STATEMENT OF BASIS

FOR THE REISSUANCE OF
A NPDES PERMIT

U.S. Environmental Protection Agency
Region 5, NPDES Programs Branch - WN-16J
77 West Jackson Boulevard
Chicago, Illinois 60604
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Public Notice No.: 16-06-01-A

Public Notice Issued On: June 10, 2016 **Comment Period Ends: July 11, 2016**

Permit No.: MN-0061336-5 (REISSUANCE)

Application No.: MN-0061336-5

Name and Address of Applicant:

Prairie Island Indian Community
Prairie Island Department of Water & Wastewater
5636 Sturgeon Lake Road
Welch, Minnesota 55089

Name and Address of Facility Where Discharge Occurs:

Prairie Island Indian Community
Wastewater Treatment Facility
5626 Sturgeon Lake Road
Welch, Minnesota
Goodhue County
(S.W. ¼ of S32, T114N, R19W)

Receiving Water: Sturgeon Lake

DESCRIPTION OF APPLICANT'S FACILITY AND DISCHARGE

The above named applicant has applied for an NPDES Permit to discharge into the designated receiving water. The facility is located within the exterior boundaries of the Prairie Island Indian Reservation. The permit will be issued by the U.S. Environmental Protection Agency.

The existing facility consists of an influent meter, a new cylindrical barscreen, a new vortex grit chamber and grit classifier, a flow equalization tank, two sequencing batch reactors (SBR), chlorination/dechlorination, backup chemical addition for phosphorus control, effluent pumping station, effluent meter, an aerobic digester/sludge storage tank, and sludge disposal equipment (thickener feed & thickened sludge pumps, rotary drum thickener w/ polymer feed unit, WAS tank & thickened sludge tank, bulk chemical storage and blowers). The sludge is land applied on cropland within the reservation.

In addition, the permittee has for use during emergency conditions its original pond treatment system. The previous treatment system consisted of a 9.39 acre primary cell and 4.97 acre

secondary cell and was designed to remove phosphorus. Normally, there will be no discharge from these cells, however, if one is needed, the effluent must meet the limits required for the SBR. Any removal of sludge from the cells will be required to meet the requirements of 40 CFR Part 503. During the permit term, the permittee is contemplating the removal of one of the ponds.

The facility discharges to Sturgeon Lake. The facility's design annual average flow is 0.200 mgd and the design maximum monthly average flow is 0.300 mgd. Wastewater is from domestic sources only, including a casino, marina and hotel.

Proposed Effluent Limitations:

Outfall 001- the permittee is authorized to discharge treated municipal wastewater from Outfall 001. Outfall 001 discharges to an unnamed wetland.

Parameter	Date	Monthly Average	Weekly Average	Daily Maximum	Daily Minimum	Comments
Flow	All year	Report	Report	---	---	PWJ
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) (mg/L)	All Year	25 $\geq$ 85% removal	40	---	---	STS
Total Suspended Solids (mg/L)	All Year	30 $\geq$ 85% removal	45	---	---	STS
Ammonia Nitrogen, Total (as N) (mg/L)	All Year	Report	---	Report	---	WQC
Nitrite Plus Nitrate, Total (as N) (mg/L)	All Year	Report	---	---	---	WQC
Nitrogen, Kjeldahl, Total	All Year	Report	---	---	---	WQC
Nitrogen, Total (as N) (mg/L)	All Year	Report	---	---	---	WQC
Copper, Total Recoverable (µg/L)	All Year	---	---	Report	---	WQC
Hardness, Total (mg/L)	All Year	Report	---	---	---	WQC
Mercury, Total (ng/L)	All Year	Report	---	Report	---	WQC
Dissolved Oxygen (mg/L)	All Year	---	---	---	Report	PWJ
E.coli (#/100ml)	March 1 – October 31	126*	---	410	---	WQS
Chlorine, Total Residual (mg/L)	All Year (when used)	---	---	0.038		WQS
Phosphorus, Total (mg/L)	All Year	0.8	1.6	---	---	WQS
pH (S.U.)	All Year	---	---	9.0	6.0	STS
Outfall Observation	All Year	Report	---	---	---	PWJ

*Geometric Mean

Loading limits in the permit were calculated using the following formula based on the design flow:

0.300 mgd x limit (mg/l) x 3.78 = Loading (kgs/d).

