STATEMENT OF BASIS

FOR THE ISSUANCE OF
A NPDES PERMIT

U.S. Environmental Protection Agency
Region 5, Permits Branch - WP-16J
77 West Jackson Boulevard
Chicago, Illinois 60604
(312) 886-6106

Public Notice No.: 24-08-01-A

Public Notice Issued On: August 23,2024

Comment Period Ends: September 23, 2024

Permit No.: MN-0024066-6 (REISSUANCE)

Application No.: MN-0024066-6

Name and Address of Applicant:

City of Mahnomen
P.O. Box 250
Mahnomen, Minnesota 56557

Name and Address of Facility Where Discharge Occurs:

Mahnomen WWTF
104 W Madison Ave
Mahnomen, Minnesota
Mahnomen County
(N.E. ¼ of Sec. 14 of T144N, R42W)

Receiving Water: Wild Rice River

DESCRIPTION OF APPLICANT'S FACILITY AND DISCHARGE

The above facility is located within the exterior boundaries of the White Earth Indian Reservation. The EPA has retained the authority to issue NPDES permits to facilities with discharges to waters of the United States within the exterior boundaries of Indian Reservations. The EPA is issuing this NPDES permit under the authorities of the Clean Water Act.

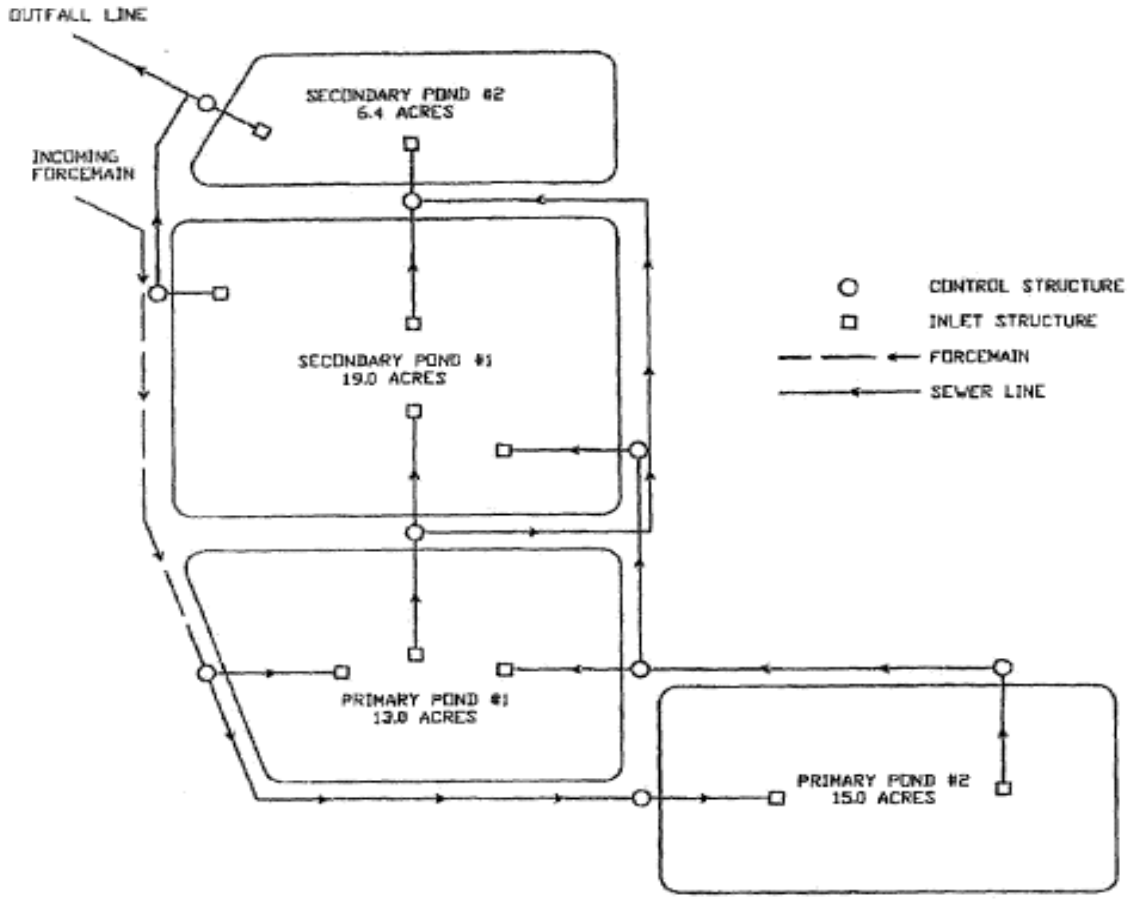
The application and plans indicate that the existing treatment system consists of one main lift station, approximately 6,900 feet of eight-inch force main, a four-cell stabilization pond, and about 2,800 feet of 15-inch outfall sewer.

