Permit Fact Sheet

General Information

Permit Number	WI-0021881-11-0
Permittee Name and Address	Village of Taylor WWTF P O Box 130, Taylor, WI 54659-0130
Permitted Facility Name and Address	Taylor Wastewater Treatment Facility Route 1, Taylor, WI 54659
Permit Term	April 01, 2027 to March 31, 2032
Discharge Location	South bank of the Trempealeau River, approximately 1 mile west of Bridge St. SW1/4, NW1/4, Section 8, T21N, R6W
Receiving Water	Trempealeau River (Upper Trempealeau River Watershed, BT05 – Buffalo - Trempealeau River Basin) in Jackson County
Stream Flow ($Q_{7,10}$)	26 cfs
Stream Classification	Cold Water (Category 5), Class III trout stream, non-public water supply, recreational use
Discharge Type	Existing, Seasonal - Fill & Draw (May, June, October, November)
Annual Average Design Flow (MGD)	0.079 MGD
Industrial or Commercial Contributors	Greenleaf Trucking and Greenleaf Transport
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; P - Total Phosphorus; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Village of Taylor operates a fill and draw lagoon wastewater treatment facility consisting of two primary lagoon ponds and two secondary lagoon ponds. Domestic wastewater is conveyed from the collection system through a lift station and force main to pond 1 and pond 2, the wastewater is then split between ponds 3 and 4 for secondary treatment. Ponds 3 and 4 combine in the effluent manhole prior to discharge to the Trempealeau River. Ferric chloride is added at the lift station for chemical phosphorus treatment. Sludge removal from the lagoons has not occurred.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on July 8, 2026, this facility 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	0.049 MGD (Average, 2025)	Influent: Representative grab samples shall be collected at the Parshall flume in the lift station manhole. Flow is monitored with an ultrasonic meter at the Parshall flume.
001	0.435 MGD (Average, October 2019 – June 2026)	Effluent: Representative grab samples shall be collected from the effluent manhole. Flow is monitored with an ultrasonic meter at the effluent Parshall flume.
002	N/A – Lagoon Sludge has not been removed	Lagoon Sludge: Class B, Liquid. Representative grab composite samples shall be collected from ponds 3 and 4.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- LIFT STATION MANHOLE

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	Grab	
Suspended Solids, Total		mg/L	Weekly	Grab	

Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

Flow: Sample frequency has changed to daily for eDMR reporting purposes.

BOD & TSS: Sample frequency has changed to weekly.

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- FILL&DRAW EXIT MANHOLE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate	Daily Max	0.7 MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	2/Week	Grab	
BOD5, Total	Monthly Avg	30 mg/L	2/Week	Grab	
Suspended Solids, Total	Weekly Avg	45 mg/L	2/Week	Grab	
Suspended Solids, Total	Monthly Avg	30 mg/L	2/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Nitrogen, Ammonia Variable Limit		mg/L	2/Week	See Table	Look up the variable ammonia limit from the 'Variable Ammonia Limitation' table in the permit and report the variable limit in the Ammonia Variable Limit column on the eDMR.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	2/Week	Grab	Report the daily maximum ammonia result in the Nitrogen, Ammonia (NH3-N) Total column of the eDMR. See Ammonia Limitation permit section.
Phosphorus, Total	Monthly Avg	0.6 mg/L	2/Week	Grab	Interim limit. See the Phosphorus Variance - Implement Pollutant Minimization Plan permit section and the Phosphorus PMP Schedule.
Phosphorus, Total		lbs/day	2/Week	Calculated	Calculate the daily mass discharge of phosphorus on the same days phosphorus sampling occurs. Mass (lbs/day) = Concentration (mg/L) x Flow (MGD) x 8.34
E. coli		#/100 ml	Weekly	Grab	Monitoring only. May – September in 2030 & 2031.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	Grab	Annual in rotating quarters. See Nitrogen Series

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Monitoring permit section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	Grab	Annual in rotating quarters. See Nitrogen Series Monitoring permit section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Annual in rotating quarters. See Nitrogen Series Monitoring permit section. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	Grab	See the Whole Effluent Toxicity (WET) Testing permit section.
Chronic WET		TUc	See Listed Qtr(s)	Grab	See the Whole Effluent Toxicity (WET) Testing permit section.

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.

Flow: Sample frequency has changed to daily for eDMR reporting purposes.

pH: Sample frequency has changed to 5/week.

Ammonia: Variable Ammonia Limitation table in the permit has been expanded to include the full pH range and updated based on Coldwater Category 5.

Phosphorus: The permittee has applied for an individual phosphorus variance (IPV) for this permit term. An IPV interim limit of 0.6 mg/L as a monthly average as well as a reporting requirement for daily mass discharge of phosphorus is included throughout the permit term.

E. coli: Weekly monitoring during the disinfection season (May – September) in 2030 and 2031 has been included in the permit.

Total Nitrogen Monitoring (TKN, NO2+NO3 and Total N): Annual monitoring is required in specific quarters as outlined in the permit.

Acute & Chronic WET: Three acute WET tests and two chronic WET tests are required during the permit term.

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 for the Taylor Wastewater Treatment Facility, dated August 31, 2026, prepared by Ben Hartenbower, and used for this reissuance.

Phosphorus: The permittee has applied for an individual phosphorus variance in accordance with s. 283.15, Wis. Stats. Conditions for this variance include maintaining phosphorus effluent concentrations at or below the interim limit of 0.6 mg/L as a monthly average, implementing the phosphorus pollutant minimization program (PMP) plan dated April 30, 2025, continued optimization for control of phosphorus, and calculating, reporting, and tracking phosphorus mass discharge. If approved by EPA, compliance with state water quality standards would be met through the interim limit along with all additional phosphorus variance provisions.

Disinfection & E. coli: Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020.

Section NR 102.04(5)(a), Wis. Adm. Code, states that all surface waters shall be suitable for recreational use and meet the E. coli criteria established to protect this use. Section NR 102.04(5)(b), Wis. Adm. Code, states that exceptions to the disinfection requirement can be made if the department determines, in accordance with the procedures specified in s. NR 210.06(3), Wis. Adm. Code, that disinfection is not required to meet water quality criteria. As part of the reissuance process, the requirements for disinfection were reviewed under s. NR 210.06(3), Wis. Adm. Code.

Monitoring has been included during the disinfection season of 2030 and 2031, to determine reasonable potential at the next permit reissuance. The permittee typically discharges in May and June, therefore, monitoring for two disinfection seasons has been included to gather representative data. The permittee should prepare to properly monitor and test for E. coli, including, but not limited to, selected test method and location of sampling. If data collected show limits are exceeded, disinfection may be required in the future.

Total Nitrogen Monitoring: The department has included effluent monitoring for Total Nitrogen through the authority under s. 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.

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. Based on information available at the time the proposed permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA in the effluent 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.

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. The monitoring frequency for pH has increased to 5/week to align the Village of Taylor with other facilities of similar size and type.

Expression of Limits: Additional limits to comply with the expression of limits requirements in ss. NR106.07 and NR 205.065(7), Wis. Adm. Codes, are not required due to the non-continuous nature of the discharge.

3 Land Application - Monitoring and Limitations

Municipal Sludge Description

Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
002	B	Liquid	Fecal Coliform	Injection / Incorporation	Land Application	N/A – Lagoon Sludge

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.**

If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility

Is a priority pollutant scan required? **No, design flow less than 5 MGD.**

Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.

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	
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	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Nitrogen, Total Kjeldahl		Percent	Per Application	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Per Application	Composite	
Phosphorus, Total		Percent	Per Application	Composite	
Phosphorus, Water Extractable		% of Tot P	Per Application	Composite	
Potassium, Total Recoverable		Percent	Per Application	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	
PFOA + PFOS		ug/kg	Once	Calculated	Monitoring required once 4/1/2027 – 6/30/2027. Report the sum of PFOA and PFOS. See PFAS permit sections for more information.
PFAS Dry Wt			Once	Grab	Monitoring required once 4/1/2027 – 6/30/2027. Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR 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.

List 2 Nutrients: Monitoring of List 2 Nutrients has been added should land application occur and for planning purposes.

PFOA + PFOS: Monitoring is required once pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code. Monitoring is required between April 1, 2027 and June 30, 2027 in order to meet the requirements of the General Permit, "PFAS Monitoring for Sewage Sludge (Biosolids) Generators" (WI-0012345-0).

PFAS: Monitoring is required once pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code. Monitoring is required between April 1, 2027 and June 30, 2027 in order to meet the requirements of the General Permit, "PFAS Monitoring for Sewage Sludge (Biosolids) Generators" (WI-0012345-0).

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 Nutrients: Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in year 2 of the permit (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). List 2 nutrient sampling is required when land application occurs.

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.

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.

4 Schedules

4.1 P (Total Phosphorus) Subclass

The permittee is required to have a designated operator-in-charge that shall be certified at the level and in all subclasses of the treatment facility pursuant to s. NR 114.53(1), Wis. Adm. Code.

Required Action	Due Date
Operator Certification: Per s. NR 114.53 Wis. Adm. Code, the permittee shall have an operator in charge (OIC) certified in the P Subclass Total Phosphorus by the Due Date. Within 30 days of receiving certification, and no later than the Due Date, the permittee shall notify the department in writing of the certified operator's name and certification number with the P Subclass certification.	08/01/2027

Explanation of Schedule

The phosphorus chemical feed system was installed and has been in use for over 10 years, therefore, the permittee shall have the designated operator-in-charge (OIC) obtain the P (Total Phosphorus) subclass at the basic level pursuant to s. NR 114.53(4), Wis. Adm. Code. This schedule serves as a reminder of the operator certification requirements.

4.2 Phosphorus Pollutant Minimization Program

As a condition of the variance to the water quality-based effluent limitation (WQBEL) for phosphorus granted in accordance with s. 283.15, Wis. Stats., the permittee shall implement the Phosphorus PMP including any subsequent updates.

Required Action	Due Date
Annual Phosphorus Progress Report: Submit an annual progress report that shall discuss which phosphorus pollutant minimization measures have been implemented during the prior calendar year. The report shall include an analysis of trends in weekly average, monthly average and annual total influent and effluent phosphorus concentrations and mass discharge of phosphorus based on phosphorus sampling and flow data. The report shall provide an update on the permittee's: (1) progress in implementing pollutant minimization measures, operational improvements, and minor facility modifications to optimize reductions in phosphorus discharges and, (2) status of evaluating feasible alternatives for meeting phosphorus WQBELs. Note that the monthly average interim limitation listed in the permit's Surface Water section remains enforceable until new enforceable limits are established in the next permit reissuance. The first annual phosphorus progress report is to be submitted by the Date Due.	03/31/2028
Annual Phosphorus Progress Report #2: Submit a phosphorus progress report as defined above for the previous calendar year.	03/31/2029
Annual Phosphorus Progress Report #3: Submit a phosphorus progress report as defined above for the previous calendar year.	03/31/2030
Annual Phosphorus Progress Report #4: Submit a phosphorus progress report as defined above for the previous calendar year.	03/31/2031
Final Phosphorus Report: Submit a final report documenting the success in reducing phosphorus concentrations in the effluent, as well as the anticipated future reduction in phosphorus sources and phosphorus effluent concentrations. The report shall summarize phosphorus pollutant minimization activities that have been implemented during the current permit term and state which, if any, pollutant minimization activities from the approved pollutant minimization program plan were not pursued and why. The report shall include an analysis of trends in monthly and annual total influent and effluent phosphorus concentrations based on phosphorus sampling during the current permit term. The permittee shall also re-evaluate all available compliance options for meeting the final phosphorus WQBELs. If the report concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an adaptive management plan. If the report concludes water quality trading will be used, the submittal shall include a Water Quality Trading Plan. Additionally, if the permittee intends to seek to re-apply for a phosphorus variance per s. 283.15, Wis. Stats for the reissued permit, a detailed pollutant minimization program plan outlining the pollutant minimization activities proposed for the upcoming permit term should be submitted along with the final report.	09/30/2031
Annual Phosphorus Progress Reports After Permit Expiration: In the event that this permit is not reissued by the date the permit expires, the permittee shall continue to submit reports for the previous calendar year following the due date of annual phosphorus progress reports listed above. Annual phosphorus progress reports shall include information as defined above.	

Explanation of Schedule

This schedule is to be implemented as a condition of the permittee's variance to the water quality standards for phosphorus. Annual phosphorus progress reports update the Department on the progress made in implementing the Pollutant Minimization Program Plan as well as quantifying reductions achieved through plant optimization and from contributing sources within the collection system.

4.3 Phosphorus Payment per Pound to County

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

Required Action	Due Date
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 ($53.01 per pound) or $640,000, whichever is less. See payment calculation steps in WPDES Permit No. WI-0021881-10-0. 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. 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.	03/01/2028

Explanation of Schedule

This schedule accounts for payments accrued in 2027 while covered under the phosphorus MDV. WPDES Permit No. WI-0021881-10-0 can be referenced for more information about the MDV and payment calculation steps.

4.4 Sludge Management Plan

A management plan is required for the management of sludge.

Required Action	Due Date
Sludge Management Plan Submittal: 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. 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

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 Quality Based Effluent Limits, dated August 31, 2026

Phosphorus EPA Data Sheet

Phosphorus PMP (Pollutant Minimization Program) Plan, Village of Taylor, dated April 30, 2025

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance.

Prepared By: BetsyJo How, Wastewater Specialist **Date:** 9/16/2026; 10/6/2026; 10/22/2026

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: August 31, 2026

TO: BetsyJo Howe – Fitchburg

FROM: Benjamin Hartenbower – Eau Claire

SUBJECT: Water Quality-Based Effluent Limitations for the Taylor Wastewater Treatment Facility
WPDES Permit No. WI-0021881

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 Taylor Wastewater Treatment Facility in Jackson County. This municipal wastewater treatment facility (WWTF) discharges to the Trempealeau River, located in the Upper Trempealeau River Watershed in the Buffalo - Trempealeau 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	0.7 MGD					1
BOD_5			45 mg/L	30 mg/L		1,2
TSS			45 mg/L	30 mg/L		1,2
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen	Variable					3
Phosphorus Interim Final WQBEL				0.6 mg/L 0.225 mg/L	0.075 mg/L, 0.43 lbs/day	4
E. coli						5
TKN, Nitrite+Nitrate, and Total Nitrogen						6
Acute WET						7,8
Chronic WET						7,9

Footnotes:

1. No changes from the current permit.
2. These limits are based on the Cold Water (CW) community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.

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

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

4. If the phosphorus variance application that was submitted is approved by EPA, the existing interim limit of 0.6 mg/L as a monthly average may be extended along with a requirement for total phosphorus pollutant minimization program.
5. Monitoring during the disinfection season of May through September.
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 nitrite (NO_2), nitrate (NO_3), and total Kjeldahl nitrogen (TKN) (all expressed as N).
7. Three Acute and two Chronic WET tests are recommended. Sampling WET concurrently with any chemical-specific toxic substances is recommended.
8. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests.
9. The Instream Waste Concentration (IWC) to assess chronic test results is 14%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 30%, 10%, 3% & 1%. The primary control water used in chronic WET tests conducted on Outfall 001 shall be a grab sample collected from the Trempealeau River.

