

STATEMENT OF BASIS

FOR THE REISSUANCE OF A NPDES PERMIT

U.S. Environmental Protection Agency
Region 5, NPDES Programs Branch - WN-16J
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Comment Period Ends: April 1, 2016

Permit No.: WI-0062847-3 (REISSUANCE)

Application No.: WI-0062847-3

Name and Address of Applicant:

St. Croix Chippewa Indians of Wisconsin
24663 Angeline Ave.
Webster, Wisconsin 54893

Name and Address of Facility
Where Discharge Occurs:

Big Sand Lake/ West Hertel WWTP
North of Highway 70 near Hertel
St. Croix Reservation
Hertel, Wisconsin
Burnett County
(N.W. ¼ of Sec 2, T38N, R15W)

Receiving Water: Unnamed wetland within the Reservation

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 permit will be issued by the U.S. Environmental Protection Agency since the discharge is located on land held in trust for the St. Croix Chippewa Indians of Wisconsin. The Supreme Court has held in a variety of contexts that tribal trust lands are reservations whether or not they are part of a formally established reservation. Oklahoma Tax Comm'n v. Citizen Band Potawatomi Indian Tribe of Oklahoma, 498 U.S. 505, 511(1991); United States v. John, 437 U.S. 634, 649 ((1978) (finding no apparent reason" why lands held in trust should not be considered reservations under §1151(a)). This interpretation has been upheld recently in the environmental context in Arizona Pub. Service Co. v. U.S. Environmental Protection Agency, 211 F.3d 1280 (D.C. Cir. 2000) where the court upheld EPA's regulations governing the authority of Indian tribes to carry out certain provisions of the Clean Air Act.

The applicant owns and operates a wastewater treatment system consisting of a series of three 25,000-gallon septic tanks. Following the septic tanks, the wastewater flows into a metering manhole, which will split the flow evenly to six constructed wetlands in parallel. Each wetland bed is 11,200 square feet in area for a total of 67,200 square feet for treatment. The constructed wetlands include Forced Bed Aeration™ for enhanced treatment. After each wetland, the water is pumped to one of three single-pass sand filters. The water flows vertically through the single-pass sand filters for polishing. The water is then discharged continuously through Outfall 001 (N.E. quarter of Section 3, Township 38N, Range 15W) to an unnamed wetland within the Reservation. The flow from Outfall 001 is distributed through four outfall pipes to reduce channeling at the head end of the wetland. Solids generated by the facility are hauled and land applied by a private hauler licensed by the State of Wisconsin. The system is designed to treat 0.070 mgd of domestic and commercial wastewater.

The service areas are south and east of Big Sand Lake and south of Highway 70 on the St. Croix Chippewa Indians of Wisconsin Reservation and Tribal Fee Land located in Burnett County in northwestern Wisconsin. The treatment system will serve 113 existing and future residential connections and 14 existing and future commercial/business connections. No non-tribal properties, outside communities, or municipalities are proposed to receive service at this time.

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
Flow	All year	Report	Report	---	---
Biochemical Oxygen Demand (BOD ₅)	All Year	20 mg/L ≥ 85% removal	30 mg/L	---	---
Total Suspended Solids	All Year	20 mg/L ≥ 85% removal	30 mg/L	---	---
Ammonia Nitrogen, Total (as N) (mg/L)	All Year	Report	---	Report	---
Copper, Total Recoverable (µg/L)	All Year	44	---	44	---
Hardness, Total (mg/L)	All Year	Report	---	---	---
Temperature (°F)	All Year	Report	---	Report	---
Dissolved Oxygen (mg/L)	All Year	---	---	---	4
E.coli	May 1 – September 30	126 E. coli/100 ml*	---	410 E. coli/100 ml	---
Total Phosphorus	All Year	Report	---	---	---
pH	All Year	---	---	9.0 S.U.	6.0 S.U.
Outfall Observation	All Year	Report	---	---	---

*Geometric Mean

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

$$0.070 \text{ mgd} \times \text{limit (mg/l)} \times 8.34 = \text{Loading (lbs/d)}.$$

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 St. Croix Chippewa Indians of Wisconsin 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 WDNR.

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 the facility may have to be expanded during the permit term to meet more stringent copper limits, 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 Wisconsin's WQS where they are applicable.

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 (CBOD₅)

The limits for BOD₅ are consistent with effluent standards that WDNR would require for a wetland discharge (limited aquatic life). A weekly average limit of 30 mg/L and a monthly average limit of 20 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. We believe the limits are protective of Wisconsin's dissolved oxygen standard at the boundary of the reservation and wetland.

Total Suspended Solids (TSS)

The limits for TSS are consistent with effluent standards that WDNR would require for a wetland discharge (limited aquatic life). A weekly average limit of 30 mg/L and a monthly average limit of 20 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)

If Wisconsin water quality standards were applicable at the point of discharge, the wetland would be considered a limited aquatic life water. A dissolved oxygen limit for this type of receiving water is 4.0 mg/L as a daily minimum. We feel this limit is appropriate for this facility as the limits would be protective of Wisconsin's dissolved oxygen standard at the boundary of the reservation. This limit is carried over from the previous permit.

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 May through September. Monitoring indicates the permittee is in substantial compliance with the limits.