The facility has a controlled discharge (Discharge 002 and 003) from each of the secondary cells that are connected to the same outfall to the Wild Rice River (S.E. ¼ of Section 10, T144N, R42W). Though not applicable at the point of discharge, the Minnesota Pollution Control Agency (MPCA)

would classify the Wild Rice River as Class 2Bg, 3, 4A, 4B, 5 and 6 water. Discharges 002 and 003 are where compliance is to be determined. The facility is designed to treat an average wet weather flow of up to 338,000 gallons per day (gpd) with a five-day biochemical oxygen demand (BOD_5) strength of 218 milligrams per liter (mg/L). There are two primary pond cells that have surface areas of 13 acres and 15 acres. There are also two secondary pond cells with surface areas of 6.4 acres (Discharge 002) and 19 acres (Discharge 003), all measured at the three-foot depth level. The pond system has a total detention time of approximately 180 days at design flow. Wastewater is from domestic sources only including the Shooting Star Casino. The facility is rated as Class D under Minnesota regulations.

The main lift station is capable of discharging untreated wastewater from the sewerage system to the Wild Rice River. The lift station shall be controlled and locked at all times.

The facilities are further described in plans and specifications on file with the MPCA prepared by Larson-Peterson and Associates, Inc., Detroit Lakes, Minnesota.



The draft permit requires the applicant to meet the following effluent limitations:

Discharges 002 and 003

Effluent Characteristics	Discharge Limitations			
	Concentration (Specified Units)			
Parameter	Daily Minimum	Monthly Average	Weekly Average	Daily Maximum
Flow (MG)	-	Report calendar month total	-	-
Flow (mgd)	-	-	-	-
Dissolved Oxygen (mg/L)	Report	-	-	-
pH (SU)	6.0	-	-	9.0
Total Suspended Solids (TSS) (mg/L)	-	45	65	-
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) (mg/L)	-	25	40	-
E. coli (#/100ml) (April 1 – October 31)	-	126 (geometric mean)	-	235
Mercury, Dissolved (as Hg) (ng/L)	-	Report	-	Report
Mercury, Total (as Hg) (ng/L)	-	10.4	-	20.2
Total Suspended Solids (TSS) (mg/L) (Mercury)	-	Report	-	Report
Phosphorus, Total (mg/L)	-	Report	-	-
Phosphorus, Total (kg/year)	-	934 (Calendar Year to Date)	-	-
Dissolved Solids, Total (mg/L)	-	Report	-	-
Sulfates, Total (mg/L)	-	Report	-	-
Ammonia Nitrogen, Total (as N) (mg/L)	-	Report	-	-
Nitrite Plus Nitrate, Total (as N) (mg/L)	-	Report	-	-
Nitrogen, Kjeldahl, Total	-	Report	-	-
Nitrogen, Total (as N) (mg/L)	-	Report	-	-
$CBOD_5$ percent removal (%)	$\geq$85	-	-	-
TSS percent removal (%)	$\geq$65	-	-	-
Outfall observation (yes/no)	-	-	-	-

Discharge is limited to a maximum 6 inches per day. Discharge flow was calculated as follows:

> 6.4 acres x 0.5 feet/day (6 inches/day) x 325,900 gallons per acre-ft ≈ 1.04 million gallons/day

19 acres x 0.5 feet/day (6 inches/day) x 325,900 gallons per acre-ft ≈ 3.1 million gallons/day

Loading limits in the permit were calculated using the following formula:

(mgd * limit (mg/L) * 3.785) = Loading (kg/d).