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 Benjamin Hartenbower at (715) 225-4705 or benjamin.hartenbower@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, Thermal Table, & Map

PREPARED BY: _____ Date: 8/31/26

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Attachment #1

Water Quality-Based Effluent Limitations for the Taylor Wastewater Treatment Facility

WPDES Permit No. WI-0021881

Prepared by: Benjamin P. Hartenbower

PART 1 – BACKGROUND INFORMATION

Facility Description

The Taylor Wastewater Treatment Facility is a lagoon system with two (2) primary cells and two (2) secondary cells. Ferric chloride is used to control phosphorus. The outfall is located one mile west of the lift station on Bridge Street and discharges to the Trempealeau River.

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

Existing Permit Limitations

The current permit, which expired on 09/30/2024, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate	0.7 MGD					1
BOD_5			45 mg/L	30 mg/L		1,2
TSS			45 mg/L	30 mg/L		1,2
pH	9.0 s.u.	6.0 s.u.				1,2
Ammonia Nitrogen	Variable					3
Phosphorus Interim MDV Interim Final WQBEL				 1.0 mg/L 0.6 mg/L 0.225 mg/L	 0.075 mg/L	4

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. These limits are based on the Cold Water (CW) community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code.

3. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values.

Effluent pH (s.u.)	NH_3-N Limit (mg/L)	Effluent pH (s.u.)	NH_3-N Limit (mg/L)
pH ≤ 7.1	No Limit	8.0 < pH ≤ 8.1	9.3
7.1 < pH ≤ 7.2	39*	8.1 < pH ≤ 8.2	7.6
7.2 < pH ≤ 7.3	35*	8.2 < pH ≤ 8.3	6.3
7.3 < pH ≤ 7.4	31*	8.3 < pH ≤ 8.4	5.2
7.4 < pH ≤ 7.5	27*	8.4 < pH ≤ 8.5	4.3
7.5 < pH ≤ 7.6	23*	8.5 < pH ≤ 8.6	3.5
7.6 < pH ≤ 7.7	19	8.6 < pH ≤ 8.7	3
7.7 < pH ≤ 7.8	16	8.7 < pH ≤ 8.8	2.5
7.8 < pH ≤ 7.9	14	8.8 < pH ≤ 8.9	2.1
7.9 < pH ≤ 8.0	11	8.9 < pH ≤ 9.0	1.8

* During the months of May through October if the pH is less than or equal to 7.6 there is no daily maximum limit for NH_3-N. Limits shown in the table above with an asterisk* apply from November through April only.

4. A compliance schedule is in the current permit to meet the MDV Interim Limit by 10/01/2023.

Receiving Water Information

- Name: Trempealeau River
- Waterbody Identification Code (WBIC): 1769900
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code:
  Cold Water (Category 5), Class III trout stream, non-public water supply.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code:
  The following 7-Q_{10} and 7-Q_2 values are from USGS for Station 05379200, at highway P, 0.4 miles north of Taylor, in the Trempealeau River where Outfall 001 is located.
  7-Q_{10} = 26 cubic feet per second (cfs)
  7-Q_2 = 38 cfs
  Harmonic Mean Flow = 54 cfs using a drainage area of 110 mi^2

The Harmonic Mean has been estimated based on average flow and the 7-Q_{10} using an equation from U.S. EPA's *Technical Support Document for Water Quality-Based Toxics Control* (March 1991, EPA/505/2-90-001, pgs. 88-89).

- Hardness: 117 mg/L as $CaCO_3$.
  This value represents the geometric mean of receiving water hardness collected for WET testing from 04/25/2002 to 11/11/2003 (n = 117).
- % of flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%
- Source of background concentration data: Chloride data are from the Trempealeau River. Cadmium, Chromium, Copper, Lead, and Zinc data are from Pigeon Creek at York because results were not available for the Trempealeau River. Pigeon Creek is within the same ecological landscape so ambient water quality characteristics are expected to be similar. 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.
- Impaired Water Status:
  The Trempealeau River is impaired for *E. coli* (milepoints 0 to 0.02 and 31.28 to 51.72), mercury (milepoints 0 to 31.28), PCBs (milepoints 0 to 31.28), and phosphorus (milepoints 0 to 81.51).

Effluent Information

- Design flow rates:
  Peak annual average = 0.684 million gallons per day (MGD)

  For reference, the actual average flow during discharge occurrences from 10/14/2019 to 06/15/2026 was 0.435 MGD.
- Hardness: 102 mg/L as $CaCO_3$. This value represents the geometric mean of four sample results submitted with the permit application.
- 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 two industrial contributors.
- Water supply: Taylor Waterworks
- Fraction of the effluent flow withdrawn from receiving water : ("f" as described in s. NR 106.06, Wis. Adm. Code): 0
- Additives: one water quality conditioner (T125), one for phosphorus control (Ferric Chloride), one biocide (Hydrothol 191).
- Effluent Characterization: This facility is categorized as a minor municipal discharger, 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 chloride and hardness.
- The permit-required monitoring for ammonia and phosphorus from October 2019 to June 2026 is used in this evaluation.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2, 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.

Copper and Chloride Effluent Data at Outfall 001

Sample Date	Copper µg/L	Sample Date	Chloride mg/L
05/13/2024	<6	05/13/2024	119
05/14/2024	9	05/16/2024	120
05/15/2024	<6	05/19/2024	122
05/16/2024	7	05/22/2024	116
05/17/2024	<6		
05/18/2024	<6		
05/19/2024	<6		
05/20/2024	<6		
05/21/2024	8		
05/22/2024	<6		
05/28/2024	<6		
mean	2.2	mean	119

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

The following table presents the average concentrations and loadings at Outfall 001 from October 2019 to June 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 for Outfall 001

	Average Measurement
Flow Rate	0.40 MGD*
BOD_5	9.2 mg/L*
TSS	12 mg/L*
pH	7.80 s.u.
Ammonia Nitrogen	2.6 mg/L*
Phosphorus	0.28 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

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 P_{99}) 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-Q_{10}

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. Adm. 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-Q_{10} 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.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

Where:

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

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

Qe = 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

Cs = 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-Q_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for the Taylor Wastewater Treatment Facility, and the limits are set based on two times the acute toxicity criteria.

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

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 21 cfs, (1-Q_{10} (estimated as 80% of the 7-Q_{10})), 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.
Arsenic		340		680	136	<1.2		
Cadmium	102	4.46	0.038	8.91	1.782	<1		
Chromium (+3)	102	1833	0.678	3665	733	<2		
Copper	102	15.8	1.13	31.6	6.32	2.18		9.00
Lead	102	109	0.5261	218	43.6	<1		
Nickel	102	477		954	190.8	<9		
Zinc	102	122	19.689	245	49	<6		
Chloride (mg/L)		757	14	1514	302.8	119		122

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)
RECEIVING WATER FLOW = 6.5 cfs, (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4)(c), Wis. Adm. Code.

SUBSTANCE	REF HARD. mg/L	CTC	MEAN BACK-GRD.	WEEKLY EFFL. LIMIT	1/5 OF AVE. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Arsenic		148		1036	207.2	<1.2	
Cadmium	117	2.79	0.038	19.3	3.86	<1	
Chromium (+3)	117	98.0	0.678	682	136.4	<2	
Copper	117	11.8	1.13	76.1	15.22	2.18	
Lead	117	32.6	0.5261	225	45	<1	
Nickel	117	59.6		417	83.4	<9	
Zinc	117	138	19.689	849	169.8	<6	
Chloride (mg/L)		395	14	2682	536.4	119	

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 = 13 cfs, (¼ of the Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MONTHLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P_{99}
Cadmium	370	0.038	4956	991	<1	
Chromium (+3)	3818000	0.678	51144107	10228821	<2	
Lead	140	0.5261	1869	374	<1	
Nickel	43000		576008	115202	<9	

Monthly Average Limits based on Human Cancer Criteria (HCC)
RECEIVING WATER FLOW = 13 cfs, (¼ of the Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MONTHLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P_{99}
Arsenic	13.3		178	35.6	<1.2	

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 calculated limitations and effluent data, effluent limitations are not required for toxic parameters.

Mercury– The permit application did not require monitoring for mercury because the Taylor 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 six years of sludge characteristics data reveals that all sample results are within expected analytical ranges and well below the 17 mg/kg level. The concentration in the sludge from 2021 was 0.200 mg/kg. **Therefore, no mercury monitoring is recommended at Outfall 001.**

PFOS and PFOA-The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code.

Available monitoring sample data from the Taylor Waterworks (PWS ID: 62702970) is provided in the table below:

Water Supply PFAS Data

Sample Date	Sample ID	Well #	PFOS (ng/L)	PFOA (ng/L)
06/14/2022	625447001	DK279	<0.925	<1.85
06/14/2022	625448001	BF845	<0.935	<1.87
05/23/2023	CB05463-01	DK279	<0.32	<0.51
05/23/2023	CB05463-03	BF845	<0.32	<0.51
		Average =	ND	ND

The limited data above shows the municipal water supply is below 1/5 of the applicable PFOS and PFOA criteria.

PFAS Recommendation
Based on the annual design flow and lack of nondomestic contributions, it is unlikely that the effluent will contain PFOS or PFOA. Therefore, **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 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. The current permit has variable daily maximum limits. These limits are re-evaluated 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.
- Section NR 106.07(3), Wis. Adm. Code requires weekly and monthly average limits for municipal treatment plants
- The maximum expected effluent pH has changed

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

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

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

Where:

A = 0.411 and B = 58.4 for a Coldwater Category 5 fishery, and
pH (s.u.) = that characteristic of the effluent

The effluent pH data was examined as part of this evaluation. A total of 263 sample results were reported from September 2019 to June 2026. The maximum reported value was 8.90 s.u. (Standard pH Units). The effluent pH was 8.84 s.u. or less 99% of the time. The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 9.03 s.u. The mean plus the standard deviation multiplied by a factor of 2.326, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 8.96 s.u. Therefore, a value of 9.03 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 9.0 s.u. into the equation above yields an ATC = 1.3 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-Q_{10} 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-Q_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit mg/L
2×ATC	2.6
1-Q_{10}	19

The 2×ATC method yields the most stringent limits for the Taylor Wastewater Treatment Facility.

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. This table has been expanded from the table in the current permit to include ammonia nitrogen limits throughout the pH range.

Daily Maximum Ammonia Nitrogen Limits – CW5

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

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code.

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as Cold-Water Community is calculated by the following equation, according to subchapter IV of NR 106, Wis. Adm. Code.

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

Where:

pH = the pH (s.u.) of the receiving water,
E =0.854,
C =the minimum of 2.85 or $1.45 \times 10^{(0.028 \times (25 - T))}$,
T = the temperature (°C) of the receiving water

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q_{10} (4-Q_3, if available) to derive weekly average limitations. The 30-day criteria are used with the 30-Q_5 (estimated as 85% of the 7-Q_2 if the 30-Q_5 is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature; 100% of the flow is used if the Temperature ≥ 16 °C, 25% of the flow is used if the Temperature < 11 °C, and 50% of the flow is used if the Temperature ≥ 11 °C but < 16 °C.

The "default" basin assumed values are used for Temperature and background ammonia concentrations, because minimum ambient data is available. The pH values are from the Trempealeau River. These values are shown in the table below, with the resulting criteria and effluent limitations.

Weekly and Monthly Ammonia Nitrogen Limits – CW

		April & May	June - September	October - March
Effluent Flow	Qe (MGD)	0.70	0.70	0.70
Background Information	7-Q_{10} (cfs)	26	26	26
	7-Q_2 (cfs)	38	38	38
	Ammonia (mg/L)	0.07	0.08	0.32
	Average Temperature (°C)	11	16	4.2
	Maximum Temperature (°C)	13	18	9.4
	pH (s.u.)	7.93	8.01	7.85
	% of Flow used	50	100	25
	Reference Weekly Flow (cfs)	13	26	6.5
	Reference Monthly Flow (cfs)	16.15	32.3	8.075
Criteria mg/L	4-day Chronic	6.71	4.79	7.47
	30-day Chronic	2.69	1.92	2.99
Effluent Limits mg/L	Weekly Average	86	118	50
	Monthly Average	42	57	23

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from October 2019 to June 2026.

Ammonia Nitrogen Effluent Data

Ammonia Nitrogen mg/L	April & May	June - September	October - March
1-day P_{99}	8.1	16.1	17.0
4-day P_{99}	4.4	8.8	9.2
30-day P_{99}	2.4	4.6	4.7
Mean	1.5	2.9	2.9
Std	1.7	3.4	3.6
Sample size	18	18	50
Range	0.1 - 5.2	0.1 - 11.3	<0.1 - 22

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

Reasonable Potential

The need to include ammonia limits in the permit is determined by calculating 99th upper percentile (or P_{99}) values for ammonia during the month ranges and comparing those to the calculated limits. Based on this comparison, daily limits are required year-round.

Conclusions and Recommendations

The variable daily maximum ammonia nitrogen limitation is recommended year-round. The table should be expanded from the table in the current permit to include ammonia nitrogen limits throughout the pH range.

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

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

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

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

Detention Time
The last permit term's flow data shows that, as a rolling average, > 180-d detention time was not provided at all times during the permit term. The greatest 180 day rolling average at Outfall 001 was 0.16 MGD (October 2019 to June 2026). Using a total pond volume of 21,249,300 gallons, the minimum detention time was 130 days. Since data shows that the facility provides < 180-d detention time, the requirement as described in s. NR 210.06(3)(h), Wis. Adm. Code is not met.

$$\text{Detention Time [days]} = \frac{\text{Total Pond Volume [MG]}}{\text{180-d average flow rate[mgd]}}$$

Quality of the wastewater being discharged
If effluent monitoring shows that the discharge can meet bacteria limits during the recreation season without disinfection, disinfection would not be required, according to s. NR 210.06(3)(d), Wis. Adm. Code, and as discussed in the "Disinfection Requirements for Discharges to Surface Waters" guidance. *E. coli* effluent monitoring should be included in the permit in order to ensure that the recreational use is being protected (criteria are being met) without disinfection. **Monitoring should be conducted at a minimum of 1x weekly for one disinfection season** during the permit term and the need for disinfection revisited at permit reissuance or if factors such as dilution or detention times change.

PART 5 – PHOSPHORUS

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

Since the Taylor Wastewater Treatment Facility has phosphorus limits in effect that are more stringent than 1.0 mg/L, the need for a TBEL will not be considered further.

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 this segment of the Trempealeau 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 the Trempealeau River
Qs = 100% of the 7-Q_2 of 38 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 = 0.684 MGD = 1.06 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 102.07(1)(b) to (c), Wis. Adm. 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

SWIMS ID	273008	10033947	10029752
Station Name	Trempealeau River at Cth P	Trempealeau River at Green Acre Road	Trempealeau River - Sechlerville Road
Waterbody	Trempealeau River	Trempealeau River	Trempealeau River
Sample Count	1	1	8
First Sample	06/13/2007	08/10/2011	05/27/2015
Last Sample	06/13/2007	08/10/2011	10/18/2015
Mean	0.298	0.280	0.310
Median	0.298	0.280	0.298

The impaired water listing of the Trempealeau River also indicates that effluent phosphorus limits equal to the water quality criterion are needed to prevent the discharge from contributing to further impairment of the receiving water. *The Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges (2020)* suggests setting effluent limits equal to the criterion in the absence of an EPA approved total maximum daily load for phosphorus discharges to phosphorus impaired waters.

