriate. This decision will be continued for this evaluation.

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 North Fork Eau Claire River.

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 North Fork Eau Claire River.

Qs = 100% of the 7-Q₂ of 0 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 = 0.136 MGD = 0.210 cfs

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

The effluent limit is set equal to criteria because the receiving water flow is equal to zero.

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from May 2022 – November 2025.

Total Phosphorus Effluent Data

Statistics	Conc. (mg/L)
1-day P ₉₉	2.66
4-day P ₉₉	1.89
30-day P ₉₉	1.48
Mean	1.28
Std	0.45
Sample size	34
Range	0.331 - 2.07

Reasonable Potential Determination

The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion because the 30-day P₉₉ of reported effluent total phosphorus data is greater than the calculated WQBEL. **Therefore, a phosphorus WQBEL is recommended during the reissued permit term.**

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 North Fork Eau Claire River has a phosphorus impairment. **This final mass limit shall be $0.075 \text{ mg/L} \times 8.34 \times 0.136 \text{ MGD} = 0.085 \text{ lbs/day}$ expressed as a six-month average.**

Water Quality Trading Minimum Control Level

The Village of Lublin plans to comply with the phosphorus WQBELs via a WQT plan submitted as an alternative compliance option to offset any total phosphorus discharged from Outfall 001 that exceed the phosphorus WQBELs. The phosphorus WQBELs may be expressed as computed compliance limits, but a MCL must be set as a limit not to be exceeded at the outfall location. **Therefore, the phosphorus AEL**

of 2.5 mg/L as a monthly average is recommended during the reissued permit term to serve as the MCL.

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 Chapters NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. The daily maximum effluent temperature limitation shall be 86 °F for discharges to surface waters classified as an LAL comminute according to s. NR 104.02(3)(b)1, Wis. Adm. Code, except for those classified as wastewater effluent channels and wetlands regulated under ch. NR 103 and described in s. NR 106.55(2), Wis. Adm. Code, which has a daily maximum effluent temperature limitation of 120 °F. The 86° F limit applies because the hydrologic classification is not listed as a wetland or wastewater effluent channel in ch. NR 104, Wis. Adm. Code.

Downstream impacts with respect to the North Fork Eau Claire River approx. 0.5 mi downstream will be considered with weekly average temperature limits. 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 October 2021 – November 2025.

The heat loss equation as described by s. NR 106.55(5), Wis. Adm. Code, is used for discharges to storm sewer/storm water conveyance channels where the default cooling rate is estimated as 1 °F per 400 ft and is used to estimate the given cooling over the 0.5 mi between Outfall 001 and the North Fork Eau Claire River. This is considered conservative for open-channel flow especially during the winter months where the heat loss is expected to be more significant than estimated.

The daily maximum effluent limitation of 86 °F is protective of the thermal water quality protection of the UT and are more restrictive than the cooling adjusted limits for the North Fork Eau Claire River. The weekly average effluent limitations are the cooling adjusted limits for the North Fork Eau Claire River. The complete temperature limit calculation is included as attachment #3.

Monthly Temperature Effluent Data & Limits

Month	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
MAY	72	86
SEPT	80	86
OCT	68	86
NOV	56	86

Since this facility provides hydraulic detention times of approx. 315 days elevated effluent temperatures are unlikely and discharge temperatures are expected to be similar to ambient conditions. The facility uses a fill and draw method of operation with effluent discharges occurring only during the cool weather

