

August 2014
FACT SHEET
Authorization to Discharge under the
National Pollutant Discharge Elimination System
for the
BUREAU OF INDIAN AFFAIRS NENAHNEZAD COMMUNITY SCHOOL
WASTEWATER TREATMENT PLANT

NPDES Permit No. NN0020800

Applicant Address: Nenahnezad Community School
P.O. Box 337
Fruitland, NM 87416

Applicant Contact: Larry D. Cunningham, Principal
(505) 960-6922

Facility Address: Nenahnezad Community School
Off County Road 6675
Fruitland, NM 87416

Facility Contact: Clarence Chavez, Wastewater Operator
(505) 960-6922

I. Summary

The U.S. Department of the Interior -- Bureau of Indian Affairs ("BIA") was issued an National Pollutant Discharge Elimination System ("NPDES") Permit (NN0020800) on May 14, 2009 for the Nenahnezad Community School wastewater treatment plant ("WWTP"), pursuant to the U.S. Environmental Protection Agency Region 9 ("USEPA") regulations set forth in Title 40, Code of Federal Regulations ("CFR") Part 122.21. The permit became effective on June 1, 2009 and expired at midnight, May 31, 2014. BIA applied to the EPA for reissuance on April 28, 2014. All the terms and conditions of the 2009 permit are in effect until the reissuance of a new permit. This fact sheet is based on information provided by the applicant through its application and discharge data submittal, along with the appropriate laws and regulations.

Pursuant to Section 402 of the Clean Water Act (CWA), the USEPA is proposing issuance of an NPDES permit renewal to the BIA Nenahnezad ("permittee") for the discharge of treated domestic wastewater to the lagoons across Bitsui Wash which flows into San Juan River, a water of the United States.

II. Description of Facility

The BIA Nenahnezad Community School wastewater treatment facility is located in Fruitland, San Juan County, New Mexico, which is in the northern portion of the Navajo Nation. It is adjacent to the school property. The facility serves a population of approximately 525, receives only domestic

sewage and has a design flow of 0.024 million gallons per day (MGD). The facility is an extended aeration package plant equipped with ultra-violet (“UV”) treatment and connected to a backup four-cell, gravity flow evaporation lagoon system. The facility discharges treated wastewater through a 6-inch pipe (Outfall Number 001) into Bitsui Wash, a tributary to San Juan River. This wash is reportedly perennial (sourced by overflow from an irrigation canal and possibly a natural seep). Biosolids collected from the package plant is transported off the Navajo Nation for disposal.

Several years ago, the facility underwent several upgrades which included sandblasting and resurfacing of the holding tank, replacements of the blowers, piping and pumps, and the addition of a new UV disinfection system. The package plant is bypassed during electrical outages and low flow periods, with flow diverted to the backup lagoons. Although BIA is a federal facility and not a publicly-owned treatment works (POTW), EPA will be proposing federal discharge limits similar to those that are applicable to POTWs. Any sampling and monitoring under the proposed permit shall be performed at Outfall No. 001.

The Navajo Nation EPA’s (“NNEPA”) conducted a compliance evaluation inspection (CEI) on December 30, 2013 and noted lack of flow measurements that may be causing improper reporting of discharge monitoring data and determination of compliance with the mass limits. Further NNEPA review and findings will be detailed in the section under facility compliance history.

III. Basis of Proposed Permit Requirements

Section 301(a) of the Clean Water Act (“CWA”) provides that the discharge of any pollutant to waters of the United States is unlawful except in accordance with a National Pollutant Discharge Elimination System (“NPDES”) permit. Section 402 of the Act establishes the NPDES program. The program is designed to limit the discharge of pollutants into waters of the United States from point sources [40 CFR 122.1(b)(1)] through a combination of various requirements including technology-based and water quality-based effluent limitations.

Sections 402 and 301(b)(1)(C) of the CWA require that the permit contain effluent limitations to meet water quality standards. Specifically, the regulation under 40 CFR 122.44(d) states that an NPDES permit must contain:

"Water quality standards and State requirements: any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under Sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:

(1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.