The following table summarizes effluent total phosphorus monitoring data from October 2019 to June 2026.

Effluent Data

	Phosphorus mg/L
1-day P_{99}	1.19
4-day P_{99}	0.67
30-day P_{99}	0.40
Mean	0.28
Std	0.24
Sample size	98
Range	<0.027 - 1.07

Reasonable Potential Determination
The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion because the 30-day P_{99} of reported effluent total phosphorus data is greater than the calculated WQBEL. Therefore, **a WQBEL is required.**

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 phosphorus impaired water. **This final mass limit shall be 0.075 mg/L × 8.34 × 0.684 MGD = 0.43 lbs/day expressed as a six-month average.**

Variance Interim Limit

The facility has applied for an individual variance under s. 283.15, Wis. Stats. Eligibility for the variance is not included as part of this review. The current interim limit represents the Highest Attainable Condition (HAC) at the Taylor Wastewater Treatment Facility. If a variance is granted and approved by US Environmental Protection Agency, **an interim limit of 0.6 mg/L may be included in the permit.**

PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in 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 the months of May, June, October, and November from 2019 to 2026.

The table below summarizes the maximum temperatures reported during monitoring from May 2018 to June 2019.

Monthly Temperature Effluent Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Average (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN				
FEB				
MAR				
APR				
MAY	58	69	105	120
JUN	68	68	97	120
JUL				
AUG				
SEP				
OCT	52	53	77	120
NOV	41	43	93	120
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.

Comparing the representative highest effluent temperature to the calculated effluent limits determines the reasonable potential of exceeding the effluent limits. Based on this analysis, effluent limits are not recommended for temperature. **Therefore, no monitoring or effluent limits are recommended for temperature.**

PART 7 – WHOLE EFFLUENT TOXICITY (WET)

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

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

- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The **IWC of 14%** shown in the WET Checklist summary below was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

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

Where:

Q_e = annual average flow = 0.684 MGD = 1.06 cfs
f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 26 cfs ÷ 4 = 6.5 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the receiving water location, upstream and out of the influence of the mixing zone and any other known discharge. The specific receiving water location must be specified in the WPDES permit.

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

WET Checklist Summary

	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 14 %. **0 Points**
Historical Data	No tests available within past five years. (5 pts) **5 Points**	No tests available within past five years. (5 pts) **5 Points**
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	Coldwater (5 pts) **5 Points**	Same as Acute. **5 Points**
Chemical-Specific Data	Reasonable potential for limits for Ammonia based on ATC; (5 pts) Chloride and Copper detected. (2 pts) Additional Compounds of Concern: None **7 Points**	No reasonable potential for limits based on CTC; Ammonia, Chloride, and Copper detected. (3 pts) Additional Compounds of Concern: None **3 Points**
Additives	One Biocide (3 pts) and two Water Quality Conditioners added. (2 pts) Permittee has proper P chemical SOPs in place **5 Points**	All additives used more than once per 4 days. **5 Points**

	Acute	Chronic
Discharge Category	Two Industrial Contributors. (6 pts) **6 Points**	Same as Acute. **6 Points**
Wastewater Treatment	Secondary or Better **0 Points**	Same as Acute. **0 Points**
Downstream Impacts	No impacts known **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**28 Points**	**24 Points**
Recommended Monitoring Frequency (from Checklist):	3 tests during permit term	2 tests during permit term
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

- After consideration of the guidance provided in the Department's WET Program Guidance Document (2022) and other information described above, three acute and two chronic WET tests are recommended in the reissued permit.

PART 8 – ADDITIVE REVIEW

Unlike the metals and toxic substances evaluated in Part 2, most additives have not undergone the amount of toxicity testing needed to calculate water quality criteria. Instead, in cases where the minimum data requirements necessary to calculate a WQC are not met, a secondary value can be used to regulate the substance, according to s. NR 105.05, Wis. Adm. Code. Whenever an additive is discharged directly into a surface water without receiving treatment or an additive is used in the treatment process and is not expected to be removed before discharge, a review of the additive is needed. Secondary values should be derived according to s. NR 105.05, Wis. Adm. Code. Guidance related to conducting an additive review can be found in *Water Quality Review Procedures for Additives* (2022) https://dnr.wisconsin.gov/topic/Wastewater/Additives.html

Additive Parameters

Additive Name	Purpose of Additive	Frequency of Use	Max Usage Rate	Max Effluent Concentration (mg/L)	Use Restriction (mg/L)
Ferric Chloride	Phosphorus Control	>4 days/week	N/A	N/A	N/A
Hydrothol 191	Biocide	>4 days/week	15 gal/day	0.9	0.018
T125	Pond dye	>4 days/week	9 gal/day	0.5	0.00

With the current SOP in place, ferric chloride is not expected to be present in the final effluent discharge.

Hydrothol 191 cannot be approved at the proposed discharge concentration.

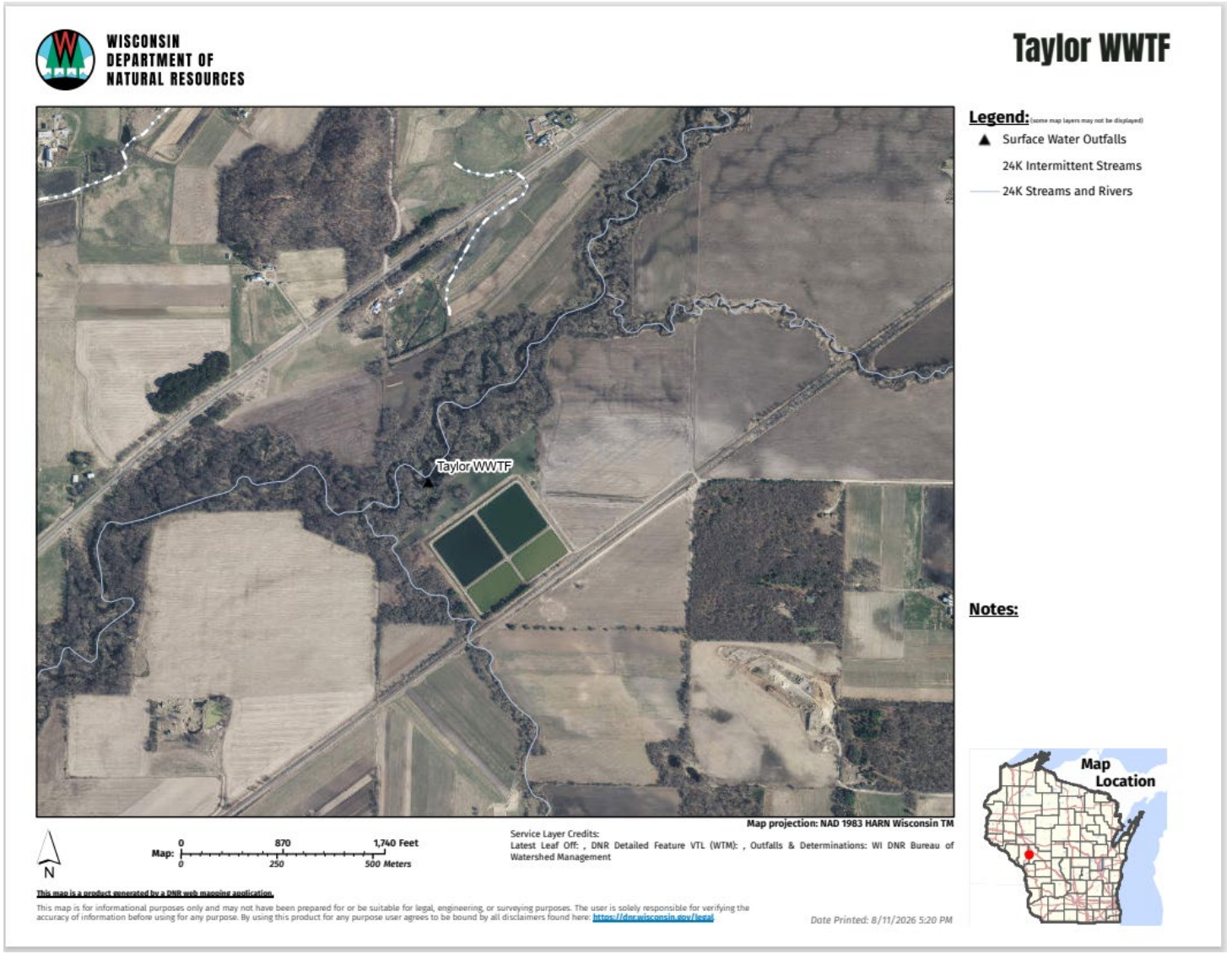
Sufficient toxicity information for **T125** has not been submitted. Therefore, secondary toxicity values have not been calculated and this **additive is not approved**.

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

							Temp Dates	Flow Dates
Facility:	Taylor WWTF		**7-Q_{10}:**	26.00	cfs			
Outfall(s):	001		**Dilution:**	25%		**Start:**	05/01/18	10/14/19
Date Prepared:	08/11/2026		**f:**	0		**End:**	06/30/19	06/15/26
Design Flow (Qe):	0.68	MGD	**Stream type:**	Cold water community				
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	6.2	:1			
			Calculation Needed?	YES				

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	35	47	68	6.50							
FEB	36	47	68	6.50							
MAR	39	51	69	6.50							
APR	47	57	70	6.50							
MAY	56	63	72	6.50	0.700	0.700	0	58	69	105	120
JUN	62	67	72	6.50	0.699	0.700	0	68	68	97	120
JUL	64	67	73	6.50							
AUG	63	65	73	6.50							
SEP	57	60	72	6.50							
OCT	49	53	70	6.50	0.700	0.700	0	52	53	77	120
NOV	41	48	69	6.50	0.650	0.712	0	41	43	93	120
DEC	37	47	69	6.50							


WISCONSIN
DEPARTMENT OF
NATURAL RESOURCES
Taylor WWTF
Taylor WWTF
Legend: (some map layers may not be displayed)
Surface Water Outfalls
24K Intermittent Streams
24K Streams and Rivers
Notes:
Map Location
Map projection: NAD 1983 HARN Wisconsin TM
N
Map:
0
870
1,740 Feet
0
250
500 Meters
Service Layer Credits:
Latest Leaf Off: , DNR Detailed Feature VTL (WTM): , Outfalls & Determinations: WI DNR Bureau of Watershed Management
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Facility Specific Phosphorus Variance Data Sheet

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

Section I: General Information

A. Name of Permittee: Village of Taylor WWTF

B. Facility Name: Taylor Wastewater Treatment Facility

C. Submitted by: Wisconsin Department of Natural Resources

D. State: Wisconsin **Substance:** Phosphorus **Date completed:** October 21, 2026

E. Permit #: WI-0021881-11-0 **WQSTS #:** (EPA USE ONLY)

F. Duration of Variance **Start Date:** April 01, 2027 **End Date:** March 31, 2032

G. Date of Variance Application: February 26, 2025

H. Is this permit a:
☒ **First time submittal for variance**
☐ **Renewal of a previous submittal for variance** *(Complete Section X)*

I. Description of proposed variance:
The Trempealeau River is listed as a Cold Water (Category 5), Class III trout stream, non-public water supply. The WQC for rivers like the Trempealeau River is 0.075 mg/L and the phosphorus WQBEL calculation formula is cited in s. NR 217.13(2)(a), Wis. Adm. Code. The calculated phosphorus WQBELs are 0.075 mg/L and 0.43 lbs/day as 6-month averages and 0.225 mg/L as a monthly average. During the previous permit term, the permittee was covered under the Phosphorus Multi-Discharger Variance (MDV), the Department has determined the permittee is no longer eligible for the MDV. A phosphorus interim limit of 1.0 mg/L as a monthly average was included in the previous permit along with a schedule to meet a more stringent interim limit of 0.6 mg/L as a monthly average (effective October 1, 2023). During the previous permit term, Taylor optimized the current chemical phosphorus treatment to meet the interim limit of 0.6 mg/L as a monthly average. The proposed permit includes requirements to implement on-site phosphorus optimization measures along with an interim limit of 0.6 mg/L as a monthly average.

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

Name	Email	Phone	Contribution
BetsyJo Howe	Betsyjo.howe@wisconsin.gov	608-419-4155	Permit Drafter/Variance Coordinator
Jenna Monahan	Jenna.monahan@wisconsin.gov	715 492-4323	Compliance Engineer
Benjamin Hartenbower	Benjamin.Hartenbower@wisconsin.gov	715 225-4705	Limit Calculator
Matt Claucherty	Matt.claucherty@wisconsin.gov	608-400-5596	Phosphorus/Economics

Section II: Criteria and Variance Information

A. Water Quality Standard from which variance is sought: 0.075 mg/L Phosphorus WQC

B. List other criteria likely to be affected by variance: None.

C. Source of Substance: Taylor WWTF discharges to the Trempealeau River within the Buffalo - Trempealeau River Basin. According to the Pollutant Load Ratio Estimation Tool (PRESTO) model, 99% of the phosphorus entering the river within the Trempealeau River Watershed is coming from nonpoint sources. The WWTF and one other facility contributes the remaining 1%.

Citation: PRESTO is a statewide GIS-based tool that compares the average annual phosphorus loads originating from point and nonpoint sources within a watershed. More information about this model is available at http://dnr.wi.gov/topic/surfacewater/presto.html.

D. Ambient Substance Concentration: >0.075 mg/L ☐ **Measured** ☒ **Estimated** ☐ **Default** ☐ **Unknown**

E. If measured or estimated, what was the basis? Include citation. The Trempealeau River is impaired for Total Phosphorus from mile points 0 to 81.51. Nearby monitoring stations indicate median values from 0.280 to 0.298 mg/L in

the Trempealeau River at SWIMS ID stations 273008, 10033947, and 10029752 using data from June 2007 to October 2015.

F. Average effluent discharge rate: 0.435 MGD (average 10/14/2019-6/15/2026) **Maximum effluent discharge rate:** 0.684 MGD (peak annual average)

G. Effluent Substance Concentration: 1-day P99 = 1.19 mg/L; 4-day P99 = 0.67 mg/L; 30-day P99= 0.40 mg/L; Mean = 0.28 mg/L ☒ **Measured** ☐ **Estimated** ☐ **Default** ☐ **Unknown**

H. If measured or estimated, what was the basis? Include Citation. Effluent concentration data collected from October 2019 to June 2026.

I. Type of HAC:
☐ **Type 1: HAC reflects waterbody/receiving water conditions**
☐ **Type 2: HAC reflects achievable effluent conditions**
☒ **Type 3: HAC reflects current effluent conditions**

J. Statement of HAC: The Department has determined the highest attainable condition of the receiving water is achieved through the application of the variance limit in the permit, combined with a permit requirement that the permittee implement its Phosphorus PMP. Thus, the HAC at commencement of this variance is 0.6 mg/L, which reflects the greatest phosphorus reduction achievable with the current treatment processes, in conjunction with the implementation of the permittee's Phosphorus PMP. The current effluent condition is reflective of on-site optimization measure that have already occurred. This HAC determination is based on the economic feasibility of available compliance options for Taylor WWTF at this time (see Economic Section below). The permittee may seek to renew this variance in the subsequent reissuance of this permit; the Department will reevaluate the HAC in its review of such a request. A subsequent HAC cannot be defined as less stringent than this HAC.