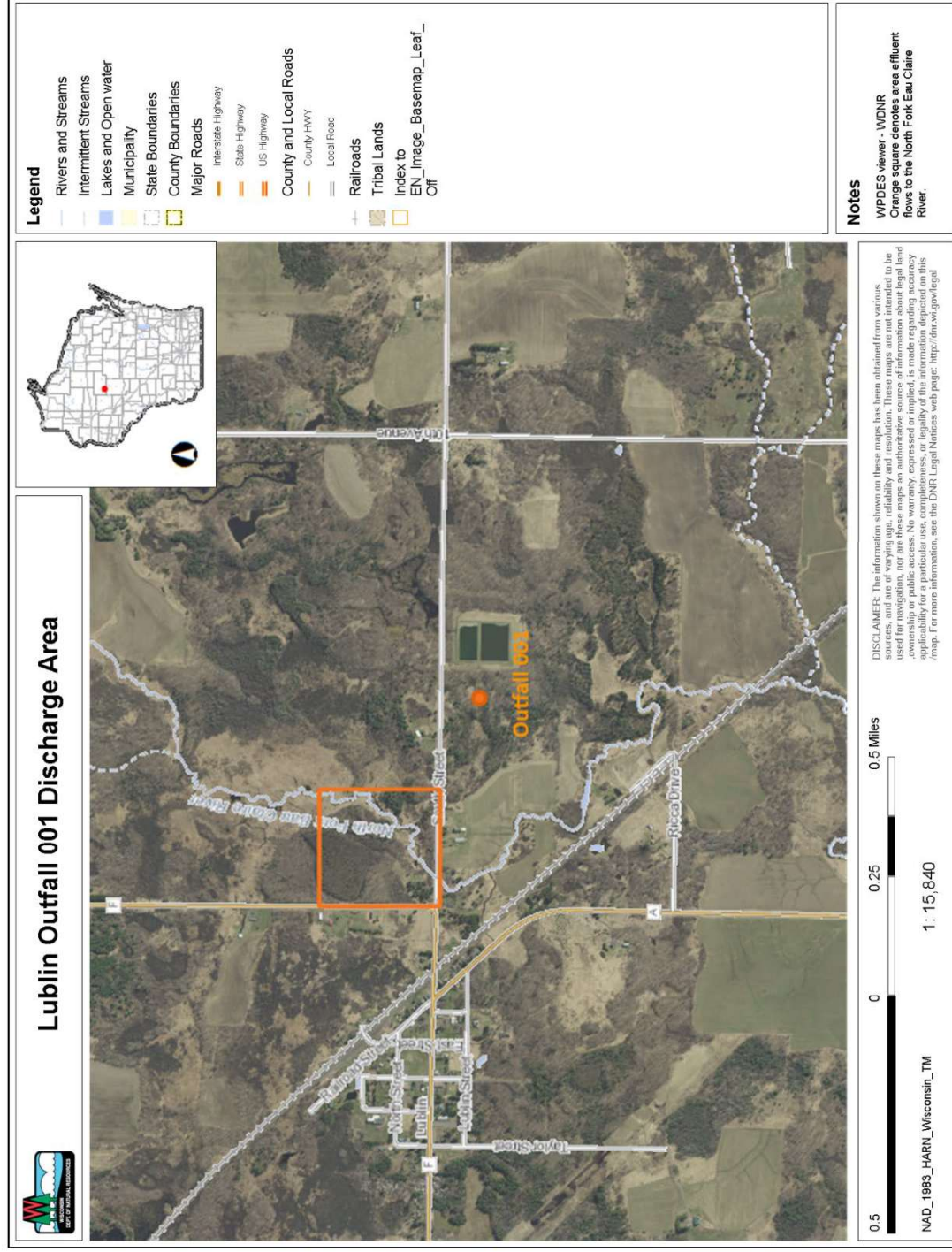
periods in spring and fall when ambient temperatures are less than 56 deg. F. **Therefore, temperature limits and monitoring are not recommended during the reissued permit term.**

PART 8 – WHOLE EFFLUENT TOXICITY (WET)

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

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

Attachment #2



Temperature Limits for Receiving Waters with Unidirectional Flow

(calculation using default ambient temperature data)

Facility:	Village of Lublin	7-Q₁₀:	0.00 cfs	Temp Dates	10/05/21 11/29/25
Outfall(s):	001	Dilution:	25%	Start:	01/00/00
Date Prepared:	2/11/2026	f:	0	End:	01/00/00
Design Flow (Q_e):	0.136 MGD	Stream type:	Small warm water sport or forage fish co ▼		
Storm Sewer Dist.	2640 ft	Qs:Qe ratio:	0.0 :1		
		Calculation Needed?	YES		

Month	Water Quality Criteria		Receiving Water Flow Rate (Qs) (cfs)	Representative Highest Effluent Flow Rate (Qe)			Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit		Adjusted Thermal Limits	
	Ta (default) (°F)	Sub-Lethal WQC (°F)	Acute WQC (°F)	7-day Rolling Average (Qesl) (MGD)	Daily Maximum Flow Rate (Qea) (MGD)	f	Weekly Average (°F)	Daily Maximum (°F)	Weekly Average Effluent Limit (°F)	Daily Maximum Effluent Limit (°F)	Weekly Average (°F)	Daily Maximum (°F)
MAY	58	65	82	0.231	0.236	0			65	82	72	89
SEP	60	73	82	0.018	0.019	0			73	82	80	89
OCT	50	61	80	0.061	0.068	0			61	80	68	87
NOV	40	49	77	0.059	0.059	0			49	77	56	84