Section 40 CFR 122.44(d)(i) states the following:

"Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

A. Navajo Nation Surface Water Quality Standards

In accordance with 40 CFR 122.44(d), the need for discharge limitations for all pollutants that may impact applicable water quality criteria and water quality standards must be evaluated. As part of this evaluation, discharge limitations are based on application of the water quality standards. USEPA approved the 1999 Navajo Nation Surface Water Quality Standards (“NNSWQS”), on March 23, 2006. The NNSWQS were revised in 2007 and approved by the EPA on March 26, 2009. A 2010 *draft* NNSWQS revision is currently under review by NNEPA and USEPA. The approved 1999 Navajo Nation water quality standards, the 2007 revision and the 2010 *draft* revisions will be used on a best professional judgment (“BPJ”) basis for purposes of developing water quality based effluent limitations.

B. Applicable Technology-Based Effluent Limitations, Water Quality-Based Effluent Limitations (“WQBELs”) and BPJ

Technology-based effluent limitations require minimum levels of treatment based on currently available treatment technologies. Section 301 of the CWA established a required performance level, referred to as “secondary treatment,” that all POTWs were required to meet by July 1, 1977. Although BIA is a federal facility and not a POTW, EPA will be proposing discharge limits similar to those that are applicable to POTWs. Federal secondary treatment effluent standards for POTWs are contained in Section 301(b)(1)(B) of the CWA. Implementing regulations for Section 301(b)(1)(B) are found at 40 CFR Part 133. The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. These technology-based effluent limits apply to all municipal wastewater treatment plants, and identify the minimum level of effluent quality attainable by secondary treatment in terms of Five-Day Biochemical Oxygen Demand (BOD₅), and Total Suspended Solids (TSS). The requirements contained in the draft permit are necessary to prevent violations of applicable treatment standards

IV. Determination of Effluent Limitations, Monitoring, and Reporting Requirements

Typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil and grease, and solids. Therefore, EPA proposes the following provisions and effluent discharge limitations for flow, BOD₅, TSS, TDS, *E. Coli*, and ammonia to be taken concurrent with temperature and pH measurements. A scan of priority pollutants is also proposed. The facility uses ultra-violet disinfection system so chlorine is not a concern. Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge by prior to entry into the receiving water.

A. Federal Secondary Treatment Effluent Discharge Limitations

1. Five-Day Biochemical Oxygen Demand (BOD₅):

Under the proposed permit, the discharge shall not exceed a weekly average of 45 mg/l and monthly average of 30 mg/l BOD₅, and shall achieve no less than a monthly average rate of 85% removal. These limits are required under 40 CFR Section 133.102(a). The limits are designated as 30-day and 7-day averages since the facility operates a POTW, and it would be impracticable to do otherwise [40 CFR 122.45(d)].

Under 40 CFR Section 122.45 (f), mass limits are required for BOD₅. Based upon the 0.024 MGD flow, the mass limits for BOD₅ are based on the following calculations:

Monthly average

$$\frac{0.023 \text{ MG}}{\text{day}} \times \frac{30 \text{ mg}}{\text{l}} \times \frac{8.345 \text{ lb/MG}}{\text{mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 2.6 \text{ kg per day}$$

Weekly average

$$\frac{0.023 \text{ MG}}{\text{day}} \times \frac{45 \text{ mg}}{\text{l}} \times \frac{8.345 \text{ lb/MG}}{\text{mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 3.9 \text{ kg per day}$$

The daily maximum will also be monitored and reported. The monitoring frequency is once per month, consistent with the previous permit.

2. Total Suspended Solids (TSS):

Under the proposed permit, the discharge shall not exceed a weekly average of 45 mg/l and monthly average of 30 mg/l TSS, and shall achieve no less than a monthly average rate of 85% removal. These limitations are consistent with 40 CFR Section 133.102(b). Mass limit requirements in accordance with 40 CFR 122.45(f) have also been set in the proposed permit. Mass loading shall not exceed a 7-day average of 3.9 kg/day and a 30-day average of 2.6 kg/day. The monitoring frequency is once per month, consistent with the previous permit.