K. Variance Limit: 0.6 mg/L as a monthly average

L. Level currently achievable (LCA): 0.6 mg/L as a monthly average

M. What data were used to calculate the LCA, and how was the LCA derived? (*Immediate compliance with LCA is required.)*
The LCA is based upon 98 effluent data points from October 2019 – June 2026. The interim monthly average phosphorus limit of 0.6 mg/L is consistent with the 4-day P_{99} value.

N. Explain the basis used to determine the variance limit (which must be ≤ LCA). Include citation.
The variance limit is set at the interim limit of 0.6 mg/L which is consistent with the 4-day P_{99}. This value allows the permittee a limit they can meet without investing in additional treatment while allowing greater operational flexibility. This is consistent with the limits expressed in s. NR 217.17, Wis. Adm. Code, and the averaging period is consistent with the limit expression in accordance with s. NR 217.14(2), Wis. Adm. Code.

O. Select all factors applicable as the basis for the variance provided under 40 CFR 131.10(g). Summarize justification below: ☐ **1** ☐ **2** ☐ **3** ☐ **4** ☐ **5** ☒ **6**

Taylor has been successful in reducing effluent phosphorus concentrations, while covered under the multi-discharger variance (MDV), during the previous permit term through optimization of the chemical phosphorus treatment system. Taylor evaluated other treatment systems including the addition of tertiary treatment and upgrading to a membrane bio reactor activated sludge mechanical plant. However, these technologies are not cost-effective for the Village, as all major upgrades would increase the user rates to >2% of the median household income (MHI).

Given the long-term effects of phosphorus pollution, an interim monthly average limit of 0.6 mg/L is recommended along with implementation of the phosphorus Pollutant Minimization Program (PMP) plan and continued exploration of potential economically feasible phosphorus compliance options.

Section III: Location Information

A. Counties in which water quality is potentially impacted: Jackson & Trempealeau

B. Receiving waterbody at discharge point: Trempealeau River

C. Flows into which stream/river? Mississippi River **How many miles downstream?** ~58 mi

D. Coordinates of discharge point (UTM or Lat/Long): SW1/4, NW1/4, Section 8, T21N, R6W

E. What are the designated uses associated with this waterbody?
Cold Water (Category 5), Class III trout stream, non-public water supply, recreational use

F. Describe downstream waters:
The Trempealeau River downstream of the discharge, to the Mississippi River, is designated as Warm Water Sport Fish and impaired for phosphorus, E. coli, and mercury. The Mississippi River (Mississippi River Pool 6) at the confluence with the Trempealeau River is designated as Fish and Aquatic Life and is not considered impaired.

G. What is the distance from the point of discharge to the point downstream where the concentration of the substance falls to less than or equal to the applicable criterion of the substance?
The Trempealeau River is phosphorus impaired from the outfall location to where it enters the Mississippi River. The Mississippi River is impaired for phosphorus at that location.

H. Provide the equation used to calculate that distance.
N/A

I. Identify all other variance permittees for the same substance which discharge to the same stream, river, or waterbody in a location where the effects of the combined variances would have an additive effect on the waterbody: None

Please attach a map, photographs, or a simple schematic showing the location of the discharge point as well as all variances for the substance currently draining to this waterbody on a separate sheet.
See "Taylor WWTF Variance Outfall(s)" map.

J. Is the receiving waterbody on the CWA 303(d) list? If yes, please list the impairments below. ☒ **Yes** ☐ **No** ☐ **Unknown**

River Mile	Pollutant	Impairment
0 – 31.28	Mercury	Mercury Contaminated Fish Tissue
0 – 61.32; 61.98 – 81.51	Phosphorus	High Phosphorus Levels
31.28 – 51.72	E. coli	Recreational Restrictions - Pathogens

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

A. Are there any industrial users contributing phosphorus to the POTW? If so, please list.
N/A

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

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

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

Section V: Public Notice

A. Has a public notice been given for this proposed variance? ☒ **Yes** ☐ **No**

B. If yes, was a public hearing held as well? ☒ **Yes** ☐ **No** ☐ **N/A**

C. What type of notice was given?
☒ **Notice of variance included in notice for permit** ☐ **Separate notice of variance**

D. Date of public notice: Estimate Nov./Dec. **Date of hearing:** Estimate Dec./Jan.

E. **Were comments received from the public in regards to this notice or hearing?** ☐ **Yes** ☐ **No**
(If yes, please attach on a separate sheet)

Section VI: Human Health

A. **Is the receiving water designated as a Public Water Supply?** ☐ **Yes** ☒ **No**

B. **Applicable criteria affected by variance:** N/A

C. **Identify any expected impacts that the variance may have upon human health, and include any citations:** None.

Section VII: Aquatic Life and Environmental Impact

A. **Aquatic life use designation of receiving water:** Cold Water (Category 5), Class III trout stream

B. **Applicable criteria affected by variance:** 75 ug/L (0.075 mg/L), Fish and Aquatic Life Criteria

C. **Identify any environmental impacts to aquatic life expected to occur with this variance, and include any citations:**
Taylor WWTF lies within the Upper Trempealeau River Watershed. The watershed is approximately 112,348 acres and dominated by forests and agriculture. Agricultural nonpoint source pollution is degrading the streams within the watershed. According to the Pollutant Load Ratio Estimation Tool (PRESTO) model, 99% of the phosphorus entering the river within the Trempealeau River Watershed is coming from nonpoint sources. Portions of the Trempealeau River, including where the discharge is located, is impaired for phosphorus.

Implementation of the Village's PMPs will continue to reduce phosphorus and improve water quality and minimize environmental impacts.

Citation: WEx WDNR, Watershed Detail - Upper Trempealeau River

D. **List any Endangered or Threatened species known or likely to occur within the affected area, and include any citations:**
The following list contains the Federally Endangered and Threatened Species in Jackson County, Wisconsin from the U.S. Fish & Wildlife Service, Region 3, October 2026.

BIRDS
Piping Plover (E)
CLAMS
Higgins Eye (E)
Sheepnose Mussel (E)
Snuffbox Mussel (E)
Spectaclecase Mussel (E)
Winged Mapleleaf Mussel (E)
MAMMALS
Indiana bat (E)
Norther Long-eared Bat (E)
REPTILES
Eastern Massasauga (T)
SNAILS
Iowa Pleistocene snail (E)
INSECTS
Hine's emerald dragonfly (E)
Karner Blue Butterfly (E)
Poweshiek skipperling (E)
Rusty Patched Bumble Bee (E)
FLOWERING PLANTS
Dwarf lake iris (T)
Eastern prairie fringed orchid (T)
Fassett's locoweed (T)
Mead's Milkweed (T)
Northern wild monkswood (T)
Pitcher's thistle (T)

Prairie Bush Clover (T)

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

Section VIII: Economic Impact and Feasibility

A. Describe the permittee's current pollutant control technologies (treatment processes):
The Village of Taylor operates a fill and draw lagoon wastewater treatment facility consisting of two primary lagoon ponds and two secondary lagoon ponds. Domestic wastewater is conveyed from the collection system through a lift station and force main to pond 1 and pond 2, the wastewater is then split between ponds 3 and 4 for secondary treatment. Ponds 3 and 4 combine in the effluent manhole prior to discharge to the Trempealeau River. Chemical phosphorus treatment is achieved with ferric chloride, which is added at the lift station, where it undergoes mixing via the station's pumps before entering the lagoon system.

B. **What modifications would be necessary to comply with the current limits? List additional treatment processes and/or technologies available. Include any citations.**
Phosphorus is currently treated through chemical addition of ferric chloride at the lift station. During the previous permit term, the facility evaluated the potential benefit of integrating an aerator or mixer at the lift station to enhance treatment. Based on the assessment, it was determined neither option would provide substantial reduction in ferric chloride consumption or significantly improve effluent quality. An additional optimization study will be completed to review feasibility and effectiveness of implementing a multi-point dosing strategy for ferric chloride.

Compliance with the limits cannot be achieved through chemical addition alone. To achieve compliance with the limit, significant infrastructure upgrades would be needed. These upgrades could include the addition of tertiary treatment processes or the complete replacement of the existing lagoon system with a mechanical treatment facility and tertiary filtration. These significant infrastructure upgrades are not considered to be economically feasible.

Citation: Pollutant Minimization Plan, Taylor Phosphorus Mitigation, dated April 30, 2025

C. Identify any expected environmental impacts that would result from further treatment, and include any citations:
None

D. Is it technically and economically feasible for this permittee to modify the treatment process to comply with the water quality-based limits? ☐ **Yes** ☒ **No**

E. If treatment is possible, is it possible to comply with the limits on the substance? ☐ **Yes** ☒ **No**

F. If yes, what prevents this from being done? Include any citations.
Infrastructure upgrades would increase the user rates to 3.66% of the MHI.

G. List any alternatives to current practices that have been considered, and why they have been rejected as a course of action, including any citations:
The Village investigated several alternatives including upgrading to a Membrane Bio Reactor (MBR) mechanical plant, adaptive management, water quality trading (WQT), and land disposal of effluent among other alternatives. These alternatives were found to be infeasible prior to the previous permit reissuance, and the permittee was covered under the multi-discharger variance (MDV). The permittee is no longer eligible for the MDV and has applied for an individual phosphorus variance (IPV). During the reissued permit term while covered under the IPV, the permittee will implement the Pollutant Minimization Program (PMP) Plan and investigate WQT as the long-term compliance option.

Citation: Evaluation Report, Final Phosphorus Compliance Alternatives Evaluation dated December 13, 2018 and Pollutant Minimization Plan, Taylor Phosphorus Mitigation, dated April 30, 2025

H. Describe the economic impacts of compliance: ***{applies only to municipalities; include other cost estimates for industries}***

Economic Factor	Source

MHI	$59,531	Taylor village, Wisconsin - Census Bureau Search
Calculated preliminary screener	3.66% (MBR Facility), 4.27% (2015 EIA + Inflation)	Taylor IPV Economics
Secondary score value	6	Program Policy for Implementing Wisconsin's Multi-Discharger Variance for Phosphorus

Section IX: Multi-Discharger Variance Feasibility *(this assumes MDV approval)*

A. Does the facility meet the economic indicators to qualify for the MDV? ☒ **Yes** ☐ **No** ☐ **Unknown**

MDV secondary indicator score: **6**

B. Is it technically and economically feasible for this permittee to comply with a phosphorus WQBEL of 1 mg/L or lower? ☒ **Yes** ☐ **No** ☐ **Unknown**

C. Justification for considering an individual variance in lieu of the MDV:

The permittee is no longer eligible for the MDV. When using the county payment option, Wisconsin Statute requires a payment to be made. The permittee did not generate a payment in 2025 and future payments were unlikely to be made.

Section X: Compliance with Water Quality Standards

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

Phosphorus is currently treated through chemical addition of ferric chloride at the lift station. During the previous permit term, the facility optimized the chemical phosphorus treatment and evaluated the potential benefit of integrating an aerator or mixer at the lift station to enhance treatment. Based on the assessment, it was determined neither option would provide substantial reduction in ferric chloride consumption or significantly improve effluent quality.

Citation: Pollutant Minimization Plan – Taylor Phosphorus Mitigation, dated April 30, 2025

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

As conditions of the variance, the permittee is required to (a) maintain effluent quality at or below the interim effluent limitation specified in the proposed permit, (b) implement the phosphorus pollutant minimization measures specified in the Pollutant Minimization Program (PMP) Plan dated April 30, 2025, and (c) perform the actions listed in the Phosphorus Pollutant Minimization Program Schedule (see the Schedules section in the proposed permit).

Citation: Pollutant Minimization Plan – Taylor Phosphorus Mitigation, dated April 30, 2025

Section XI: Compliance with Previous Permit *(Variance Reissuances Only)*

A. Date of previous submittal: N/A **Date of EPA Approval:** N/A

B. Previous Permit #: N/A **Previous WQSTS #:** (EPA USE ONLY)

C. Effluent substance concentration: N/A **Variance Limit:** N/A

D. Target Value(s): N/A **Achieved?** ☐ **Yes** ☐ **No** ☐ **Partial**

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

Condition of Previous Variance	Compliance
N/A	☐ **Yes** ☐ **No**

Pollutant Minimization Plan (Revision 1)

Taylor Phosphorus Mitigation

Village of Taylor, WI

TAYWI 179728 | April 30, 2025

SEH

Building a Better World for All of Us®

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April 30, 2025

RE: Taylor Phosphorus Mitigation
Pollutant Minimization Plan (Revision 1)
(Revision 1)
Village of Taylor, WI
SEH No. TAYWI 179728 4.00

To Whom It May Concern,

Within this report, please find the revised Phosphorus Minimization Plan for Village of Taylor. The revised report incorporates comments received from WDNR on March 27, 2025. The intent of this report is to satisfy the requirements set forth by WDNR for the Individual Variance (see correspondence appended to this document.) This report outlines the steps Village of Taylor will take while in their variance period to help minimize phosphorus in their effluent as well as in the receiving watershed.

The application for the Individual Variance was submitted separately from this report. If you have any questions regarding this revised report as you review, please do not hesitate to reach out to me via email at dschaefer@sehinc.com, or call me at 920.287.0829.

Sincerely,

Daniel Schaefer, PE
Principal | Engineer VI
(Lic. CO, KY, MI, NC, TN, WI)

BA/hbh
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Pollutant Minimization Plan (Revision 1)

Taylor Phosphorus Mitigation
Village of Taylor, WI

Prepared for:
Village of Taylor
Taylor, WI

Prepared by:
Short Elliott Hendrickson Inc.
809 N. 8th Street, Suite 205
Sheboygan, WI 53081-4032
920.452.6603

I, Daniel Schaefer, PE, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that to the best of my knowledge, all of the information contained in this document is correct and the document was pre-pared in compliance with all applicable requirements in chs.NR 700 to 726, Wis. Adm. Code.

Daniel Schaefer, PE — E40481 — April 30, 2025

Daniel Schaefer, PE | PE Number | Date

Principle | Engineer VI (Mgr), Wastewater

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SEH is a registered trademark of Short Elliott Hendrickson Inc.

Pollutant Minimization Plan (Revision 1)

Taylor Phosphorus Mitigation

Prepared for Village of Taylor

1 Introduction

The purpose of this plan is to outline strategies that the Village of Taylor will employ to reduce levels of phosphorus in both the effluent from their Wastewater Treatment Plant (WWTP) and overall phosphorus in the surrounding watershed. This plan serves as the Pollutant Minimization Plan requested by Wisconsin Department of Natural Resources (WDNR) as a part of the Village of Taylor's application for an Individual Phosphorus Variance (IPV) for total phosphorus (TP) discharge requirements.

In this plan, TP mitigation strategies and action items are presented for implementation.