Comment Key
WQS – Water Quality Standards
WQC – Water Quality Concern
STS – Secondary Treatment Standards (40 CFR part 133)
PWJ – Permit Writer's Judgment

Section 401 Water Quality Certification
EPA is the appropriate authority for purposes of certifying the proposed discharge under Section 401 of the Clean Water Act. Section 401 certification is not needed from the state or the Prairie Island Indian Community as neither has federally approved water quality standards applicable to the receiving water at the point of discharge, however, EPA believes the effluent limitations included in the draft permit meet state water quality standards at the reservation boundary. We have discussed our reissuance of the permit with the Minnesota Pollution Control Agency (MPCA).

ESA and NHPA Compliance
EPA has satisfied its requirements under the Endangered Species Act and the National Historical Preservation Act. This is an existing facility. Though construction may occur at the facility, the construction is expected to be within the same footprint of the existing facility. Therefore, it is believed that the reissuance of the permit and the continued operation of the facility and associated discharge will have no effect on endangered or threatened species or their critical habitat and will have no impact on historical, archeological, or cultural resources.

Basis for Permit Requirements
The limits were developed to ensure compliance with 40 CFR Parts 131 and 133 and protection of human health and EPA's water quality criteria, and protection of Minnesota's Water Quality Standards (WQS) where they are applicable. MPCA provided much assistance in the development of the limits for the previous permits to ensure the permits would be protective of state water quality standards where applicable. At this time, the receiving water is not on the state's list of impaired waters.

pH
The limits for pH are based on secondary treatment standards pursuant 40 CFR 133. Monitoring indicates the permittee is in substantial compliance with the limits.

5-day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
The limits for $CBOD_5$ are based on secondary treatment standards pursuant 40 CFR 133. A weekly average limit of 40 mg/L and a monthly average limit of 25 mg/L are carried from the previous permit and are still applicable. The permittee has been in substantial compliance with these limits. The weekly average and the monthly 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 secondary treatment standards pursuant 40 CFR 133. A weekly average limit of 45 mg/L and a monthly average limit of 30 mg/L are carried from the previous permit and are still applicable. The permittee has been in substantial compliance with these limits. The weekly average and the monthly average are the arithmetic mean of pollutant parameter values for samples collected in a period of 7 and 30 consecutive days, respectively.

Dissolve Oxygen (DO)
Monitoring for dissolved oxygen is carried over from the previous permit as we believe it is still appropriate. There are no water quality criteria applicable at the point of discharge.

E. coli
The limits for E. coli are based on the EPA's 2012 Recreational Water Quality Criteria. The geometric mean of samples collected over a 30-day period shall not exceed 126 E. coli per 100 milliliters (ml). The statistical threshold value of 410 E. coli per 100 ml is set as the daily maximum. The limits are applicable March through October. Monitoring indicates the permittee is in substantial compliance with the limits.

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.

Prior to the last permit, the permit contained a monthly average limit of 1.0 mg/L based on Minnesota's phosphorus strategy to protect lakes from excessive nutrients. EPA looked at the facility's existing effluent quality and believed the facility could consistently achieve a monthly average of 0.8 mg/L which will provide additional protection to the receiving water. This was the case and we believe this limit is still appropriate. We also included a weekly average limit of 1.6 mg/L to be consistent with 40 CFR 122.45(d). The permit also requires the continued implementation of a phosphorus management plan. This will help the permittee control phosphorus discharges even more. While the PMP does not require additional reductions at this time, the EPA strongly encourages the permittee to continually identify and eliminate/reduce sources of phosphorus to, and improve phosphorus management within, the wastewater treatment facility.

Nitrogen
During the last permit term, the permittee collected data related to its discharge of ammonia. Using this data, EPA looked at the need to include water quality-based effluent limits for ammonia. We considered Sturgeon Lake to be a warmwater lake in the development of effluent limits. The most stringent limit calculated is a summer monthly average limit of 17.80 mg/L. Looking at the data contained in EPA's ECHO database (January 2013-December 2015) the highest value reported was a weekly average value of 10.3 mg/L. Based on this the effluent has

no reasonable potential to violate the calculated summer water quality-based effluent. Monitoring for ammonia will still be included in the permit for the reasons stated below.

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. In 2013 the MPCA completed a draft Statewide Nutrient Reduction Strategy (http://www.pca.state.mn.us/zihy1146) which 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 your facility additional influent and effluent nitrogen monitoring has been added to the permit. The permit includes influent and effluent monitoring for Ammonia Nitrogen, Nitrite plus Nitrate-Nitrogen, Total Kjeldahl Nitrogen, and Total Nitrogen at a frequency of once per month for the five-year term of the permit. There is no nitrogen limit in the permit.

