

Permit Fact Sheet

General Information

Permit Number:	WI-0049964-05-1 *Modification
Permittee Name:	Fish, Crystal and Mud Lake Rehabilitation District
Address:	W12367 Padley Road
City/State/Zip:	Lodi WI 53555
Discharge Location:	See facility description
Receiving Water:	From Crystal Lake to Roxbury Creek and from Fish Lake to the Wisconsin River – Roxbury Creek Watershed (LW18) in Dane County
StreamFlow (Q _{7,10}):	Roxbury Creek – 0.03 cfs, Wisconsin River – 2200 cfs
Stream Classification:	Both are Warm Water Sport Fish community and the Wisconsin River is an Exceptional Resource Water.
Discharge Type:	Existing, Intermittent

Facility Description

Fish, Crystal, and Mud Lake Rehabilitation District operates one pump to lower the water level to the Ordinary High-Water Mark (OHWM) in Crystal Lake. The Fish Lake pump system has been underwater since 2019 and is currently inoperable. The Lake District Board has no current plans for Fish and Mud Lake but is looking into other alternatives. The intake pump for Fish Lake is located at Dane County Fish Lake Park and used to pump approximately 540 gallons per minute (gpm) into a wet well and discharge 2.5 miles away to an outfall (Outfall 001) on the east bank of the Wisconsin River. Discharge from Fish Lake occurred intermittently from October through June. The intake pump for Crystal Lake is approximately 850 feet east of the Mussen and Crystal Road intersection. The intake structure consists of a collection area filled with stone which drain into a 12-inch pipe. The pipe collects the lake water in a wet well, the lake water is then pumped through a forcemain to the outfall. The outfall (Outfall 002) is located 2.7 miles away at Roxbury Creek, about 1,200 feet east of County Highway Y. The pump for Crystal Lake was replaced in March 2024, the pump capacity is approximately 1,000 gpm. Discharge from Crystal Lake occurs intermittently until the lake reaches the OHWM.

*Permit modification -1 completed to remove requirements for installation of a gauge station and the alternative BOD limits that were only applicable with the installation of a gauge station. Changes made in the surface water section and compliance schedule section.

Substantial Compliance Determination

After a desk top review of all discharge monitoring reports, compliance schedule items, and a site visit on May 4, 2023, this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	0.75 MGD (Average October 2018 – September 2019)	Drawdown discharge from Fish Lake in Dane County to the Wisconsin River via 2.5 miles of piping. Samples of Fish Lake water effluent shall be collected from the pipeline tap after the pump or at the outfall structure on the river.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
004	1.2 MGD (Average October 2018 – January 2024)	Drawdown discharge from Crystal Lake in Dane County to Roxbury Creek. Samples of the Crystal Lake water effluent shall be collected from the pipeline tap after the pump or at the outfall structure prior to mixing with Roxbury Creek. Flow is measured by a mechanical propeller meter located in the pump house.

1 Surface Water - Monitoring and Limitations

Sample Point Number: 001- Fish Lake Drawdown

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate	Daily Max	1.5 MGD	Daily	Calculated	
Water Level	Daily Min	858.7 feet MSL	Monthly	Gauge Station	See section 'Pumping Shall Cease When Lake Level Reached OHWM.'
BOD5, Total	Weekly Avg	20 mg/L	Monthly	Grab	Effective October through June each year.
BOD5, Total	Weekly Avg	20 mg/L	1/ 2 Weeks	Grab	Effective July through September each year.
Suspended Solids, Total	Weekly Avg	40 mg/L	Monthly	Grab	Effective October through June each year.
Suspended Solids, Total	Weekly Avg	40 mg/L	1/ 2 Weeks	Grab	Effective July through September each year.
Dissolved Oxygen	Daily Min	7.0 mg/L	Monthly	Grab	Effective October through June each year.
Dissolved Oxygen	Daily Min	7.0 mg/L	1/ 2 Weeks	Grab	Effective July through September each year.
pH Field	Daily Max	9.0 su	Monthly	Grab	
pH Field	Daily Min	6.0 su	Monthly	Grab	
Phosphorus, Total		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	

Changes from Previous Permit

Discharge has not occurred at this outfall since 2019.

Flow: The total monthly reporting of flow rate has been removed.

Explanation of Limits and Monitoring Requirements

Please refer to the Water Quality Based Effluent Limits memo for the Fish, Crystal, and Mud Lake Rehabilitation District prepared by Sarah Luck, dated April 2, 2024, and used for this reissuance.

BOD₅, Total Suspended Solids (TSS), pH, and Dissolved Oxygen (DO): No changes are recommended in the permit limitations for BOD₅, TSS, pH, and DO. Because the water quality criteria, 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.

Water Level: Pump operations must cease if the lake level is below the OHWM of 858.70 feet MSL.

Phosphorus: To determine reasonable potential at the next permit reissuance, monitoring shall occur if discharge occurs.

Ammonia: To determine reasonable potential at the next permit reissuance, monitoring shall occur if discharge occurs.