2 Background

2.1 Existing Conditions

The Village of Taylor operates a facultative fill-and-draw lagoon treatment system consisting of four ponds, which discharge into the Trempealeau River. Ferric chloride is introduced at the main lift station, where it undergoes mixing via the station's pumps before entering the lagoon system for treatment.

From January 2022 to December 2024, the facility achieved an average effluent phosphorus concentration of 0.19 mg/L, with a corresponding average effluent flow rate of 0.34 million gallons per day (MGD) when discharging. Influent phosphorus data collected from September 2022 through August 2023 indicated an average influent phosphorus concentration of 7.01 mg/L. Due to the limited availability of influent phosphorus sampling data, the observed concentrations exhibited considerable variability, ranging from 2.99 mg/L to 10.2 mg/L. Reference Appendix A for the wastewater data collected.

The vicinity surrounding the wastewater treatment plant (WWTP) primarily consists of undeveloped rural land, agricultural operations, and residential developments. There are no significant commercial or industrial contributors to the wastewater flow, nor are there any anticipated developments of this nature in the foreseeable future.

2.2 Previous Evaluations

Progress reports on optimization efforts have been previously submitted as required under the WPDES permit, in advance of the 2024 WPDES permit renewal submission. These reports included background information, effluent evaluations, and details on optimization strategies implemented within the Village of Taylor's wastewater treatment system.

As part of these efforts, jar testing was conducted by Hawkins to evaluate the effectiveness of various chemical treatments for phosphorus removal. The results confirmed ferric chloride as the most effective option for the Village's system. Consequently, ferric chloride has been, and continues to be, the primary chemical used for phosphorus precipitation.

Also, during this time period there was an evaluation of the potential benefits of integrating an aerator or mixer at the main lift station to enhance treatment efficiency. However, based on this assessment, it was determined that neither option would provide a substantial reduction in ferric chloride consumption or significantly improve effluent quality. As a result, no pilot testing or implementation of mixing equipment is planned.

A subsequent chemical feed optimization study could be conducted to review the feasibility and effectiveness of implementing a multi-point dosing strategy for ferric chloride. This approach would involve introducing the chemical at various points throughout the treatment process rather than a single location, potentially enhancing phosphorus removal efficiency and optimizing chemical usage. To achieve compliance with a 0.075 mg/L phosphorus effluent limit, significant infrastructure upgrades would be required. These could include the addition of tertiary treatment processes or the complete replacement of the existing lagoon system with a mechanical treatment facility and tertiary filtration.

2.3 IPV Eligibility

An economic variance to water quality standards may be granted if the impact of complying with the standard causes "widespread adverse social and economic impacts". EPA guidance documents for economic variances identify preliminary and secondary screeners in assessing "widespread adverse social and economic impacts" of complying with the standard. The preliminary screener for public entities is the impact complying with the water quality standard will have on sewer user charges, using the post-compliance user charge expressed as a percent of median household income (MHI). For user charges between 1 and 2 percent of the MHI, the impacts are expected to be "mid-range". EPA guidance indicates that user charges that exceed 2 percent of the MHI "may place an unreasonable financial burden on many of the households". Secondary indicators related to debt, socioeconomic and financial management data are also assessed to determine overall impact.

The individual phosphorus variance has to be approved by both DNR and EPA. The largest determining factor is the EPA economic worksheets to determine if the community may be eligible for an individual variance. EPA's Interim Economic Guidance for Water Quality Standards Secondary Score Calculation (Appendix B) is used to indicate whether a community may be eligible or not. Based on the calculations completed in Appendix B, the Village of Taylor is eligible for the individual variance based on widespread economic impacts for the project to achieve compliance with final calculated water quality based effluent limits (WQBELs) for phosphorus.

3 Phosphorus Mitigation Strategies

The Village of Taylor was previously covered under the Multi-Discharger Variance (MDV) for phosphorus under the previous permit term. However, based on improvement effluent phosphorus results, WDNR determined the Village was no longer eligible for the MDV and would need to apply for an individual variance. As a part of this application, WDNR requested that a Pollutant Minimization Plan be submitted for TP, detailing various mitigation strategies that

Village of Taylor can engage in to reduce phosphorus concentrations. These strategies are described in the following sections.

3.1 Mitigation Strategies

3.1.1 Residential Influent / Source Reduction

The Village of Taylor will implement a comprehensive public outreach strategy to reduce phosphorus contributions from residential sources. This initiative will commence with the development and distribution of educational materials detailing phosphorus reduction measures for both common and less conventional sources. These materials will emphasize best practices for fertilizer application, responsible household chemical disposal, and the identification of overlooked phosphorus contributors. Information can be dispersed through direct mailings, community workshops, utility bill inserts, and local outreach events to ensure broad engagement. These efforts will be initiated in the first year of the variance.

In the second year, the Village will expand outreach efforts through newspaper publications, the municipal website, or social media platforms to further educate residents on phosphorus reduction strategies and compliance challenges. By the third year, a targeted mailing campaign will be launched to inform residential customers about the benefits of composting food scraps as an alternative to disposal through the sewer system, further mitigating phosphorus loads in wastewater.

3.1.2 In-Plant Optimization

The Village will undertake a series of in-plant evaluations and optimization measures to enhance treatment efficiency and phosphorus removal. In the first year of the variance, a assessment of influent phosphorus concentrations will be conducted, along with evaluations at various critical points within the treatment process. By the third year, an optimization study will be performed to determine the most effective location for potential supplemental chemical addition within the treatment process. This assessment will ensure that phosphorus removal is maximized while maintaining process efficiency and cost-effectiveness.

3.1.3 Inflow/Infiltration (I/I) Management

The Village will continue its systematic assessment of the wastewater collection system throughout the variance period. This ongoing evaluation will include inspections of manholes and pipeline infrastructure to identify structural deficiencies. Any identified issues will be documented, and a corrective action plan will be developed to address necessary repairs. These assessments will be conducted over the five-year variance period to ensure continuous system integrity and performance.

In the third year, a targeted assessment will be conducted to identify stormwater inflow sources, including unauthorized storm drain and foundation/sump pump connections to the sewer system. Based on the findings, the Village will develop a short-term remediation plan and initiate corrective actions to mitigate excess stormwater infiltration, thereby improving overall system efficiency and reducing unnecessary treatment burdens.

3.1.4 Water Quality Trading: Scoping and Planning

In the first year of the variance, the Village will assess its eligibility for Water Quality Trading (WQT) as a compliance strategy. This initial evaluation will identify potential opportunities for obtaining phosphorus reduction credits through partnerships and mitigation projects.

By the second year, municipal administration will be formally educated on WQT mechanisms and compliance options. Concurrently, the Village will engage with county land conservation departments to explore non-point source pollution reduction projects that could contribute to phosphorus mitigation efforts within the watershed.

Throughout the variance period, the Village will actively seek potential partners and funding sources for WQT initiatives. By the third year, the focus will shift to identifying and evaluating specific project sites, establishing partnerships, and assessing streambank stabilization opportunities to enhance water quality and support phosphorus reduction goals.

3.1.5 Financial and Capacity Building

The Village of Taylor has not increased sewer user rates in recent years. During the variance period, the Village will conduct biennial evaluations of sewer user rates to assess financial sustainability and determine the need for additional revenue adjustments.

Additionally, the Village will actively pursue low-interest loan opportunities through the Clean Water Fund Program and explore grant funding for future infrastructure projects. A structured review of sewer user charges will be conducted annually to ensure adequate funding for Planned Management Plan (PMP) initiatives. A final financial assessment will be completed in the last year of the variance to verify long-term fiscal sustainability and continued support for wastewater system improvements.

3.2 Action Items Summary

Table 1 below summarizes the action items that will be implemented to help mitigate the potential for phosphorus pollutants in the Taylor Wastewater Treatment plant.

Table 1 – Summary of action items to be implemented

Action Items					
Residential Influent / Source Reduction	Year 1	Year 2	Year 3	Year 4	Year 5
Distribute information to residents encouraging specific phosphorus reduction measurements and atypical sources of phosphorus to avoid.	X				
Annual Phosphorus Source Control Newspaper Article and Website/Social Media post: Discuss phosphorus compliance challenges at the WTF and how sewer users can help.		X			
In-plant Optimization	Year 1	Year 2	Year 3	Year 4	Year 5
Measure sludge depth and plan for sludge management activities if necessary. Measure sludge production (gallons and % solids).					X

Evaluate phosphorus speciation of influent and/or at relevant points in the treatment train.	X				

Table 1 (Continued) – Summary of action items to be implemented

Action Items					
In-plant Optimization - continued	Year 1	Year 2	Year 3	Year 4	Year 5
Optimize location of chemical addition during treatment, including an evaluation of the level of mixing achieved.			X		
Conduct in-plant monitoring to evaluate the impacts of optimization actions.					X
Inflow/Infiltration	Year 1	Year 2	Year 3	Year 4	Year 5
Televise portions of the collection system to identify the specific locations and types of deficiencies of the system.	X	X	X	X	X
Conduct a manhole inspection and evaluation study to prioritize I/I activities.	X	X	X	X	X
Create a short-term plan to initiate collection system repair projects.			X		
Undertake collection system repairs at locations identified.					X
Water Quality Trading	Year 1	Year 2	Year 3	Year 4	Year 5
Determine eligible watershed area for implementing water quality trading projects to obtain credits.	X				
Brief municipal administration, board, or other decision makers regarding compliance alternatives such water quality trading.	X				
Contact local county land conservation department, WQT broker, or WQT clearinghouse to request assistance and convey WQT credit needs.	X	X	X	X	X
Meet with local county land conservation department to discuss criteria for a nonpoint source offset and/or obtain information about potential projects.		X			
Continue evaluation of potential partners within the watershed.			X		
Investigate phosphorus reduction measures on farm fields that receive municipal sludge.				X	
Complete survey of agricultural fields to identify highest-loading areas and possible WQT opportunities.			X		

Table 1 (Continued) – Summary of action items to be implemented

Action Items					
If a feasible project is identified, to formalize trade actions and develop a water quality trading plan.	X	X	X	X	X
Complete survey of riparian areas to determine need for steambank stabilization.			X		
Investigate funding opportunities for WQT projects. Pursue any viable funding opportunity.	X	X	X	X	X
Evaluate municipal land for potential nonpoint source projects.	X				
Financial and Capacity Building	Year 1	Year 2	Year 3	Year 4	Year 5
Evaluate sewer user rates and other revenues to determine financial sustainability and the need for additional revenue.	X		X		X
Investigate low or zero interest rate loan opportunities made available by the Wisconsin Clean Water Fund Program.	X	X	X	X	X
Investigate grant opportunities for future projects that will lead to compliance with the phosphorus WQBEL.	X	X	X	X	X
Continued annual review of sewer user charges to ensure adequate funds are available for PMP Plan actions.					X

BA/hbh

Appendix A

Summary of Wastewater Data

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
12/1/2021	0.43				
12/2/2021	0.061				
12/3/2021	0.028				
12/4/2021	0.051				
12/5/2021	0.05				
12/6/2021	0.05				
12/7/2021	0.044				
12/8/2021	0.047				
12/9/2021	0.047				
12/10/2021	0.054				
12/11/2021	0.049				
12/12/2021	0.047				
12/13/2021	0.056				
12/14/2021	0.048				
12/15/2021	0.056				
12/16/2021	0.044				
12/17/2021	0.042				
12/18/2021	0.055				
12/19/2021	0.054				
12/20/2021	0.053				
12/21/2021	0.047				
12/22/2021	0.064				
12/23/2021	0.061				
12/24/2021	0.06				
12/25/2021	0.037				
12/26/2021	0.057				
12/27/2021	0.04				
12/28/2021	0.05				
12/29/2021	0.05				
12/30/2021	0.043				
12/31/2021	0.06				
1/1/2022	0.051				
1/2/2022	0.05				
1/3/2022	0.053				
1/4/2022	0.05				
1/5/2022	0.046				
1/6/2022	0.013				
1/7/2022	0.032				
1/8/2022	0.072				
1/9/2022	0.048				
1/10/2022	0.05				
1/11/2022	0.051				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
1/12/2022	0.053				
1/13/2022	0.05				
1/14/2022	0.051				
1/15/2022	0.047				
1/16/2022	0.053				
1/17/2022	0.049				
1/18/2022	0.051				
1/19/2022	0.048				
1/20/2022	0.054				
1/21/2022	0.043				
1/22/2022	0.064				
1/23/2022	0.045				
1/24/2022	0.054				
1/25/2022	0.041				
1/26/2022	0.048				
1/27/2022	0.054				
1/28/2022	0.046				
1/29/2022	0.05				
1/30/2022	0.049				
1/31/2022	0.053				
2/1/2022	0.048				
2/2/2022	0.044				
2/3/2022	0.052				
2/4/2022	0.05				
2/5/2022	0.067				
2/6/2022	0.044				
2/7/2022	0.043				
2/8/2022	0.052				
2/9/2022	0.04				
2/10/2022	0.045				
2/11/2022	0.059				
2/12/2022	0.042				
2/13/2022	0.05				
2/14/2022	0.058				
2/15/2022	0.04				
2/16/2022	0.045				
2/17/2022	0.047				
2/18/2022	0.046				
2/19/2022	0.074				
2/20/2022	0.045				
2/21/2022	0.047				
2/22/2022	0.045				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
2/23/2022	0.04				
2/24/2022	0.041				
2/25/2022	0.045				
2/26/2022	0.056				
2/27/2022	0.049				
2/28/2022	0.054				
3/1/2022	0.046				
3/2/2022	0.042				
3/3/2022	0.051				
3/4/2022	0.034				
3/5/2022	0.071				
3/6/2022	0.07				
3/7/2022	0.049				
3/8/2022	0.054				
3/9/2022	0.047				
3/10/2022	0.052				
3/11/2022	0.05				
3/12/2022	0.054				
3/13/2022	0.048				
3/14/2022	0.059				
3/15/2022	0.05				
3/16/2022	0.052				
3/17/2022	0.051				
3/18/2022	0.051				
3/19/2022	0.072				
3/20/2022	0.056				
3/21/2022	0.044				
3/22/2022	0.052				
3/23/2022	0.054				
3/24/2022	0.051				
3/25/2022	0.061				
3/26/2022	0.058				
3/27/2022	0.057				
3/28/2022	0.061				
3/29/2022	0.049				
3/30/2022	0.052				
3/31/2022	0.037				0
4/1/2022	0.05				
4/2/2022	0.074				
4/3/2022	0.05				
4/4/2022	0.047				
4/5/2022	0.04				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
4/6/2022	0.038				
4/7/2022	0.041				
4/8/2022	0.048				
4/9/2022	0.037				
4/10/2022	0.041				
4/11/2022	0.042				
4/12/2022	0.04				
4/13/2022	0.035				
4/14/2022	0.039				
4/15/2022	0.048				
4/16/2022	0.05				
4/17/2022	0.037				
4/18/2022	0.029				
4/19/2022	0.046				
4/20/2022	0.036				
4/21/2022	0.038				
4/22/2022	0.04				
4/23/2022	0.048				
4/24/2022	0.041				
4/25/2022	0.053				
4/26/2022	0.039				
4/27/2022	0.048				
4/28/2022	0.032				
4/29/2022	0.043				
4/30/2022	0.045				
5/1/2022	0.046				
5/2/2022	0.041				
5/3/2022	0.047				
5/4/2022	0.026				
5/5/2022	0.039				
5/6/2022	0.038				
5/7/2022	0.043				
5/8/2022	0.04				
5/9/2022	0.042				
5/10/2022	0.077				
5/11/2022	0.041				
5/12/2022	0.04				
5/13/2022	0.057				
5/14/2022	0.042				
5/15/2022	0.044				
5/16/2022	0.032		0.7	0.16	
5/17/2022	0.035		0.7	0.2	