Copper, Zinc, Nickel Lead, Chromium, Cyanide and Hardness

A reasonable potential analysis was conducted using a single data point for each metal and cyanide that was submitted with the application. It was determined that there was no reasonable potential found for any of the metals. However, since copper was close to having a reasonable potential, it was decided to include monitoring in the permit to get additional data for the next permit cycle. Since copper toxicity is hardness dependent, monitoring for hardness is also included.

Mercury

The permittee has not generated effluent data related to mercury. Since mercury is a general water quality concern and the facility has reported low levels of mercury in its sewage sludge, the permit contains semi-annual monitoring of the influent and effluent for mercury. A pollutant minimization plan is not required at this time. The data will be used to determine if there is a reasonable potential for the discharge to cause or contribute to a violation of the state's water quality standards where they applicable.

Asset Management – Operation & Maintenance Plan

Regulations regarding proper operation and maintenance are found at 40 CFR § 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 CFR § 122.41(e).

Similarly, a permittee has a "duty to mitigate" pursuant to 40 CFR §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 the development and 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 and other items.

- Any discharge from the old secondary pond must meet the same requirements as the main outfall.

- Additional monitoring as required for discharges with a design flow greater than 0.1 MGD. This monitoring is an application requirement of 40 CFR 122.21(j) (Part I.C.2 of the permit).

- The permit contains Industrial Waste Pretreatment Program requirements in accordance with 40 CFR Parts 122 and 403.

- The applicant is required to dispose of the domestic sewage sludge in a manner that is consistent with 40 CFR Part 503; "Standards for the Use or Disposal of Sewage Sludge" as it applies to domestic sewage sludge. If the domestic sewage sludge is disposed of outside the reservation boundaries, Minnesota regulations will also have to be complied with.

    i. The following sites have been identified by the permittee as sites that could be used for the land application of domestic sewage sludge.

1.	Church Road North Site:	Lat. 44^0 38'69"	Long. 92^0 39'60"	18 acres
2.	Church Road South Site:	Lat. 44^0 38'58"	Long. 92^0 39'17"	14.5 acres
3.	Larsen Site 1:	Lat. 44^0 38'66"	Long. 92^0 40'88"	2.95 acres

4. Larsen Site 2:	Lat. 44^0 38'74"	Long. 92^0 41'06"	37.60 acres
5. Larsen Site 3:	Lat. 44^0 39'13"	Long. 92^0 41'47"	21.5 acres
6. Larson Site 4A:	Lat. 44^0 39'24"	Long. 92^0 41'39"	67 acres
7. Larson Site 4B:	Lat. 44^0 39'09"	Long. 92^0 41'12"	68 acres
8. North Lake:	Lat. 44^0 39'10"	Long. 92^0 41'87"	12 acres

- Continue implementing a Phosphorus Management Plan and submit an operational evaluation report.

Significant Changes from the Previous Permit

The draft permit contains the following changes from the last issued permit:

1. Added 'Summary of Regular Reporting'.

2. A daily maximum limit for E. coli has been added to be consistent with 40 CFR § 122.45(d) and EPA 2012 Recreational Water Quality Criteria.

3. Added monitoring of the effluent for hardness and the influent and effluent for copper and mercury.

4. Added influent and effluent monitoring for Ammonia Nitrogen, Nitrite plus Nitrate-Nitrogen, Total Kjeldahl Nitrogen, and Total Nitrogen.

5. The permit requires weekly observations of the outfall to look for unusual characteristics of the discharge.

6. The Reporting requirements have been updated to require electronic submittal of DMRs (Part I.C.2 and Part III).

7. Requirements related to Asset Management have been added (Part I.C.3).

8. The Industrial Waste Pretreatment Program language has been updated (Part I.C.5).

9. The 'Sludge Disposal Requirements' have been updated (Part I.C.6 and Part III).

10. Added a requirement for the permittee to conduct an operational evaluation of the facility related to phosphorus removal (Part I.C.7).

11. The "Standard Conditions" have been revised (Part II).

The permit is based on an NPDES application dated June 26, 2015 (resigned and dated April 13, 2016) and additional documents found in the administrative record.

This permit will be effective for approximately five years from the date of issuance as allowed by regulation.

Written By: John Colletti June 2016
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