Section 401 Water Quality Certification

The Environmental Protection Agency received a request for a Clean Water Act (CWA) Section 401 water quality certification (WQC). Section 401(a)(1) of the CWA requires applicants for Federal licenses or permits that may result in any discharge into waters of the United States to obtain certification or waiver from the certifying authority where the discharge would originate. The EPA is the appropriate authority for purposes of certifying the proposed discharge under Section 401(a)(1) of the CWA within the White Earth Indian Reservation and will be unless and until the White Earth Nation is approved for Treatment as a State (TAS) for CWA Sections 303 and 401. EPA is in the process of certifying pursuant to Section 401. The EPA believes the effluent limitations included in the draft permit meet Tribal and state water quality requirements where they are applicable. The draft certification is available for review. The EPA will act on this certification request prior to issuance of the permit. We have discussed our reissuance of the permit with the White Earth Nation, the MPCA and the permittee.

Basis for Permit Requirements

The limits were developed to ensure compliance with 40 C.F.R. § 122.44(d) and 40 C.F.R. Part 133, EPA's water quality criteria and protection of Minnesota's water quality requirements where they are applicable. The MPCA developed limits for this discharge for the issuance of its State Disposal System permit. EPA believes the state's permit is consistent with federal requirements and will be using the limits developed by MPCA in the draft NPDES permit. Information related issuance of the state's permit can be found in the Administrative Record.

pH

The limits for pH are based on secondary treatment requirements pursuant to 40 C.F.R. Part 133.

5-day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

The limits for $CBOD_5$ are based on secondary treatment requirements pursuant to 40 C.F.R. Part 133. A 7-day average limit of 40 mg/L and a 30-day average limit of 25 mg/L are carried from the previous permit. The permittee has been in substantial compliance with these limits. The 7-day average and the 30-day average are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively.

Total Suspended Solids (TSS)

The limits for TSS are based on equivalent to secondary treatment requirements pursuant to 40 C.F.R. Part 133. A 7-day average limit of 65 mg/L and a 30-day average limit of 45 mg/L are carried from the previous permit. The permittee has been in substantial compliance with these limits. The 7-day average and the 30-day average are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively.

E. coli

The limits for E. coli are based on the EPA's water quality criteria in existence at the time the original permit was drafted. The geometric mean of samples collected over a 30-day period shall not exceed 126 E. coli per 100 milliliters (ml). Any single sample shall not exceed 235 E. coli per 100 ml. New water quality criteria were published in 2012 (EPA's 2012 Recreational Water Quality Criteria). The criteria are similar with the geometric mean of samples collected over a 30-day period shall not exceed 126 E. coli per 100 milliliters (ml), however, the statistical threshold value of 410 E. coli per 100 ml is set as the daily maximum. Since the permittee has been in substantial compliance with the existing permit limits, in accordance with 40 C.F.R. 122.44(l) (anti-backsliding), the limits from the previous permit have been carried over into the draft permit.

Phosphorus

Phosphorus is a common constituent in many wastewater discharges and a pollutant that has the potential to negatively impact the quality of Minnesota's lakes, wetlands, rivers, and streams. Phosphorus promotes algae and aquatic plant growth often resulting in decreased water clarity and oxygen levels. In addition to creating general aesthetic problems, these conditions can also impact a water body's ability to support healthy fish and other aquatic species. Therefore, phosphorus discharges are being carefully evaluated throughout the state.