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
5/18/2022	0.035		0.7		
5/19/2022	0.036		0.7		
5/20/2022	0.032		0.7		
5/21/2022	0.045		0.6		
5/22/2022	0.039		0.38		
5/23/2022	0.039		0.38	0.26	
5/24/2022	0.036		0.38	0.2	
5/25/2022	0.04		0.38		
5/26/2022	0.037		0.38		
5/27/2022	0.053		0.38		
5/28/2022	0.023		0.36		
5/29/2022	0.044		0.36		
5/30/2022	0.044		0.36		
5/31/2022	0.061		0.36	0.49	16.96
6/1/2022	0.041		0.3	0.19	
6/2/2022	0.041				
6/3/2022	0.041				
6/4/2022	0.051				
6/5/2022	0.044				
6/6/2022	0.044				
6/7/2022	0.041				
6/8/2022	0.041				
6/9/2022	0.037				
6/10/2022	0.04				
6/11/2022	0.042				
6/12/2022	0.03				
6/13/2022	0.038				
6/14/2022	0.039				
6/15/2022	0.045				
6/16/2022	0.07				
6/17/2022	0.018				
6/18/2022	0.019				
6/19/2022	0.019				
6/20/2022	0.053				
6/21/2022	0.03				
6/22/2022	0.033				
6/23/2022	0.05				
6/24/2022	0.03				
6/25/2022	0.054				
6/26/2022	0.058				
6/27/2022	0.033				
6/28/2022	0.049				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
6/29/2022	0.028				
6/30/2022	0.047				0.47
7/1/2022	0.037				
7/2/2022	0.037				
7/3/2022	0.036				
7/4/2022	0.032				
7/5/2022	0.027				
7/6/2022	0.032				
7/7/2022	0.044				
7/8/2022	0.045				
7/9/2022	0.042				
7/10/2022	0.038				
7/11/2022	0.049				
7/12/2022	0.027				
7/13/2022	0.045				
7/14/2022	0.021				
7/15/2022	0.034				
7/16/2022	0.034				
7/17/2022	0.033				
7/18/2022	0.036				
7/19/2022	0.035				
7/20/2022	0.03				
7/21/2022	0.044				
7/22/2022	0.029				
7/23/2022	0.029				
7/24/2022	0.031				
7/25/2022	0.036				
7/26/2022	0.037				
7/27/2022	0.028				
7/28/2022	0.025				
7/29/2022	0.035				
7/30/2022	0.028				
7/31/2022	0.032				
8/1/2022	0.041				
8/2/2022	0.032				
8/3/2022	0.02				
8/4/2022	0.033				
8/5/2022	0.03				
8/6/2022	0.035				
8/7/2022	0.032				
8/8/2022	0.031				
8/9/2022	0.027				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
8/10/2022	0.028				
8/11/2022	0.026				
8/12/2022	0.024				
8/13/2022	0.032				
8/14/2022	0.032				
8/15/2022	0.045				
8/16/2022	0.024				
8/17/2022	0.024				
8/18/2022	0.03				
8/19/2022	0.027				
8/20/2022	0.047				
8/21/2022	0.042				
8/22/2022	0.037				
8/23/2022	0.055				
8/24/2022	0.042				
8/25/2022	0.048				
8/26/2022	0.04				
8/27/2022	0.03				
8/28/2022	0.036				
8/29/2022	0.039				
8/30/2022	0.029				
8/31/2022	0.034				
9/1/2022	0.029				
9/2/2022	0.028				
9/3/2022	0.027				
9/4/2022	0.029				
9/5/2022	0.023				
9/6/2022	0.05				
9/7/2022	0.026	2.99			
9/8/2022	0.032				
9/9/2022	0.033				
9/10/2022	0.02				
9/11/2022	0.032				
9/12/2022	0.04				
9/13/2022	0.022				
9/14/2022	0.035				
9/15/2022	0.027				
9/16/2022	0.028				
9/17/2022	0.024				
9/18/2022	0.047				
9/19/2022	0.017				
9/20/2022	0.024				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
9/21/2022	0.018	7.57			
9/22/2022	0.03				
9/23/2022	0.026				
9/24/2022	0.027				
9/25/2022	0.032				
9/26/2022	0.034				
9/27/2022	0.029				
9/28/2022	0.027				
9/29/2022	0.027				
9/30/2022	0.023				
10/1/2022	0.062				
10/2/2022	0.036				
10/3/2022	0.02				
10/4/2022	0.015				
10/5/2022	0.027	10.2		0.6	
10/6/2022	0.035				
10/7/2022	0.027				
10/8/2022	0.022				
10/9/2022	0.03				
10/10/2022	0.038				
10/11/2022	0.036				
10/12/2022	0.031				
10/13/2022	0.026				
10/14/2022	0.027				
10/15/2022	0.03				
10/16/2022	0.02				
10/17/2022	0.033				
10/18/2022	0.027				
10/19/2022	0.025	6.54		1.12	
10/20/2022	0.048				
10/21/2022	0.022				
10/22/2022	0.027				
10/23/2022	0.032				
10/24/2022	0.026			0.17	
10/25/2022	0.031		0.64		
10/26/2022	0.027		0.635	0.16	
10/27/2022	0.04		0.55		
10/28/2022	0.024		0.54		
10/29/2022	0.029		0.53		
10/30/2022	0.037		0.54		
10/31/2022	0.037		0.48	0.13	5.01
11/1/2022	0.032		0.46		