Phosphorus

The previous permit required monitoring monthly monitoring for phosphorus. Based on the results of that monitoring, the discharge averages less than 150 lbs per month of phosphorus. In accordance with Wisconsin NR 217, no phosphorus limit would be required. Also, Wisconsin phosphorus water quality standards do not apply to discharges to wetlands. The permittee also sampled the wetland prior to discharging to a downstream receiving water. The average of those samples was 0.09 mg/L. Based on these results, we believe downstream waters are also being protected. The permit requires continued monitoring.

The permittee is also required to implement its existing Phosphorus Management Plan (PMP). While the PMP does not require specific 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, your wastewater treatment facility. Though it may be difficult to find "sources of high phosphorus loading" as the wastewater is mainly from domestic sources, optimizing treatment plant performance for phosphorus removal should be a more successful means for achieving phosphorus reductions at the facility. Therefore, the permit includes new language regarding optimization.

Ammonia and Temperature

Though Wisconsin's water quality standards do not apply at the discharge point, we used Wisconsin's model for calculating ammonia limits to ensure with Wisconsin's standards are met where they are applicable. The results are in the administrative record. The limits are based on seasons as defined by Wisconsin: Summer (May-September); Winter (October-April). The acute criterion is dependent only on pH but the chronic criterion is dependent on both pH and temperature.

Using the last three years of effluent pH data we calculated the means for the two seasons: Summer-6.36; Winter-6.52. At those pH values, no acute limit (the limits would be well over 50 mg/L) is needed as there would be no reasonable potential to cause or contribute to an acute water quality violation. The highest reported effluent level from the facility was 16 mg/L. We also believe there is no reasonable potential to cause or contribute to a chronic water quality violation. The most stringent limit calculated is a summer monthly average limit of 37 mg/L,

well above the highest value reported, and therefore no limit is included in the draft permit. Monitoring for ammonia will still be included in the permit.

Temperature

This permit requires temperature monitoring for calculating future ammonia limits and to obtain data to determine if the discharge has a reasonable potential to cause or contribute to a violation of Wisconsin's water quality standards. As the state's water quality standards are not applicable at the point of discharge, however, we do not believe the temperature standards would be violated at the reservation boundary. We do recognize that aquatic life do not discern boundaries and will include effluent temperature monitoring in the permit with a reopener to possibly modify the permit to include temperature limits at a later time.

Copper and Hardness

The daily maximum limit for copper is being carried over from the previous permit. It was developed to be protective of the Wisconsin's water quality standards where they are applicable. We believe the limit is still appropriate. We are requiring twice per month sampling instead of monthly to get a better representation of the discharge. Sampling for total hardness is also increasing to twice per month as copper toxicity is dependent on hardness. The permit also requires the permittee to continue implementing a pollutant minimization program to reduce copper.

Receiving Water Ecosystem Study

The receiving water ecosystem study has been carried over from the previous permit. Since the discharge is to a wetland, the study is used to help identify potential impacts to the receiving water ecosystem. In this permit, we have required sampling for total dissolved copper as part of the study. Data from the study also is used to help ensure state water quality standards are being protected.

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.
- 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 septage 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 septage. If the septage is disposed of outside the reservation boundaries, Wisconsin regulations will also have to be complied with. The permittee’s preferred method of disposal is to have the domestic septage disposed of at the Rice Lake WWTP. If this option is not available, the permittee can land apply the domestic septage as specified below.
 - i. The following sites have been identified by the permittee as sites that could be used for the land application of domestic septage by the permittee’s hauler.

Legal Description											
WDNR#	QQQ	QQ	Q	SEC	TOWNSHIP	RANGE	TOWN	COUNTY	APPROVED ACRES	SITE #	SITE OWNER
28623		SW	SW	29	36N	11W	Oak Grove	Barron	10	Bowen 05	John Kokesh
28640		NW	NE	22	36N	11W	Oak Grove	Barron	45	Bowen 12	Wayne Solum
28676		SW	SW	15	36N	11W	Oak Grove	Barron	60	Sol 2	Wayne Solum
46389		SE	NE	22	36N	11W	Oak Grove	Barron	45	WS/2	Wayne Solum
49757		E	SE	23	36N	11W	Oak Grove	Barron	58	GT/GT1	John Bowen
73407		NE	SW	2	36N	11W	Oak Grove	Barron	40	Bow/1	John Bowen

73445	W	SE	SW	2	36N	11W	Oak Grove	Barron	20	Bow/2	John Bowen
102052		NW	NW	25	36N	12W	Bear Lake	Barron	25	Bow/4	John Bowen
84527	N	SW	NE	26	36N	13W	Lakeland	Barron	23	MN2	Marvin Ness

- Continue implementing a Phosphorus Management Plan and submit an operational evaluation report.
- Continue implementing a Copper Management Plan.
- The permit also requires monitoring of the effects of the discharge on the receiving water.
- The permit contains a reopener clause for the possible inclusion of temperature limits.

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. Monitoring for temperature has been added. A reopener clause related to temperature has also been added (Part I.C.9)
4. Increased the frequency of monitoring of the effluent for copper and hardness. Added a monthly average limit for copper. Also corrected the load limits associated with copper.
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).
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.4).
9. The 'Sludge Disposal Requirements' have been updated (Part I.C.5).
10. Added monitoring for total dissolved copper in the receiving water ecosystem study (Part I.C.6).
11. Added a requirement for the permittee to conduct an operational evaluation of the facility

related to phosphorus removal (Part I.C.7).

12. The “Standard Conditions” have been revised (Part II).

The permit is based on an NPDES application dated January 20, 2015 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.

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