To be consistent with Minnesota water quality standards downstream of the reservation, we tried to determine whether the state's River Eutrophication Standards (RES) are being exceeded at the reservation boundary. We do not have any indication from the state that the applicable RES are being exceeded at the reservation boundary. However, the Minnesota Pollution Control Agency has requested that a phosphorus limit be developed for dischargers within the Red River Basin. MPCA considers the Mahnomen WWTF as a mid-sized facility. Mid-sized facilities are defined as those with the potential to discharge in excess of 1,800 pounds of TP per year (816 kilograms per year (kg/year)) and also have an average wet weather design flow (AWWDF) of less than 1.0 million gallons per day (mgd). As such, the Mahnomen WWTF will be assigned annual mass limits based on the AWWDF and 2.0 milligrams per liter (mg/L) TP limits. Mass limits are expressed as a calendar year total. A 2.0 mg/L performance goal is generally achievable for Minnesota's mid-sized stabilization pond wastewater treatment facilities. The purpose of these mass cap effluent limits is to minimize further expansion of TP loads from this class of wastewater treatment facilities.

Ultimately, the purpose of assigning TP effluent limits to facilities in the Red River Basin is to mitigate TP load increases and realize actual load reductions from permitted wastewater dischargers in Minnesota. The revised approach will achieve both objectives. Additional TP reductions from permitted wastewater entities may be necessary following the completion of a water quality restoration study for Lake Winnipeg.

The previous permit included a 934 kilogram per year (kg/yr) annual loading limit for total phosphorus for the facility. Using an annual loading limit of 934 kg/yr helps reduce overall loading to the watershed and allows flexibility over the course of each year for the facility to comply. This limit is continued in the draft permit. The 934 kg/yr limit is a maximum limit for the entire facility,

including both 002 and 003 discharges. The sum of both discharges is to be reported on the 002 eDMR.

The EPA has evaluated the treatment components of the facility with regards to the mass limits in the permit. At the time of permit issuance, the facility is operating at less than the permitted AWW design flow of 338,000 gpd and is demonstrating the capability of meeting the effluent mass limit of 934 kilograms per year for total phosphorus. As the facility approaches its AWW design flow it may need infrastructure improvements and/or operational changes to maintain compliance with the mass limits.

Although the facility is not required to prepare a Phosphorus Management Plan (PMP), elimination or reduction of phosphorus at the source will decrease the influent load to the wastewater treatment facility and has the potential to improve treatment efficiency and reduce treatment costs. EPA strongly encourages the facility to identify and eliminate/reduce sources of phosphorus to, and optimize phosphorus management within, the wastewater treatment facility.

Mercury

This permit contains influent and effluent requirements for mercury monitoring and limits. These requirements were added in response to the EPA's approval of the Minnesota state-wide Mercury Total Maximum Daily Load (TMDL) plan. More information on the TMDL can be found on the MPCA internet site at http://www.pca.state.mn.us/water/statewide-mercury-reduction-plan. Specific mercury monitoring requirements are found in Parts I.B, I.C and I.D of the permit. Those requirements include sampling for TSS via a grab sample taken at the same time as the Total and Dissolved mercury grab samples are taken. The mercury monitoring at outfall SD 002 and SD 003 is consistent with the MPCA *Permitting Strategy for Addressing Mercury in Municipal and Industrial Wastewater Permits* (2013) located on the MPCA website at https://www.pca.state.mn.us/sites/default/files/wq-wwprm1-16.pdf.

The permittee is required to submit an updated Mercury Pollutant Minimization Plan (MMP). This requirement complies with the EPA's approval of the Minnesota state-wide Mercury Total Maximum Daily Load (TMDL) plan. Guidance for completing the MMP is available on the MPCA internet site at http://www.pca.state.mn.us/water/wastewater-permits.