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
11/2/2022	0.02	7.63	0.38	0.08	
11/3/2022	0.028		0.34		
11/4/2022	0.033		0.29		
11/5/2022	0.025		0.23		
11/6/2022	0.034		0.21		
11/7/2022	0.036		0.21	0.14	
11/8/2022	0.033		0.18		
11/9/2022	0.03		0.17	0.15	
11/10/2022	0.029		0.14		
11/11/2022	0.034		0.11		
11/12/2022	0.034		0.1		
11/13/2022	0.05		0.09		
11/14/2022	0.034				
11/15/2022	0.029				
11/16/2022	0.035	7.54			
11/17/2022	0.02				
11/18/2022	0.037				
11/19/2022	0.027				
11/20/2022	0.026				
11/21/2022	0.03				
11/22/2022	0.028				
11/23/2022	0.029				
11/24/2022	0.046				
11/25/2022	0.046				
11/26/2022	0.046				
11/27/2022	0.031				
11/28/2022	0.032				
11/29/2022	0.035				
11/30/2022	0.022				2.88
12/1/2022	0.03				
12/2/2022	0.031				
12/3/2022	0.38				
12/4/2022	0.03				
12/5/2022	0.035				
12/6/2022	0.032				
12/7/2022	0.023	5.6			
12/8/2022	0.026				
12/9/2022	0.029				
12/10/2022	0.039				
12/11/2022	0.033				
12/12/2022	0.036				
12/13/2022	0.027				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
12/14/2022	0.035				
12/15/2022	0.038				
12/16/2022	0.028				
12/17/2022	0.026				
12/18/2022	0.031				
12/19/2022	0.041				
12/20/2022	0.023				
12/21/2022	0.038	4.37			
12/22/2022	0.041				
12/23/2022	0.022				
12/24/2022	0.032				
12/25/2022	0.034				
12/26/2022	0.041				
12/27/2022	0.036				
12/28/2022	0.031				
12/29/2022	0.04				
12/30/2022	0.037				
12/31/2022	0.039				
1/1/2023	0.037				
1/2/2023	0.04				
1/3/2023	0.045				
1/4/2023	0.034	6.06			
1/5/2023	0.044				
1/6/2023	0.042				
1/7/2023	0.029				
1/8/2023	0.044				
1/9/2023	0.037				
1/10/2023	0.04				
1/11/2023	0.034				
1/12/2023	0.038				
1/13/2023	0.039				
1/14/2023	0.038				
1/15/2023	0.041				
1/16/2023	0.052				
1/17/2023	0.033				
1/18/2023	0.027	4.11			
1/19/2023	0.045				
1/20/2023	0.027				
1/21/2023	0.031				
1/22/2023	0.035				
1/23/2023	0.037				
1/24/2023	0.032				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
1/25/2023	0.036				
1/26/2023	0.033				
1/27/2023	0.033				
1/28/2023	0.025				
1/29/2023	0.035				
1/30/2023	0.035				
1/31/2023	0.027				
2/1/2023	0.041	39.8			
2/2/2023	0.06				
2/3/2023	0.035				
2/4/2023	0.081				
2/5/2023	0.035				
2/6/2023	0.019				
2/7/2023	0.029				
2/8/2023	0.047				
2/9/2023	0.033				
2/10/2023	0.033				
2/11/2023	0.028				
2/12/2023	0.039				
2/13/2023	0.041				
2/14/2023	0.037				
2/15/2023	0.033	5.57			
2/16/2023	0.036				
2/17/2023	0.042				
2/18/2023	0.058				
2/19/2023	0.054				
2/20/2023	0.062				
2/21/2023	0.065				
2/22/2023	0.036				
2/23/2023	0.039				
2/24/2023	0.023				
2/25/2023	0.035				
2/26/2023	0.034				
2/27/2023	0.047				
2/28/2023	0.026				
3/1/2023	0.035	3.76			
3/2/2023	0.041				
3/3/2023	0.046				
3/4/2023	0.03				
3/5/2023	0.027				
3/6/2023	0.039				
3/7/2023	0.036				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
3/8/2023	0.033				
3/9/2023	0.049				
3/10/2023	0.023				
3/11/2023	0.031				
3/12/2023	0.036				
3/13/2023	0.04				
3/14/2023	0.03				
3/15/2023	0.043	6.23			
3/16/2023	0.038				
3/17/2023	0.033				
3/18/2023	0.048				
3/19/2023	0.04				
3/20/2023	0.053				
3/21/2023	0.038				
3/22/2023	0.041				
3/23/2023	0.034				
3/24/2023	0.048				
3/25/2023	0.033				
3/26/2023	0.044				
3/27/2023	0.057				
3/28/2023	0.045				
3/29/2023	0.043				
3/30/2023	0.043				
3/31/2023	0.054				
4/1/2023	0.038				
4/2/2023	0.051				
4/3/2023	0.032				
4/4/2023	0.043				
4/5/2023	0.055	3.04			
4/6/2023	0.068				
4/7/2023	0.053				
4/8/2023	0.055				
4/9/2023	0.057				
4/10/2023	0.067				
4/11/2023	0.052				
4/12/2023	0.051				
4/13/2023	0.051				
4/14/2023	0.048				
4/15/2023	0.039				
4/16/2023	0.059				
4/17/2023	0.051				
4/18/2023	0.041				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
4/19/2023	0.05	4.67			
4/20/2023	0.083				
4/21/2023	0.087				
4/22/2023	0.088				
4/23/2023	0.104				
4/24/2023	0.107				
4/25/2023	0.073				
4/26/2023	0.068				
4/27/2023	0.053				
4/28/2023	0.061				
4/29/2023	0.085				
4/30/2023	0.05				
5/1/2023	0.067				
5/2/2023	0.07				
5/3/2023	0.044	3.14			
5/4/2023	0.049				
5/5/2023	0.047				
5/6/2023	0.05				
5/7/2023	0.061				
5/8/2023	0.09				
5/9/2023	0.066				
5/10/2023	0.057				
5/11/2023	0.071				
5/12/2023	0.06				
5/13/2023	0.054				
5/14/2023	0.063				
5/15/2023	0.07				
5/16/2023	0.051				
5/17/2023	0.04	4.47		0.23	
5/18/2023	0.063				
5/19/2023	0.063				
5/20/2023	0.038				
5/21/2023	0.057				
5/22/2023	0.059				
5/23/2023	0.054				
5/24/2023	0.042				
5/25/2023	0.047				
5/26/2023	0.056				
5/27/2023	0.029				
5/28/2023	0.046				
5/29/2023	0.048				
5/30/2023	0.044				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
5/31/2023	0.045		0.354	0.31	0.91
6/1/2023	0.038		0.271		
6/2/2023	0.045		0.463		
6/3/2023	0.037		0.419		
6/4/2023	0.038		0.337		
6/5/2023	0.042		0.346	0.28	
6/6/2023	0.045		0.454		
6/7/2023	0.028	6.46	0.364	0.23	
6/8/2023	0.04		0.46		
6/9/2023	0.05		0.343		
6/10/2023	0.016		0.581		
6/11/2023	0.038		0.465		
6/12/2023	0.041		0.334	0.18	
6/13/2023	0.034				
6/14/2023	0.041				
6/15/2023	0.045				
6/16/2023	0.032				
6/17/2023	0.031				
6/18/2023	0.034				
6/19/2023	0.035				
6/20/2023	0.031				
6/21/2023	0.042	6.34		0.1	
6/22/2023	0.04				
6/23/2023	0.025				
6/24/2023	0.033				
6/25/2023	0.036				
6/26/2023	0.033				
6/27/2023	0.04				
6/28/2023	0.028				
6/29/2023	0.027				
6/30/2023	0.061				9.28
7/1/2023	0.061				
7/2/2023	0.035				
7/3/2023	0.032				
7/4/2023	0.032				
7/5/2023	0.069	5.19			
7/6/2023	0.03				
7/7/2023	0.108				
7/8/2023	0.095				
7/9/2023	0.106				
7/10/2023	0.103				
7/11/2023	0.123				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
7/12/2023	0.084				
7/13/2023	0.078				
7/14/2023	0.025				
7/15/2023	0.033				
7/16/2023	0.027				
7/17/2023	0.032				
7/18/2023	0.038				
7/19/2023	0.031	4.57			
7/20/2023	0.029				
7/21/2023	0.036				
7/22/2023	0.031				
7/23/2023	0.038				
7/24/2023	0.044				
7/25/2023	0.019				
7/26/2023	0.026				
7/27/2023	0.037				
7/28/2023	0.029				
7/29/2023	0.029				
7/30/2023	0.027				
7/31/2023	0.033				
8/1/2023	0.033				
8/2/2023	0.024	5.88			
8/3/2023	0.032				
8/4/2023	0.036				
8/5/2023	0.028				
8/6/2023	0.036				
8/7/2023	0.035				
8/8/2023	0.034				
8/9/2023	0.026				
8/10/2023	0.034				
8/11/2023	0.03				
8/12/2023	0.036				
8/13/2023	0.033				
8/14/2023	0.039				
8/15/2023	0.033				
8/16/2023	0.021	6.58			
8/17/2023	0.082				
8/18/2023	0.087				
8/19/2023	0.036				
8/20/2023	0.044				
8/21/2023	0.032				
8/22/2023	0.032				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
8/23/2023	0.027				
8/24/2023	0.035				
8/25/2023	0.03				
8/26/2023	0.03				
8/27/2023	0.027				
8/28/2023	0.038				
8/29/2023	0.025				
8/30/2023	0.029				
8/31/2023	0.026				
9/1/2023	0.024				
9/2/2023	0.03				
9/3/2023	0.029				
9/4/2023	0.03				
9/5/2023	0.04				
9/6/2023	0.021				
9/7/2023	0.046				
9/8/2023	0.028				
9/9/2023	0.022				
9/10/2023	0.027				
9/11/2023	0.035				
9/12/2023	0.028				
9/13/2023	0.021				
9/14/2023	0.028				
9/15/2023	0.022				
9/16/2023	0.041				
9/17/2023	0.028				
9/18/2023	0.014				
9/19/2023	0.02				
9/20/2023	0.028				
9/21/2023	0.027				
9/22/2023	0.032				
9/23/2023	0.019				
9/24/2023	0.03				
9/25/2023	0.04				
9/26/2023	0.021				
9/27/2023	0.037				
9/28/2023	0.027				
9/29/2023	0.024				
9/30/2023	0.026				
10/1/2023	0.036				
10/2/2023	0.034				
10/3/2023	0.032				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
10/4/2023	0.026				
10/5/2023	0.025				
10/6/2023	0.036				
10/7/2023	0.021				
10/8/2023	0.03				
10/9/2023	0.036				
10/10/2023	0.026				
10/11/2023	0.023				
10/12/2023	0.026				
10/13/2023	0.028				
10/14/2023	0.03				
10/15/2023	0.035				
10/16/2023	0.034				
10/17/2023	0.027				
10/18/2023	0.028				
10/19/2023	0.032				
10/20/2023	0.03				
10/21/2023	0.03				
10/22/2023	0.03				
10/23/2023	0.033			0.1	
10/24/2023	0.034		0.342		
10/25/2023	0.069		0.451	0.09	
10/26/2023	0.168		0.265		
10/27/2023	0.113		0.261		
10/28/2023	0.091		0.231		
10/29/2023	0.09		0.595		
10/30/2023	0.08		0.493	0.11	
10/31/2023	0.071		0.463		2.59
11/1/2023	0.068		0.415	0.11	
11/2/2023	0.071		0.381		
11/3/2023	0.056		0.39		
11/4/2023	0.061		0.335		
11/5/2023	0.059		0.331		
11/6/2023	0.064		0.24	0.12	
11/7/2023	0.055		0.226		
11/8/2023	0.055		0.199	0.12	
11/9/2023	0.053				
11/10/2023	0.058				
11/11/2023	0.038				
11/12/2023	0.061				
11/13/2023	0.033				
11/14/2023	0.047				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
11/15/2023	0.043				
11/16/2023	0.048				
11/17/2023	0.037				
11/18/2023	0.043				
11/19/2023	0.044				
11/20/2023	0.035				
11/21/2023	0.042				
11/22/2023	0.041				
11/23/2023	0.037				
11/24/2023	0.04				
11/25/2023	0.04				
11/26/2023	0.034				
11/27/2023	0.032				
11/28/2023	0.052				
11/29/2023	0.037				
11/30/2023	0.037				2.1
12/1/2023	0.034				
12/2/2023	0.031				
12/3/2023	0.035				
12/4/2023	0.039				
12/5/2023	0.035				
12/6/2023	0.042				
12/7/2023	0.033				
12/8/2023	0.034				
12/9/2023	0.037				
12/10/2023	0.03				
12/11/2023	0.04				
12/12/2023	0.038				
12/13/2023	0.031				
12/14/2023	0.032				
12/15/2023	0.044				
12/16/2023	0.03				
12/17/2023	0.034				
12/18/2023	0.041				
12/19/2023	0.028				
12/20/2023	0.035				
12/21/2023	0.04				
12/22/2023	0.041				
12/23/2023	0.027				
12/24/2023	0.03				
12/25/2023	0.037				
12/26/2023	0.031				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
12/27/2023	0.034				
12/28/2023	0.032				
12/29/2023	0.043				
12/30/2023	0.038				
12/31/2023	0.037				
1/1/2024	0.036				
1/2/2024	0.042				
1/3/2024	0.029				
1/4/2024	0.034				
1/5/2024	0.04				
1/6/2024	0.025				
1/7/2024	0.044				
1/8/2024	0.033				
1/9/2024	0.033				
1/10/2024	0.028				
1/11/2024	0.037				
1/12/2024	0.028				
1/13/2024	0.034				
1/14/2024	0.037				
1/15/2024	0.035				
1/16/2024	0.034				
1/17/2024	0.036				
1/18/2024	0.045				
1/19/2024	0.029				
1/20/2024	0.036				
1/21/2024	0.039				
1/22/2024	0.045				
1/23/2024	0.028				
1/24/2024	0.031				
1/25/2024	0.032				
1/26/2024	0.032				
1/27/2024	0.029				
1/28/2024	0.035				
1/29/2024	0.038				
1/30/2024	0.03				
1/31/2024	0.035				
2/1/2024	0.031				
2/2/2024	0.032				
2/3/2024	0.031				
2/4/2024	0.033				
2/5/2024	0.037				
2/6/2024	0.032				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
2/7/2024	0.029				
2/8/2024	0.04				
2/9/2024	0.031				
2/10/2024	0.027				
2/11/2024	0.034				
2/12/2024	0.039				
2/13/2024	0.03				
2/14/2024	0.031				
2/15/2024	0.034				
2/16/2024	0.031				
2/17/2024	0.036				
2/18/2024	0.028				
2/19/2024	0.031				
2/20/2024	0.03				
2/21/2024	0.027				
2/22/2024	0.029				
2/23/2024	0.032				
2/24/2024	0.03				
2/25/2024	0.03				
2/26/2024	0.036				
2/27/2024	0.026				
2/28/2024	0.027				
2/29/2024	0.034				
3/1/2024	0.031				
3/2/2024	0.031				
3/3/2024	0.029				
3/4/2024	0.033				
3/5/2024	0.03				
3/6/2024	0.023				
3/7/2024	0.034				
3/8/2024	0.028				
3/9/2024	0.024				
3/10/2024	0.029				
3/11/2024	0.033				
3/12/2024	0.028				
3/13/2024	0.03				
3/14/2024	0.029				
3/15/2024	0.031				
3/16/2024	0.029				
3/17/2024	0.028				
3/18/2024	0.035				
3/19/2024	0.026				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
3/20/2024	0.025				
3/21/2024	0.029				
3/22/2024	0.057				
3/23/2024	0.026				
3/24/2024	0.029				
3/25/2024	0.032				
3/26/2024	0.027				
3/27/2024	0.028				
3/28/2024	0.031				
3/29/2024	0.032				
3/30/2024	0.033				
3/31/2024	0.026				
4/1/2024	0.032				
4/2/2024	0.029				
4/3/2024	0.031				
4/4/2024	0.035				
4/5/2024	0.032				
4/6/2024	0.031				
4/7/2024	0.033				
4/8/2024	0.035				
4/9/2024	0.031				
4/10/2024	0.036				
4/11/2024	0.034				
4/12/2024	0.039				
4/13/2024	0.028				
4/14/2024	0.038				
4/15/2024	0.044				
4/16/2024	0.03				
4/17/2024	0.031				
4/18/2024	0.041				
4/19/2024	0.041				
4/20/2024	0.041				
4/21/2024	0.042				
4/22/2024	0.045				
4/23/2024	0.037				
4/24/2024	0.036				
4/25/2024	0.039				
4/26/2024	0.037				
4/27/2024	0.029				
4/28/2024	0.04				
4/29/2024	0.04				
4/30/2024	0.043				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
5/1/2024	0.045				
5/2/2024	0.046				
5/3/2024	0.056				
5/4/2024	0.045				
5/5/2024	0.052				
5/6/2024	0.062				
5/7/2024	0.051				
5/8/2024	0.056				
5/9/2024	0.057				
5/10/2024	0.054				
5/11/2024	0.048				
5/12/2024	0.057				
5/13/2024	0.047		0.41	0.18	
5/14/2024	0.046		0.365		
5/15/2024	0.049		0.347	0.19	
5/16/2024	0.046		0.355		
5/17/2024	0.039		0.335		
5/18/2024	0.047		0.288		
5/19/2024	0.043		0.338		
5/20/2024	0.038		0.3	0.16	
5/21/2024	0.042		0.311		
5/22/2024	0.041		0.278	0.15	
5/23/2024	0.049		0.258		
5/24/2024	0.042		0.516		
5/25/2024	0.043		0.487		
5/26/2024	0.041		0.321		
5/27/2024	0.046		0.413		
5/28/2024	0.047		0.333	0.13	
5/29/2024	0.046		0.33	0.12	
5/30/2024	0.045		0.372		
5/31/2024	0.045		0.289		8.59
6/1/2024	0.041		0.288		
6/2/2024	0.033		0.245		
6/3/2024	0.042		0.211	0.13	
6/4/2024	0.035		0.212		
6/5/2024	0.036		0.185	0.13	
6/6/2024	0.044		0.203		
6/7/2024	0.041		0.138		
6/8/2024	0.037		0.109		
6/9/2024	0.031		0.09		
6/10/2024	0.041				
6/11/2024	0.037				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
6/12/2024	0.037				
6/13/2024	0.03				
6/14/2024	0.053				
6/15/2024	0.029				
6/16/2024	0.036				
6/17/2024	0.043				
6/18/2024	0.036				
6/19/2024	0.037				
6/20/2024	0.05				
6/21/2024	0.042				
6/22/2024	0.04				
6/23/2024	0.083				
6/24/2024	0.102				
6/25/2024	0.079				
6/26/2024	0.071				
6/27/2024	0.07				
6/28/2024	0.12				
6/29/2024	0.067				
6/30/2024	0.073				1.82
7/1/2024	0.063				
7/2/2024	0.045				
7/3/2024	0.069				
7/4/2024	0.068				
7/5/2024	0.085				
7/6/2024	0.095				
7/7/2024	0.088				
7/8/2024	0.089				
7/9/2024	0.075				
7/10/2024	0.058				
7/11/2024	0.066				
7/12/2024	0.069				
7/13/2024	0.048				
7/14/2024	0.066				
7/15/2024	0.088				
7/16/2024	0.101				
7/17/2024	0.076				
7/18/2024	0.076				
7/19/2024	0.068				
7/20/2024	0.071				
7/21/2024	0.072				
7/22/2024	0.066				
7/23/2024	0.057				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
7/24/2024	0.051				
7/25/2024	0.054				
7/26/2024	0.059				
7/27/2024	0.043				
7/28/2024	0.052				
7/29/2024	0.065				
7/30/2024	0.037				
7/31/2024	0.045				
8/1/2024	0.042				
8/2/2024	0.046				
8/3/2024	0.041				
8/4/2024	0.054				
8/5/2024	0.045				
8/6/2024	0.054				
8/7/2024	0.044				
8/8/2024	0.054				
8/9/2024	0.055				
8/10/2024	0.041				
8/11/2024	0.058				
8/12/2024	0.048				
8/13/2024	0.04				
8/14/2024	0.044				
8/15/2024	0.045				
8/16/2024	0.04				
8/17/2024	0.044				
8/18/2024	0.035				
8/19/2024	0.049				
8/20/2024	0.038				
8/21/2024	0.033				
8/22/2024	0.038				
8/23/2024	0.042				
8/24/2024	0.047				
8/25/2024	0.042				
8/26/2024	0.037				
8/27/2024	0.036				
8/28/2024	0.038				
8/29/2024	0.035				
8/30/2024	0.043				
8/31/2024	0.042				
9/1/2024	0.032				
9/2/2024	0.049				
9/3/2024	0.048				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
9/4/2024	0.086				
9/5/2024	0.043				
9/6/2024	0.029				
9/7/2024	0.014				
9/8/2024	0.081				
9/9/2024	0.033				
9/10/2024	0.077				
9/11/2024	0.034				
9/12/2024	0.035				
9/13/2024	0.032				
9/14/2024	0.045				
9/15/2024	0.031				
9/16/2024	0.028				
9/17/2024	0.032				
9/18/2024	0.037				
9/19/2024	0.034				
9/20/2024	0.029				
9/21/2024	0.03				
9/22/2024	0.031				
9/23/2024	0.038				
9/24/2024	0.041				
9/25/2024	0.037				
9/26/2024	0.031				
9/27/2024	0.032				
9/28/2024	0.033				
9/29/2024	0.038				
9/30/2024	0.036				
10/1/2024	0.038				
10/2/2024	0.023				
10/3/2024	0.033				
10/4/2024	0.028				
10/5/2024	0.027				
10/6/2024	0.033				
10/7/2024	0.043				
10/8/2024	0.025				
10/9/2024	0.031				
10/10/2024	0.023				
10/11/2024	0.032				
10/12/2024	0.038				
10/13/2024	0.027				
10/14/2024	0.032				
10/15/2024	0.018				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
10/16/2024	0.024				
10/17/2024	0.029				
10/18/2024	0.028				
10/19/2024	0.027				
10/20/2024	0.031				
10/21/2024	0.032		0.368	0.12	
10/22/2024	0.032		0.357		
10/23/2024	0.029		0.342	0.11	
10/24/2024	0.028		0.314		
10/25/2024	0.028		0.29		
10/26/2024	0.027		0.578		
10/27/2024	0.029		0.615		
10/28/2024	0.033		0.554	0.1	
10/29/2024	0.029		0.265		
10/30/2024	0.027		0.244	0.1	
10/31/2024	0.037		0.283		3.86
11/1/2024	0.023		0.197		
11/2/2024	0.025		0.203		
11/3/2024	0.035		0.166		
11/4/2024	0.034		0.257	0.11	
11/5/2024	0.03		0.211		
11/6/2024	0.031		0.197	0.1	
11/7/2024	0.03		0.215		
11/8/2024	0.032		0.193		
11/9/2024	0.041		0.202		
11/10/2024	0.038		0.177		
11/11/2024	0.021		0.401	0.11	
11/12/2024	0.034		0.712		
11/13/2024	0.026		0.311	0.11	
11/14/2024	0.031		0.286		
11/15/2024	0.032		0.095		
11/16/2024	0.026		0.097		
11/17/2024	0.031		0.023		
11/18/2024	0.033		0.046	0.11	
11/19/2024	0.031				
11/20/2024	0.028				
11/21/2024	0.038				
11/22/2024	0.034				
11/23/2024	0.029				
11/24/2024	0.03				
11/25/2024	0.032				
11/26/2024	0.033				

Date	Lift Station Flow (MGD)	Influent Phosphorus (mg/L)	Fill and Draw Exit Manhole (MGD)	Fill and Draw Exit Manhole Phosph. (mg/L)	Fill and Draw Exit Manhole Monthly Phosph. Calculated
11/27/2024	0.027				
11/28/2024	0.031				
11/29/2024	0.032				
11/30/2024	0.03				14.97
12/1/2024	0.03				
12/2/2024	0.037				
12/3/2024	0.03				
12/4/2024	0.023				
12/5/2024	0.034				
12/6/2024	0.033				
12/7/2024	0.03				
12/8/2024	0.029				
12/9/2024	0.035				
12/10/2024	0.036				
12/11/2024	0.029				
12/12/2024	0.031				
12/13/2024	0.03				
12/14/2024	0.031				
12/15/2024	0.03				
12/16/2024	0.033				
12/17/2024	0.029				
12/18/2024	0.028				
12/19/2024	0.029				
12/20/2024	0.028				
12/21/2024	0.029				
12/22/2024	0.028				
12/23/2024	0.027				
12/24/2024	0.027				
12/25/2024	0.034				
12/26/2024	0.025				
12/27/2024	0.027				
12/28/2024	0.031				
12/29/2024	0.031				
12/30/2024	0.032				
12/31/2024	0.035				