3. Priority Pollutant Scan:

The proposed permit establishes a monitoring requirement for the full list of priority pollutants as listed in the Code of Federal Regulations (CFR) at 40 CFR Part 423, Appendix A. No limit is set at this time. Should the results reveal levels below EPA's National Water Quality Criteria for priority pollutants, monitoring will no longer be required of the permittee.

B. Water Quality Based Effluent Limitations ("WQBELs")

A requirement for monitoring discharge volume is proposed in the proposed permit to ensure that the discharge will not cause severe erosion at any discharge location(s). In accordance with the requirements set forth at 40 CFR Parts 122.45(e), specific discharge flow rate will be authorized for the outfall. The discharge shall not exceed 0.024 million gallons per day at Outfall No. 001.

Water quality-based effluent limitations, or WQBELs, are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard. (40 CFR 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the

variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water [40 CFR 122.44 (d)(1)(ii)].

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996). These factors include:

1. Applicable standards, designated uses and impairments of receiving water

The 2007 NNSWQS established water quality criteria for the following beneficial uses (perennial Bitsui Wash, a tributary of the San Juan River) are defined by the Navajo Nation's Surface Water Quality Standards as secondary human contact, ephemeral warm water habitat, and livestock and wildlife watering (Table 204.1, pg. 20).

2. Dilution in the receiving water

Discharge from Outfall 001 flows Bitsui Wash, a tributary of the San Juan River, which may have no natural flow during certain times of the year. Therefore, no dilution of the effluent has been considered in the development of water quality based effluent limits applicable to the discharge.

3. Type of industry

Typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil and grease, and solids.

4. History of compliance problems and toxic impacts

The Navajo Nation Environmental Protection Agency ("NNEPA") conducted a compliance evaluation inspection of the package plant on December 30, 2013 and observed that discharge flow rates were not actually being measured and recorded. Instead, the plant design flow capacity was used to calculate mass loadings to determine compliance with the permit limits. In addition, during review of the Discharge Monitoring Reports ("DMRs") from April 2011 to September 2013, NNEPA found numerous deficiencies as detailed in follows: (1) erroneous data reported due to faulty flow values, (2) no DMR submitted in September 2011, (3) no samples collected in August 2012, (4) *E. Coli* exceedances in May 2012, (5) TSS percent removal not met in September 2012, (6) erroneous percent removal values during November and December 2012, (7) no Ammonia and Temperature values reported for 3 quarters; and, (8) erroneous Total Dissolved Solids values reported in 4 quarters.

5. Existing data on toxic pollutants

No existing data is available on toxic pollutants.

C. Rationale for WQBELs

Pursuant to the narrative surface water quality standards (Section 202 of 2007 NNSWQS and 2010 *draft* revisions), the discharge shall be free from pollutants in amounts or combinations that cause solids, oil, grease, foam, scum, or any other form of objectionable floating debris on the surface of the water body; may cause a film or iridescent appearance on the surface of the water body; or that may cause a deposit on a shoreline, on a bank, or on aquatic vegetation.

1. Determination of Effluent Limitation for *E. coli*: Presence of pathogens in untreated and treated domestic wastewater indicates that there is a reasonable potential for *E. coli* bacteria levels in the effluent to cause or contribute to an excursion above the WQS. In the proposed permit, the monthly geometric mean of *E. coli* bacteria shall not exceed 126/100 ml as a monthly average and 235/100 ml as a single sample maximum. These limits are based on the NNSWQS for secondary human contact (p. 14). The monitoring frequency is once per month.

2. Total Dissolved Solids (TDS): Presence of solids in untreated and treated domestic wastewater indicates that there is a reasonable potential for TDS levels in the effluent to cause or contribute to an excursion above the WQS. The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary. The monitoring frequency is once per month, consistent with the previous permit.