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

Sample Point Number: 004- Crystal Lake Drawdown

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate	Daily Max	1.5 MGD	Daily	Calculated	
Water Level	Daily Min	868.22 feet MSL	Monthly	Gauge Station	
WLA Previous Day River Flow		cfs	Weekly	Gauge Station	Stream flow for Roxbury Creek receiving water.
BOD₅, Total		mg/L	Weekly	Grab	Effective May through September.
BOD ₅ , Variable Limit		mg/L	Weekly	See Table	Effective May through September. Look up the variable BOD ₅ limit from the updated Table 1, and report the variable limit in the BOD ₅ Variable Limit column on the eDMR.
BOD ₅ , Total	Weekly Avg - Variable	mg/L	Weekly	Grab	Effective May through September, until 2026. Report the BOD concentration result (mg/L) in the BOD ₅ , Total column

Monitoring Requirements and Limitations

Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					of the eDMR. See Table 1.
BOD ₅ , Total	Weekly Avg – Variable	lbs/day	Weekly	Grab	Effective May through September starting in 2026. Report the BOD mass result (lbs/day) in the BOD ₅ , Total column of the eDMR. See Table 3.
BOD ₅ , Variable Limit		mg/L	Weekly	See Table	Effective May through September until 2026. Look up the variable BOD ₅ limit from Table 1, and report the variable limit in the BOD ₅ , Variable Limit column on the eDMR.
BOD ₅ , Variable Limit		lbs/day	Weekly	See Table	Effective May through September starting 2026. Look up the variable BOD ₅ limit from Table 3, and report the variable limit in the BOD ₅ , Variable Limit column on the eDMR.
BOD ₅ , Total		mg/L	Monthly	Grab	Effective October through April.
BOD ₅ , Total	Weekly Avg – Variable	mg/L	Monthly	Grab	Effective October through April each year. Report the BOD concentration result (mg/L) in the BOD ₅ , Total column of the eDMR. See Table 2.
BOD ₅ , Variable Limit		mg/L	Monthly	See Table	Effective October through April. Look up the variable BOD ₅ limit from Table 2, and report the variable limit in the BOD ₅ , Variable Limit column on the eDMR.
Suspended Solids, Total	Weekly Avg	13 mg/L	Monthly	Grab	Effective October through April each year.
Suspended Solids, Total	Weekly Avg	13 mg/L	Weekly	Grab	Effective May through September each year.
Temperature Maximum		deg F	3/Week	Estimated	Reporting of INFOS gauge data is only required August

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					through September in 2024.
Temperature Maximum		deg F	Daily	Continuous	Continuous monitoring is required starting 05/01/2025.
Temperature Maximum	Daily Max	82 deg F	Daily	Continuous	Effective September.
Temperature Maximum	Weekly Avg	73 deg F	Daily	Continuous	Effective September.
Temperature Maximum	Weekly Avg	65 deg F	Daily	Continuous	Effective May.
Dissolved Oxygen	Daily Min	8.0 mg/L	Monthly	Grab	Effective October through April.
Dissolved Oxygen	Daily Min	8.0 mg/L	Weekly	Grab	Effective May through September.
pH Field	Daily Max	9.0 su	Monthly	Grab	
pH Field	Daily Min	6.0 su	Monthly	Grab	
Phosphorus, Total	Monthly Avg	0.225 mg/L	Monthly	Grab	Effective October through April.
Phosphorus, Total	6-Month Avg	0.075 mg/L	Monthly	Grab	Effective October through April.
Phosphorus, Total	Monthly Avg	0.225 mg/L	2/Month	Grab	Effective May through September.
Phosphorus, Total	6-Month Avg	0.95 lbs/day	1/ 6 Months	Calculated	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	Monitoring year-round in 2028.

Changes from Previous Permit

Flow: The total monthly reporting of flow rate has been removed.

BOD₅: Interim concentration limits for the months of May through September have been included. Modification -1 removes the interim limits and the alternative limits that were only applicable if a gauge station is installed.

Temperature: The monitoring frequency and type for August through September of 2024 is '3/Week' and 'Estimated' because the permittee is reporting INFOS gauge data. With the installation of a representative temperature probe in accordance with the compliance schedule, the monitoring frequency and type have changed to 'Daily' and 'Continuous,' respectively, for eDMR reporting purposes. There are limits for the months of May and September. Continuous monitoring is required starting May 01, 2025.

Explanation of Limits and Monitoring Requirements

Please refer to the Water Quality Based Effluent Limits memo for the Fish, Crystal, and Mud Lake Rehabilitation District prepared by Sarah Luck, dated April 2, 2024, and used for this reissuance.

BOD₅, Total Suspended Solids (TSS), pH, and Dissolved Oxygen (DO): No changes are recommended in the permit limitations for BOD₅, TSS, pH, and DO. Because the water quality criteria, 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.

