STATEMENT OF BASIS

FOR THE ISSUANCE OF
A NPDES PERMIT

U.S. Environmental Protection Agency
Region 5, NPDES Programs Branch - WN-15J
77 West Jackson Boulevard
Chicago, Illinois 60604
(312) 886-6106

Public Notice No.: 17-10-01-A

Public Notice Issued On: October 25, 2017

Comment Period Ends: November 24, 2017

Permit No.: MN-0075001-2 (REISSUANCE)

Application No.: MN-0075001-2

Name and Address of Applicant:

Upper Sioux Community, Pezihutazizi Oyate
5722 Travers Lane
P.O. Box 147
Granite Falls, Minnesota 56241

Name and Address of Facility Where Discharge Occurs:

USC Wastewater Treatment Facility
Upper Sioux Indian Reservation
Upper Sioux Community, Minnesota
Yellow Medicine County
Lat: 44 deg 45 min N
Long: 95 deg 29 min W

Receiving Water: Minnesota River

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 and discharge are located within the Upper Sioux Indian Reservation. The permit will be issued by the U.S. Environmental Protection Agency since the discharge is located on land held in trust for the Upper Sioux Community. 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 facility. Wastewater flows are pumped to the treatment facility from four lift stations located in the community. Raw screening at the wastewater treatment facility removes large objects from the waste stream prior to the treatment units. Biological treatment is accomplished utilizing a membrane bioreactor process. This process consists of an extended aeration activated sludge basin followed by membrane filters. The extended aeration activated sludge process utilizes bacteria to remove oxygen-demanding wastes and particulates from the wastewater. Prior to entering the membrane filtration tanks, fine screens remove any fibrous material which may damage the membranes. The membrane system provides for separation of solids from the waste stream, thus removing CBOD, TSS and phosphorous from the wastewater effluent. In addition to the membrane system, final clarifiers designed to handle periods of high hydraulic load to the facility provide solids separation for a portion of the facility flow. Disinfection following the membranes and the final clarifier treated flows is accomplished utilizing ultraviolet disinfection. The average daily design flow is 63,445 gallons per day, the average wet weather design flow is 95,061 gallons per day, the peak design day flow is 107,531 gallons per day and the peak hourly design flow is 130,000 gallons per day. The effluent discharges through Outfall 001 to the Minnesota River (Latitude: 44°45’ N, Longitude: 95°29’ W).

Sewage sludge generated throughout the treatment process is stored in a holding tank with a 180-day minimum capacity of 2.5% total solids. The concrete storage tanks are aerated to provide treatment and prevent odors. The storage tank is designed to allow for lime treatment if needed to meet pathogen reduction requirements. Land application of the treated sewage sludge is to agricultural land owned by the permittee.

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

Parameter	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration			
	30-Day	7-Day	Daily	Units	30-Day	7-Day	Daily	Units
Flow	Report	---	Report	MGD	---	---	---	---
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)								
	4.1	---	8.2	kgs/day	10	---	20	mg/L
Total Suspended Solids (TSS)								
	4.1	---	8.2	kgs/day	10	---	20	mg/L
Total Phosphorus (as P)								
Oct. 1- April 30	0.20	---	---	kgs/day	0.5	---	---	mg/L
May 1- Sept. 30	---	---	0.20	kgs/day	---	---	Report	mg/L
E. coli	---	---	---	---	126	---	235	E.coli/100 ml
					Minimum Daily		Maximum Daily	
pH					6.0	---	9.0	S.U.
Dissolved Oxygen					7.0	---	---	mg/l

Loading limits in the permit were calculated using the following formula based on the peak design day flow: 0.108 mgd x limit (mg/L) x 3.78 = Loading (kg/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 401certification is not needed from the state nor the Upper Sioux Community as neither has federally approved water quality standards applicable to the receiving water at the point of discharge.

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 during the permit term, the construction would occur within the same footprint of the permittee's 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. The issuance of the permit will ensure that a quality effluent is being produced.

Basis for Permit Requirements

The limits were developed to ensure compliance with 40 CFR Parts 131 and 133, EPA's water quality criteria and protection of Minnesota's water quality standards where they are applicable. The Minnesota River as it leaves the Reservation is classified as an outstanding resource value water with a restricted discharge qualifier under Minnesota Rule 7050.0470, subpart 5. This part of the river's full use designation is: Class 2B (aquatic life and recreational use), 3C (industrial cooling and materials transport without a high degree of treatment), 4A (irrigation), 4B (livestock and wildlife watering), 5 (aesthetics and navigation) and 6 (other uses). Under the Minnesota Department of Natural Resources' Minnesota Rule 6105.1250, subpart C, the river is further listed as a "scenic" river. Note that a water is not picked for scenic status because it has outstanding water quality. The $7Q_{10}$ is 115 cubic feet per second (cfs).

The lower 22 miles of the Minnesota River in the Minneapolis-St. Paul metropolitan region have been listed as impaired for dissolved oxygen due to elevated levels of BOD. The Minnesota Pollution Control Agency (MPCA) developed a total daily maximum load (TMDL) report for the Minnesota River which EPA approved in 2004. No allocation was given to this facility. Prior to the issuance of the initial permit for this facility, the permittee requested that the model used in the TMDL report be rerun with the permittee's discharge included to see if the permittee's discharge would cause or contribute to a violation of water quality standards or cause a substantive difference in the phosphorus, BOD or dissolved oxygen conditions in the impaired reaches of the lower Minnesota River. It was concluded that the discharge, even at projected peak flows for 2030, will have minimal impacts at the TMDL compliance point in the Minnesota River at Jordan, and therefore, will not cause or contribute to a violation of water quality standards. A report from TetraTech describing the inputs and their analysis of the model can be found in the permittee's November 10, 2011 Environmental Assessment (EA) for the proposed wastewater treatment facility. Since the TetraTech report is still applicable for this discharge, we

have included a copy of the 2011 EA in the administrative record.