	Ave Lift Station (MGD)	Influent Phosphorus (mg/L)	Fill & Draw Exit (MGD)	Fill & Draw Phosphorus (mg/L)	Fill & Draw Phosphorus monthly calculated (lbs/month)
Dec-21	0.062				
Jan-22	0.049				
Feb-22	0.049				
Mar-22	0.053				
Apr-22	0.043				
May-22	0.042		0.489	0.262	16.96
Jun-22	0.040		0.300	0.190	0.47
Jul-22	0.034				
Aug-22	0.034				
Sep-22	0.029	5.28			
Oct-22	0.031	8.37	0.559	0.436	5.01
Nov-22	0.032	7.59	0.224	0.123	2.88
Dec-22	0.044	4.99			
Jan-23	0.036	5.09			
Feb-23	0.041	22.69			
Mar-23	0.040	5.00			
Apr-23	0.061	3.86			
May-23	0.055	3.81	0.354	0.27	0.91
Jun-23	0.037	6.40	0.403	0.1975	9.28
Jul-23	0.049	4.88			
Aug-23	0.035	6.23			
Sep-23	0.028				
Oct-23	0.045		0.388	0.100	2.590
Nov-23	0.047		0.315	0.117	2.100
Dec-23	0.035				
Jan-24	0.034				
Feb-24	0.032				
Mar-24	0.030				
Apr-24	0.036				
May-24	0.047		0.350	0.155	8.590
Jun-24	0.051		0.187	0.130	1.820
Jul-24	0.067				
Aug-24	0.044				
Sep-24	0.039				
Oct-24	0.030		0.383	0.108	3.860
Nov-24	0.031		0.222	0.108	14.970
Dec-24	0.030				
overall	0.040	7.013	0.344	0.190	5.201

Appendix B

USEPA Uses and Variances – Evaluating Substantial and Widespread Economic and Social Impact Spreadsheets

Secondary Test Analysis (Worksheet F in the 1995 WQS Guidance)

The secondary test is designed to build upon the characterization of the financial burden identified in the Municipal Preliminary Screener (MPS) by analyzing the community's ability to obtain financing, describing the socioeconomic health of the community, and characterizing the community's financial management. The secondary test uses the following six indicators in three general categories:

- Debt Indicators
  - Bond Ratings
  - Overall Net Debt as a Percent of Full Market Property Value
- Socioeconomic Indicators
  - Unemployment Rate
  - Median Household Income
- Financial Management Indicators
  - Property Tax Revenue Collection Rate
  - Property Tax Revenues as a Percent of Full Market Property Value

Debt Indicators: The debt indicators assess the current debt burden of the community and its ability to issue additional debt to finance pollutant control projects.

Socioeconomic Indicators: The socioeconomic indicators assess the general economic well-being of the community.

Financial Management Indicators: The financial management indicators evaluate the community's overall ability to manage financial operations.

More detailed instructions for each indicator are provided below with cells to enter the data necessary to score them. Line numbers are the same as those in Worksheet E of the 1995 WQS Guidance. The tool automatically scores them and then calculates the average score.

Bond Rating

Description

Current ratings for the community summarize a bond rating agency's assessment of a community's credit capacity. The ratings generally reflect current financial conditions. If security enhancements like bond insurance have been used for the bond issue, however, the bond rating on a particular issue may be higher than local conditions justify. Only ratings for uninsured bonds, therefore, should be used.

Many small and medium sized communities have not used debt financing for projects and, as a result, have no bond rating. The absence of a bond rating does not indicate strong or weak financial health. When a bond rating is not available, this indicator should not be included in the analysis of substantial impacts. When available, the rating for the most recent general obligation bond should be used. If a general obligation bond has not been issued recently, the most recent rating for a sewer bond should be used.

When available, enter the most recent general obligation bond rating in Line 4. If a general obligation bond has not been issued recently, enter the most recent rating for a sewer bond.

Benchmarks

Moody's
- Weak: Below Baa
- Mid-Range: Baa
- Strong: Above Baa

Standard & Poor's
- Weak: Below BBB
- Mid-Range: BBB
- Strong: Above BBB

Calculation

Line	Description	Data	Comments and Sources
	Most Recent General Obligation Bond Rating *> Note: if a General Obligation Bond has not been issued recently, use the most recent rating for a Sewer Bond.*		
	Date (MM/DD/YYYY) - For documentation purposes only. Does not affect any calculations.		The Village does not have a bond rating
	Rating Agency		
4	Rating		
	Summary Score		

Secondary Test Analysis (Worksheet F in the 1995 WQS Guidance)

Overall Net Debt as a Percent of Full Market Value of Taxable Property

Some states and local jurisdictions may have established legal limits on the amount of property taxes that can be levied as a percent of full market or assessed value of real property. This indicator may not be appropriate in states with statutory limits on property tax collections and/or rates, or where data on full-market value of taxable property are not available. In such cases, this indicator can be replaced with Overall Net Debt per Capita, as discussed in a separate section at the bottom of this worksheet.

Description

Overall Net Debt is debt repaid by property taxes. It excludes debt that is repaid by special user fees (e.g. revenue debt). This indicator provides a measure of debt burden on residents within the community and measures the ability of local government jurisdictions to issue additional debt. It includes the debt issued directly by the local jurisdiction and debt of overlapping entities such as school districts. It compares the level of debt owed by the community with the full market value of real property used to support that debt and serves as a measure of the community's wealth.

The boundary of the affected community generally conforms to one or more community boundaries. Therefore, prorating community data to reflect specific service area boundaries is not normally necessary for evaluating the general financial capability of the affected community.

Instructions

Enter data as described below.

- Line 1: Enter the community's direct net debt.
- Line 2: Enter the community's overlapping debt.
- Line 11: The tool automatically calculates overall net debt by adding Lines 1 and 2.
- Line 3: Enter the community's market value of taxable property.
- Line 12: The tool automatically calculates this by dividing Line 11 by Line 3 and multiplying by 100.

Benchmarks

- Weak: Above 5%
- Mid-Range: 2-5%
- Strong: Below 2%

Calculation

Line	Description	Data	Comments and Sources
If property tax limitations apply, select "Yes" in row 27 and skip this indicator. Then, complete the alternative indicator "Overall Net Debt per Capita" at the bottom of this worksheet.			
	Skip Indicator?	No	
1	Direct Net Debt	$0	WI Dept of Revenue 2023 Debt Margin Report p17
2	Overlapping Debt	$0	WI Dept of Revenue 2023 Debt Margin Report p17
11	Overall Net Debt (Line 1 + Line 2)	$0	
3	Market Value of Property	$13,213,100	2024 Statement of Assessment for Village of Taylor
12	**Overall Net Debt as a Percent of Full Market Value of Taxable Property (Line 11 / Line 3 * 100)**	**0.0%**	
	Summary Score	**Strong 3.0**	

Secondary Test Analysis (Worksheet F in the 1995 WQS Guidance)

Unemployment Rate

Description
The unemployment rate is defined as the percent of a community's labor force currently unemployed.

Instructions
No input is required. The tool automatically populates unemployment values for the community and nation from the "2. Demographic Data" worksheet.

Benchmarks
The tool compares the community unemployment rate with the national average.
• Weak: More than 1 percentage point above the national average.
• Mid-Range: ± 1 percentage point of the national average.
• Strong: More than 1 percentage point below national average.

Calculation

Line	Description	Data	Comments and Sources
5	Community Unemployment Rate	5.8%	
6	National Unemployment Rate	5.2%	
	Difference Between Community's Unemployment Rate and National Unemployment Rate (Line 5 - Line 6)	0.6%	
	Summary Score	**Mid-Range 2.0**	

Median Household Income

Description
Median household income (MHI) is defined as the median amount of total income dollars received per household during a calendar year in a given area. It serves as an overall indicator of community earning capacity.

Instructions
No input is required. The tool automatically populates MHI values for the community and nation from the "2. Demographic Data" worksheet.

Benchmarks
Compare the community's MHI to the state MHI:
• Weak: More than 10% below state MHI
• Mid-Range: ± 10% of the state MHI
• Strong: More than 10% above state MHI

Calculation

Line	Description	Data	Comments and Sources
7	Community MHI	$51,786	
8	State MHI	$75,670	
	Relationship Between Community's MHI and State MHI [(Line 7 - Line 8)] / Line 8)	**-31.6%**	
	Summary Score	**Weak 1.0**	

Secondary Test Analysis (Worksheet F in the 1995 WQS Guidance)

Property Tax Revenues as a Percent of Full Market Value of Taxable Property

This indicator may not be appropriate in states with statutory limits on property tax collections and/or rates, or where data on full-market value of taxable property are not available. However, this indicator has no appropriate substitute. In such cases where the property taxes are at their limit or where full-market value of taxable property cannot be estimated, this indicator should be dropped and the other five factors are assigned equal weights, as discussed in a separate section below.

Description

This indicator can be considered the "property tax burden" because it indicates the funding capacity to support new expenditures based on the wealth of the community.

Instructions

The value for full market value of real property is transferred from Line 3 when calculating Overall Net Debt as a Percent of Full Market Value of Taxable Property above. Enter the most recent year's property tax revenues on Line 10. General fund revenues are primarily property tax receipts. The tool will divide the property tax revenue collected by the full market value of taxable property and multiply by 100 to provide the result as a percentage on Line 13.

Benchmarks

- Weak: Above 4%
- Mid-Range: 2-4%
- Strong: Below 2%

Calculation

Line	Description	Data	Comments and Sources
If property tax limitations apply, select "Yes" in row 64 and skip this indicator. Property Tax Revenues as a Percent of Full Market Value of Taxable Property has no appropriate substitute in cases where property taxes are at their limit or where full-market value of taxable property cannot be estimated. In such cases, this indicator should be dropped and the other factors are assigned equal weights.			
	Skip Indicator?	No	
3	Market Value of Property	$13,213,100	
10	Property Tax Revenues	$64,976	2025 Village Budget line 6 General Property Taxes
13	**Property Tax Revenue as a Percent of Full Market Value of Taxable Property (Line 10 / Line 3 * 100)**	**0.5%**	
	Summary	**Strong**	
	Score	**3.0**	

Property Tax Revenue Collection Rate

Description

The property tax revenue collection rate is an indicator of the efficiency of the tax collection system and a measure of how well the local government is administered. It compares the actual amount collected from property taxes to the amount levied. Property taxes levied can be computed by multiplying the assessed value of real property by the property tax rate.

Instructions

Property tax revenues is transferred from Line 10 when calculating Property Tax Revenues as a Percent of Full Market Value of Taxable Property above. Enter the property taxes levied below Line 10. The tool will divide the property tax revenues by the property taxes levied and multiply by 100 to provide the collection rate as a percentage.

Benchmarks:

- Weak: Below 94%
- Mid-Range: 94-98%
- Strong: Above 98%

Calculation

Line	Description	Data	Comments and Sources
10	Property Tax Revenues	$64,976	
	Property Taxes Levied	$64,976	2025 Village Budget
9	**Property Tax Revenue Collection Rate (Line 10 / Property Taxes Levied * 100)**	**100.0%**	
	Summary	**Strong**	
	Score	**3.0**	

Secondary Test Analysis (Worksheet F in the 1995 WQS Guidance)

Alternative Indicator: Overall Net Debt per Capita

Description

Calculate Overall Net Debt per Capital rather than Overall Net Debt as a Percent of Full Market Value of Taxable Property in cases where states have statutory limits on property tax collections and/or rates, or where data on full-market value of taxable property are not available. This alternative indicator assesses the financial condition of the community, which may impact the ability of the community to finance project expenditures. This section will be disabled when "Skip indicator?" is set to "No" in the section: "Overall Net Debt as a Percent of Full Market Value of Taxable Property" above and will be enabled when set to "Yes".

Instructions

Enter requested data as described below.

• Line 1: Enter the community's direct net debt.
• Line 2: Enter the community's overlapping debt.
• Line 11: The tool automatically calculates overall net debt adding Lines 1 and 2. Then, the tool automatically enters the community's population from the "2. Demographic Data" tab.
• Line 12 (Alt.): The tool automatically calculates this by dividing overall net debt by population and multiplying by 100.

Benchmarks

• Weak: Greater than $3,000
• Mid-Range: $1,000 to $3,000
• Strong: Less than $1,000

Calculation

Line	Description	Data	Comments and Sources
1	Direct Net Debt	*Not applicable*	
2	Overlapping Debt	*Not applicable*	
11	Overall Net Debt (Line 1 + Line 2)	*Not applicable*	
	Population	*Not applicable*	
12	**Overall Net Debt per Capita (Line 11 / Population)**	*Not applicable*	
	Summary Score	*Not applicable*	

Secondary Test Analysis (Worksheet F in the 1995 WQS Guidance)

Calculation of Secondary Score

Description

The secondary test is used to form a composite assessment of the community's economic health and potential financial impact of the pollutant control project. Each secondary test indicator is assigned a score of 1 (weak), 2 (mid-range), or 3 (strong) based on thresholds specified in Table 2-1 of the 1995 WQS Guidance, and an overall secondary test score is calculated as the average of the separate indicators. The overall secondary test score is evaluated as follows:

- Weak: Less than 1.5
- Mid-range: 1.5 to 2.5
- Strong: Greater than 2.5

Because the goal of the analysis is to measure the overall burden to the community, the debt and socioeconomic indicators are assumed to be better measures of burden than the financial management indicators. Consequently, if one of the debt or socioeconomic indicators is not available, the tool will average the two financial management indicators and use this averaged value as a single indicator with the remaining indicators. This averaging is necessary so that undue weight is not given to the financial management indicators. If this is the case, the EPA recommends providing an explanation of why the indicator is not appropriate or not available.

After calculating the secondary test score, move to the next worksheet to evaluate the Lowest Quintile Poverty Indicator (LQPI).

Calculation

Line(s)	Indicator	Column A: Actual Value	Column B: Score
4	Bond Rating		
12	Overall Net Debt as a Percent of Full Market Value of Taxable Property	0.0%	3.0
5; 6	Unemployment Rate	5.8%	2.0
7; 8	Median Household Income	$51,786	1.0
13	Property Tax Revenues as a Percent of Full Market Value of Taxable Property	0.5%	3.0
9	Property Tax Revenue Collection Rate	100.0%	3.0
12 (Alt.)	Overall Net Debt per Capita	N/A	N/A
	Community Indicators Score (Sum of Column B / Number of Entries)		**2.3**
Secondary Score Benchmarks Weak: Less than 1.5 Mid-Range: 1.5 to 2.5 Strong: Greater than 2.5			**Mid-Range**

Guidance Documentation

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