3. Total Ammonia Nitrogen (NH₃-N): Presence of ammonia in untreated and treated domestic wastewater indicates that there is a reasonable potential for levels in the effluent to cause or contribute to an excursion above the WQS. In accordance with the NNSWQS for protection of aquatic and wildlife habitat, the proposed permit contains effluent limitations for total ammonia. The ammonia limits are temperature and pH dependent and are listed in Table 206.2 and Table 206.3 (pages 36-37) of 2007 NNSWQS and *draft* 2010 NNSWQS revisions. The monitoring frequency is once per quarter, consistent with the previous permit. Measurements for ammonia are required to be taken concurrently with temperature and pH measurements.

4. pH: Untreated and treated domestic wastewater could be contaminated with substance that affects the pH. Therefore, there is a reasonable potential for pH levels in the effluent to cause or contribute to an excursion above the WQS. In order to ensure adequate protection of beneficial uses of the receiving water, a maximum pH limit of 9.0 and a minimum limit of 6.5 S.U. are established in Section 206.C. of 2007 NNSWQS and 2010 *draft* revisions. The monitoring frequency is once per month, consistent with the previous permit.

V. Reporting

The proposed permit requires discharge data obtained during the previous three months to be summarized on monthly DMR forms and reported quarterly. If there is no discharge for the month, report in the No Discharge box on the DMR form for that month. These reports are due January 28, April 28, July 28, and October 28 of each year. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the US EPA and the Navajo Nation EPA.

VI. General Standards

The proposed permit sets general standards that are narrative water quality standards contained in the Navajo Nation Water Quality Standards, Section 203. These general standards are set forth in

Section B. General Discharge Specifications of the permit.

VII. Permit Reopener

At this time, we have no reason to establish any other water quality-based limits. Should any monitoring indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursion above a water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. The proposed permit may be modified, in accordance with the requirements set forth at 40 CFR 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new Tribal water quality standards.

VIII. Sewage Sludge Requirements

The proposed permit requires a report to USEPA and NNEPA within 90 days of permit issuance with an estimate of the quantity of sewage sludge currently on site, and a projection of when sewage sludge will next be removed. Ninety (90) days prior to removing sewage sludge for use or disposal, the permittee is required to submit a plan describing the quantity of sewage sludge to be removed, mechanisms for removing, and a proposed sampling plan for pollutants regulated under the use or disposal option being selected. Upon approval of this plan by USEPA and NNEPA, the permittee will have the sewage sludge removed as described. The permit also requires compliance with all applicable requirements of Section 405(d) of the CWA, and 40 CFR Sections 258 (for sewage sludge sent to a municipal landfill) and 503 (for sewage sludge placed in a sludge-only surface disposal site, land applied as fertilizer, used in land reclamation, or incinerated).

IX. Other Considerations Under Federal Law

A. Anti-Degradation

USEPA's antidegradation policy at 40 CFR Section 131.12 and the NNSWQS require that existing water uses and level of water quality necessary to protect the existing uses be maintained. As described in this fact sheet, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit does not include a mixing zone; therefore, these limits will apply at the end of the pipe without consideration of dilution in the receiving water. Therefore, due to the low levels of toxic pollutants present in the effluent, the high level of treatment being obtained, and water quality-based effluent limitations, it is not expected that the discharge will adversely affect receiving water bodies.

B. Anti-Backsliding

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those established in the previous permit, except as provided in the statute. The proposed permit is a renewal and therefore does not allow backsliding.

C. Threatened and Endangered Species and Critical Habitat

1. Background

Section 7 of the Endangered Species Act (ESA) of 1973 requires Federal agencies such as EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any actions authorized, funded or carried out by the Agency are not likely to jeopardize the continued existence of any Federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species.

Since the issuance of NPDES permits by EPA is a Federal action, consideration of a permitted discharge and its effect on any listed species is appropriate. The proposed NPDES permit authorizes the discharge of treated domestic wastewater into the Torreon Wash, a tributary to Chico Arroyo, a tributary to the Rio Puerco, a water of the United States.