~~**BOD₅ Interim Concentration and Mass Limits and WLA Previous Day River Flow:** Installation of equipment to accurately measure flow in Roxbury Creek is required prior to use of the BOD₅ Mass Variable Limits, to ensure the waste load allocation BOD limits are met. Concentration limits are effective upon permit reissuance and will remain in effect until flow in Roxbury Creek can be accurately measured. Stream flow monitoring for Roxbury Creek is needed to collect the flow value for the creek to determine the BOD₅ Mass Variable Limit for the discharge.~~

Modification -1 removed the variable mass limits and required action item of installation of the gauge station.

Water Level: Pump operations must cease if the lake level is below the OHWM of 868.22 feet MSL.

Thermal: Requirements for Temperature are included in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects. Reasonable potential was shown for a weekly average temperature limit in May, and daily maximum and weekly average limits are required in September since there is no data available, in accordance with s. NR 106.56(12), Wis. Adm. Code. During permit fact check, it was stated by the permittee that previously collected temperature data is not believed to be representative of the effluent discharged to Roxbury Creek since it is collected near the water surface of Crystal Lake. After installation of the new temperature monitoring probe, continuous monitoring is required.

Phosphorus: Phosphorus requirements are based on the Phosphorus Rules that became effective 12/1/2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards.

For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly values. The final effluent limit for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL. This final effluent limit was derived from and complies with the applicable water quality criterion.

The WQBELs for phosphorus are already in effect and will be retained to prevent backsliding.

Ammonia: Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia.

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 fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

PFOS and PFOA: NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites

and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA as part of this permit reissuance. The department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

2 Schedules

2.1 Roxbury Creek Stream Flow Measurements

A gauge station shall be installed to measure the stream flow values prior to using the May through September BOD Mass Limits.

Required Action	Due Date
Install Gauge Station: Work with USGS to arrange for installation of the gauge station. The gauge station shall be installed in a location that will accurately measure the representative flow of Roxbury Creek. The gauge station installation shall be completed by the Due Date and the department will be notified upon completion.	04/30/2025
Initiate Gauge Station Calibration Measurements: A total of seven baseflow measurements shall be taken every 2-3 weeks during May through September of 2025. These baseflow measurements shall be used to calibrate the gauge station. Notify the department when the first baseflow measurement has been taken.	05/01/2025
Report Data: Submit to the department a summary of the data collected and a description of the project.	10/31/2025
Limits Effective: BOD5 concentration limits are effective until department approval for the use of BOD5 mass limit is given.	05/01/2026

Explanation of Schedule

The Fish, Mud and Crystal Lake Rehabilitation District (FMCL) requested loading limits for BOD based on the stream flow of Roxbury Creek during the previous permit term for the months of May through September for the discharge of excess waters from Crystal Lake to Roxbury Creek via pipeline. The Roxbury Creek Stream Flow Measurements compliance schedule in the previous permit was not completed; the WLA Previous Day River Flow for Roxbury Creek (cfs) was estimated and the BOD₅, Variable Limit was incorrectly used. Installation of equipment to accurately measure flow in Roxbury Creek is required prior to use of the BOD₅ Mass Variable Limits, to ensure the waste load allocation BOD limits are met.

Modification -1: Removal of “Limit Effective” compliance schedule required action because the permittee has elected to not install a stream gauge station and therefore the alternative BOD limits are no longer applicable.

2.2 Outfall 004 Temperature Probe Installation

Required Action	Due Date
Temperature Probe Plans and Specifications Submittal: The permittee shall submit plans and specifications for department approval for the installation of a temperature probe in accordance with ch. NR 108, Wis. Adm. Code. The temperature probe should be installed at a location representative of the discharge from Outfall 004 in accordance with ss. NR 218.07 and 218.11, Wis. Adm. Code. This submittal shall include a signed Wastewater Systems Approval Request form (3400-205), information about the chosen temperature probe, and the proposed location.	12/31/2024
Complete Temperature Probe Installation: The permittee shall complete installation of the	04/30/2025

temperature probe and submit proof of installation to the department by the Due Date.	
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Explanation of Schedule

During permit fact check, the permittee notified the department current and previously collected temperature data is not believed to be representative of the effluent discharged to Roxbury Creek since the Integrated Nowcast/Forecast Operation System for Yahara Lakes gauge is collected near the water surface of Crystal Lake.

Special Reporting Requirements

None.

Other Comments:

None.

Attachments:

Water Quality Based Effluent Limits, dated April 2, 2024

Expiration Date:

June 30, 2029

Justification Of Any Waivers From Permit Application Requirements

Toxic monitoring was not required for either of the Fish Lake or Crystal Lake discharges since the discharges are water transfers from lakes and are not expected to contain toxics at levels of concern. The Rehabilitation District may once again be exempt from collecting samples for the next permit application.

Prepared By: BetsyJo Howe, Wastewater Specialist

Date: 5/29/2024

Updated (based on fact check comments): Editorial changes for clarity. Outfall 004 Temperature Probe Upgrade schedule included, along with continuous temperature monitoring after probe installation. 6/24/2024

Updated (based on public notice comments): Editorial changes for clarity. 7/30/2024

Modification Prepared By: Jennifer Jerich, Wastewater Specialist

Date: 2/11/2026