Nitrogen

Nitrogen is a pollutant that can negatively impact the quality of Minnesota's water resources, including water used for drinking. Studies have shown that nitrogen in lakes and streams has a toxic effect on aquatic life such as fish. Like phosphorus, nitrogen is a nutrient that promotes algae and aquatic plant growth often resulting in decreased water clarity and oxygen levels. The MPCA's Statewide Nutrient Reduction Strategy (https://www.pca.state.mn.us/air-water-land-climate/reducing-nutrients-in-waters) identifies goals and milestones for nitrogen reductions for both point and non-point nitrogen sources within Minnesota. To gain a better understanding of the current nitrogen concentrations and loadings received by and discharged from the facility additional effluent nitrogen monitoring had been added to the previous permit. This monitoring has been maintained in the permit in accordance with Section 308 of the Clean Water Act.

Based on the data collected during the previous permit term, there is no reasonable potential for the effluent to exceed nitrogen water quality standards. The receiving water is not listed as impaired for nutrients. No limits are proposed for the upcoming permit. The draft permit continues to include influent monitoring for total nitrogen, total nitrite plus nitrate-nitrogen, and total Kjeldahl nitrogen at a frequency of once per quarter. The permit includes effluent monitoring for nitrite plus nitrate-nitrogen, total Kjeldahl nitrogen, and total nitrogen at a frequency of once per month during discharge. Effluent monitoring for ammonia nitrogen and total dissolved solids are to be taken at a frequency of once per half year. There is no effluent nitrogen limit in the permit.

This monitoring will provide the data necessary to develop a better understanding of the total nitrogen concentrations and loadings that is currently being received and discharged from municipal and industrial wastewater treatment plants within Minnesota and Indian Country. Once a more extensive total nitrogen data set is established nitrogen reduction work can begin to achieve the necessary reductions to meet Minnesota's goal of a 10-20% reduction in total nitrogen loads from point source dischargers by 2025. The changes and/or increases in total nitrogen monitoring in wastewater permits as a result of the Statewide Nutrient Reduction Strategy is outlined in the Minnesota NPDES Wastewater Permit Nitrogen Monitoring Implementation Plan available on the MPCA's website at https://www.pca.state.mn.us/business-with-us/wastewater-permit-additional-guidance-and-information.

Total Sulfates

Monitoring was required to provide information related to sulfate levels being discharged from wastewater treatment ponds and the possible impacts to wild rice waters. A 2023 inventory of all Minnesota waters identified no downstream wild rice waters. With no impact to Minnesota water quality standards, total sulfate monitoring is removed from the draft permit.

Oil and Grease and Total Dissolved Solids (TDS)

Additional monitoring as required for discharges with a design flow greater than 0.1 MGD. 40 C.F.R. § 122.21(j) requires data related to these parameters be submitted as part of the application process for permit renewals. Monitoring during the permit term will provide the data that will need to be submitted with the permit application.

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS are widely used, long lasting chemicals, components of which break down very slowly over time. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment. PFAS are found in water, air, fish, and soil at locations across the nation and the globe. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.

At this time, EPA has not finalized water quality criteria or effluent guidelines for any PFAS chemicals. We looked at the need for PFAS sampling at this facility. Wastewater is from domestic sources with no industrial users. This type of discharge has not been identified as a significant

source of PFAS by EPA or MPCA and therefore, no sampling is required. A reopener clause has been added if additional information becomes available indicating sampling or limits is needed.

Asset Management – Operation & Maintenance Plan

Regulations regarding proper operation and maintenance are found at 40 C.F.R. § 122.41(e). These regulations require, "that the permittee shall at all times operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit." The treatment plant and the collection system are included in the definition of "facilities and systems of treatment and control" and are therefore subject to the proper operation and maintenance requirements of 40 C.F.R. § 122.41(e).

Similarly, a permittee has a "duty to mitigate" pursuant to 40 C.F.R. § 122.41(d), which requires the permittee to "take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment."

The draft permit requirements are the first steps of an asset management program which contains goals of effective performance, adequate funding, adequate operator staffing and training. Asset management is a planning process that ensures that you get the most value from each of your assets and have the financial resources to rehabilitate and replace them when necessary, and typically includes five core elements which identify: 1) the current state of the asset; 2) the desired level of service (e.g., per the permit, or for the customer); 3) the most critical asset(s) to sustain performance; 4) the best life cycle cost; and 5) the long term funding strategy to sustain service and performance.