EPA sent a request to the Navajo Nation's Department of Fish & Wildlife Natural Heritage Program (NHP) for species information on May 20, 2014. The FWS has deferred all of its survey and information collection in the Navajo Nation to the Navajo Nation NHP. EPA has not received any response from the NHP to date.

The information below is listed in the Navajo Nation's Department of Fish & Wildlife Natural Heritage Program (NHP) database. NHP had identified eight (8) listed, proposed or candidate T or E species that may potentially occur within the facility boundary or on the 7.5 minute quadrangle(s) of the facility boundary, as follows:

Names (common and scientific)	Status
Mountain Plover (<i>Charadrius montanus</i>)	Proposed T
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	E
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	T
Black-footed ferret (<i>Mustela nigripes</i>)	E
Colorado pikeminnow (<i>Ptychocheilus lucius</i>)	T
Razorback sucker (<i>Xyrauchen texanus</i>)	E
Mancos Milk-vetch (<i>Astragalus humillimus</i>)	Candidate
Mesa Verde cactus (<i>Sclerocactus mesae-verdae</i>)	T

The NHP had also identified eight (8) Navajo endangered species as follows:

Names (common and scientific)
Golden Eagle (<i>Aquila chrysaetos</i>)
Ferruginous Hawk (<i>Buteo regalis</i>)
Bluehead sucker (<i>Catostomus discobolus</i>)
Mottled sculpin (<i>Cottus bairdi</i>)
Peregrine Falcon (<i>Falco peregrinus</i>)
Roundtail chub (<i>Gila robusta</i>)
Northern Leopard Frog (<i>Rana pipiens</i>)

Naturita Milk-vetch (*Altragalus naturitensis*)

2. EPA's Finding:

This permit authorizes the discharge of treated wastewater in conformance with the federal secondary treatment regulations and the Navajo Nation Surface Water Quality Standards. These standards are applied in the permit both as numeric and narrative limits. The standards are designed to protect aquatic species, including threatened and endangered species, and any discharge in compliance with these standards should not adversely impact any threatened and endangered species.

EPA believes effluent released in compliance with this permit will have no effect on any federally-listed threatened or endangered species or its critical habitat that may be present in the vicinity of the discharge. The treatment facility has been in existence for some time, and no new construction or modifications had been made to it due to the proposed NPDES permit. Therefore, no requirements specific to the protection of endangered species are proposed in the permit. EPA may decide that changes to the permit may be warranted based on receipt of new information. A re-opener clause has been included should new information become available to indicate that the requirements of the permit need to be changed.

X. Administrative Information -- Public Notice, Public Comments, and Requests for Public Hearings

In accordance with 40 CFR 124.10, public notice shall be given by the U.S. EPA that a draft NPDES permit has been prepared by mailing a copy of the notice to the permit applicant and other Federal and State agencies, and through publication of a notice in a daily or weekly newspaper within the area affected by the facility. The public notice shall allow at least 30 days for public comment on the draft permit.

In accordance with 40 CFR 124.11 and 12, during the public comment period, any interested person may submit written comments on the draft permit, and may request a public hearing if no hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. In accordance with 40 CFR 124.13, all persons must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position within thirty (30) days from the date of the public notice. Comments may be received either in person or mailed to:

U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
Attn: Linh Tran
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 972-3511

Interested persons may obtain further information, including copies of the draft permit, fact sheet/statement of basis, and the permit application, by contacting Linh Tran (WTR-5) at the U.S. EPA address, above. Copies of the administrative record (other than those which U.S. EPA maintains as

confidential) are available for public inspection between 8:00 a.m. and 4:30 p.m., Monday through Friday (excluding federal holidays).

In accordance with 40 CFR 124.12, the U.S. EPA shall hold a public hearing when, on the basis of requests, a significant degree of public interest in the draft permit exists. The Director may also hold a public hearing when, for instance, such a hearing might clarify one or more issues involved in the permit decision. Public notice of such hearing shall be given as specified in 40 CFR 124.10.