Carbonaceous Biochemical Oxygen Demand($CBOD_5$) and Total Suspended Solids (TSS)

Since the discharge is so small (maximum 0.108 mgd or 0.167 cfs) and the annual low flow $7Q_{10}$ is relatively large (115 cfs), standard secondary treatment effluent limits (40 CFR Part 133) would be sufficient to protect the river's water quality as demonstrated by the TMDL model above. To be more conservative and add additional safety factors into the model, the permittee has designed the facility to meet a 30-day average limit of 10 mg/L and daily maximum limit of 20 mg/L to be good stewards of the environment. The permittee has been in substantial compliance with these limits and therefore, these limits have been carried over into the draft permit.

E. coli

The limits for E. coli are based on the EPA's water quality criteria in existence at the time the previous 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 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. Since the permittee has been in substantial compliance with the existing permit limits, in accordance with 40 CFR 122.44(l) (anti-backsliding), the limits from the existing permit have been carried over into the draft permit.

Mercury and PCBs

The quality of the receiving water as it leaves the reservation is impaired due excessive amounts of PCBs and mercury in fish tissue. EPA approved a statewide mercury TMDL in March 2007. MPCA also developed a strategy for implementing the TMDL in NPDES permits. Consistent with that strategy, the existing permit required four monitoring events for mercury during the term of the permit. The results of that monitoring were all less than 0.5 ng/L, which is the method detection limit. Based on these results, EPA does not believe the effluent from the facility will have a reasonable potential to cause or contribute to a violation of Minnesota's Water Quality Standards (6.9 ng/L) and therefore will not require additional monitoring. MPCA is developing a TMDL for PCBs for the impaired reaches of the Minnesota River. The existing permit required four monitoring events for PCBs during the term of the permit. The results were all less than the method detection limit and therefore is not a source of PCBs to the river. However, the permit contains a reopener clause to allow the incorporation of additional requirements if needed to implement the TMDL. This draft permit will not require additional monitoring for PCBs.

Phosphorus

As stated above, the permittee had TetraTech rerun the model that was used in the development of the TMDL for the Minnesota River to determine if adding the proposed discharge would have any impacts at the TMDL compliance point at Jordan. TetraTech modeled the discharge as a constant concentration (0.5 mg/L) at the peak day flow for 2030 (0.108 mgd). Because peak day flow was used, the analysis is in terms of a maximum rather than an average. However, what

was really analyzed was the maximum load (not concentration). Therefore, the permit includes a daily maximum phosphorus load limit of 0.20 kgs/day during the critical period (May – September). No concentration limit is needed as the model only looked at total load. No monthly average limit is needed during this period as the model only sets a maximum limit. During the non-critical period (October – April), the permit includes a 30-day average limit of 0.5 mg/L as the permittee is designing the facility for year round phosphorus removal. Since during the non-critical period a maximum level of phosphorus is not needed to be maintained, a maximum limit is not included in the permit during the non-critical period. The permittee has been in substantial compliance with these limits and therefore, these limits have been carried over into the draft permit.

Dissolve Oxygen

A minimum dissolved oxygen discharge limit of 7.0 mg/L is included in the permit as this value was used in the TMDL model run. The permittee has been in substantial compliance with this limit and therefore, this limit has been carried over into the draft permit.

Additional Monitoring

The draft permit requires annual monitoring for Total Kjeldahl Nitrogen (TKN), Nitrate plus Nitrite Nitrogen, Oil and Grease, and Total Dissolved Solids (TDS). This monitoring is an application requirement of 40 CFR § 122.21(j).

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

- Electronic reporting is required.

- 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 and other items.

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

- Compliance with 40 CFR Part 503 (sludge use and disposal regulations) (Part III of the permit). Part III was developed using the Part 503 Implementation Guidance for sludge and 40 CFR Parts 122, 501, and 503.

- The permittee has identified the following land application site that it plans to use for the land application of sewage sludge that meets Class B pathogen removal requirements as defined in 40 CFR Part 503. The property is within the boundaries of the Upper Sioux Indian Reservation.

Site Name	Site Area and Location
Site 1	~ 70 acres; State Highway 23 and County Highway 44, Yellow Medicine County, Upper Sioux Community, MN (44.769321 N, 95.546939 W)

- A reopener is included to allow for the incorporation of TMDL requirements.

- As a condition of this permit, the permittee shall monitor the discharge from monitoring point 001 for Total Kjeldahl Nitrogen (TKN), Nitrate plus Nitrite Nitrogen, Oil and Grease, Total Dissolved Solids (TDS) and Ammonia (as N). This monitoring is an application requirement of 40 CFR 122.21(j), effective December 2, 1999.

Significant Changes from the Previous Permit

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

1. Updated the "Treatment Facility Description." (Page I-2)

2. Added "Summary of Regular Reporting." (Page I-2)

3. Added an "Influent Monitoring" table. (Part I.A.2)

4. The Reporting requirement has been changed to require electronic submittal of DMRs. (Part I.B.2)

5. Additional requirements related to Asset Management have been added. (Part I.B.3)

6. Increased the amount of acreage available for land application of sewage sludge. (Part I.B.5)

7. A reopener has been included to allow for the incorporation of TMDL requirements. (Part I.B.6)

The permit is based on applications dated December 15, 2016 (2A) and April 12, 2017 (2S) and additional supporting documents found in the administrative record.

The permit will be effective for approximately five years from the date of issuance as allowed by 40 CFR § 122.46.

Written By: John Colletti October 2017
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