EPA believes that requiring a certified wastewater operator and adequate staffing is also essential to ensure that the treatment facilities will be properly operated and maintained. Mapping the collection system with the service area will help the operator better identify the assets that he/she is responsible for and consider the resources needed to properly operate and maintain them. This will help in the development of a budget and a user rate structure that is necessary to sustain the operation. The development and implementation of a proactive preventive maintenance program is one reasonable step that the permittee can take to demonstrate that it is at all times, operating and maintaining all the equipment necessary to meet the effluent limitations of the permit.

Special Conditions

- The permit requires electronic reporting.
- Dikes must be maintained and vegetation cut.
- The permit requires the continued implementation of an Operation & Maintenance Plan. The plan covers the use of a certified operator to oversee the facility, having adequate staff to help ensure compliance with the permit, mapping the treatment system, developing a preventive maintenance program, reporting and other items.
- The permit requires the submittal of an updated mercury minimization plan.
- The permit contains Industrial Waste Pretreatment Program requirements in accordance with 40 C.F.R. Parts 122 and 403.

- Compliance with 40 C.F.R. Part 503 (sludge use and disposal regulations) if sludge is used or disposed within the Reservation. EPA is to be contacted prior to sewage sludge being removed from the pond system.
- The permit requires that if sewage sludge is to be land applied, the permittee must submit the following information to EPA prior to application:

    i. certification that the application contractor has received all necessary information to comply with applicable provisions of 40 C.F.R. Part 503;

    ii. site location by latitude and longitude, and code number to identify field or field portion.

        1) Plat map showing location of the site relative to local landmarks.
        2) Proximity to surface waters of the United States.
        3) Potential presence of endangered species.
        4) Soil fertility test with fertilizer recommendations.
        5) Previous crop and future crop with yield goal.
        6) Participation Agreement signed by the landowner or operator, if different, of the site to receive sludge.
        7) Determination whether the site has previously been used for sewage applications.
        8) If previously used, determination of cumulative pollutant loading rate since July 19, 1993;

    iii. certification that the local township supervisor has been notified that a site has been identified and is intended for use;

    iv. certification that the County Health Department has been notified that hauling is scheduled to take place; and

    v. certification that notice has been provided to landowners and occupants adjacent to, or abutting the proposed land application site. Such notice shall be accomplished by one of the following: written notice through the regular mail; public notice in the local newspaper; public reading of notice at open public meeting.
- The permit contains a reopener clause to include additional requirements resulting from TMDL studies.

Significant Changes From The Last Permit

Following are the significant changes in the draft permit:

- Change to EPA Region 5 mailing addresses have been made throughout the permit.
- 'Summary of Regular Reporting' has been updated. (Pages I-3)
- The "Narrative Standard" language has been revised for clarity. (Part I.B.a)

- The ‘Stabilization Pond’ requirements have been updated. (Part I.E)
- ‘Reporting’ requirements for electronic submittal of DMRs has been updated. (Part I.F.2)
- ‘Operation and Maintenance Plan’ requirements have been updated. (Part I.F.5)
- ‘Mercury Minimization Plan’ requirements have been updated. (Part I.F.6)
- ‘Industrial Waste Pretreatment Program’ requirements have been updated. (Part I.F.7)
- ‘Sludge Disposal Requirements’ have been updated. (Part I.F.8)
- Reopener clause to include additional requirements for PFAS. (Part I.F.10)
- The ‘Standard Conditions’ have been revised. (Part II)
- Monitoring for sulfate has been removed.

The permit is based on an application dated June 7, 2023 (considered August 7, 2023) and additional supporting documents found in the administrative record.

The permit will be effective for approximately five years from the date of reissuance as allowed by 40 C.F.R. § 122.46.

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