

US EPA ARCHIVE DOCUMENT

April 2010
FACT SHEET
Authorization to Discharge under the
National Pollutant Discharge Elimination System
for the
Bureau of Indian Affairs – Wingate High School Wastewater Treatment Lagoon
NPDES Permit No. NN0020958*

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Bureau of Indian Affairs (BIA)
Navajo Regional Office
P.O. Box 1060
Gallup, NM 87305

Applicant Contact: Jean Romancito, Environmental Protection Specialist
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Facility Address: BIA Wingate High School
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Facility Contact: Wilbert Dempsey, Facility Operations Specialist Supervisor
(505) 488-6421

I. Summary

The BIA was issued a National Pollutant Discharge Elimination System (“NPDES”) Permit (No. NM0020958) on December 22, 2003 for its BIA Wingate Schools wastewater treatment lagoon facility, pursuant to the U.S. Environmental Protection Agency (“U.S. EPA”) regulations set forth in Title 40, Code of Federal Regulations (“CFR”) Part 122.21. The permit was effective on December 25, 2003, through midnight, December 25, 2008. BIA reapplied to U.S. EPA Region 9 for reissuance on September 11, 2008. All the terms and condition of the 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 U.S. EPA is proposing issuance of the NPDES permit renewal to BIA Wingate High School (permittee) for the discharge of treated domestic wastewater discharge of treated domestic wastewater to an unnamed wash of the Puerco River, a tributary to the Lower Colorado River, a water of the United States.

* *The National Pollutant Discharge Elimination System (NPDES) permit number for this facility had been changed from NM0020958 to NN0020958 in December 2005. This discharger was notified of the change. The two-letter prefix of the permit number is being replaced with NN for its state code to provide for more efficient data management.*

II. Background

The BIA Wingate Schools wastewater treatment facility is located at the intersection of Shush Drive and Highway 400, in the community of Fort Wingate, McKinley County, New Mexico, within the southeastern portion of the Navajo Nation. Previously, the permit covered the operation and discharge of both Wingate High School and the former BIA Wingate Elementary School, via separate wastewater treatment facilities (WWTFs). Based on information provided in the BIA's September 11, 2008 NPDES permit application and the compliance evaluation inspection (CEI) most recently conducted by the Navajo Nation EPA's ("NNEPA") on April 16, 2008, the elementary school and its WWTF are no longer utilized and the designation of a second discharge outfall number 002 is therefore eliminated in the proposed permit issuance. NNEPA issued the CEI report on May 14, 2008.

The remaining Wingate High School treatment facility serves a population of approximately 800, receiving only domestic sewage with a design flow of 0.1 million gallons per day ("MGD"). Treatment consists of a three-cell, gravity flow evaporation system with aeration. Micro-organisms begin digestion of the solids while the liquid portion of the wastestream evaporates to the atmosphere. Effluent leaves Cell #1 through a transfer pipe and enters either Cell #2 or #3, or effluent can be transferred from Cell #2 to Cell #3, for final treatment and polishing, as well as additional aeration and evaporation time prior to discharge. Effluent undergoes disinfection by chlorination and dechlorination prior to discharge to Outfall No. 001 into an unnamed wash of the Puerco River, a tributary of the Lower Colorado River. The facility discharges continuously when the school is in full session, and experiences intermittent or no discharge when school is out. Any sampling and monitoring under the proposed permit shall be performed at Outfall No. 001.

The May 2008 CEI report found the facility to be discharging wastewater from an overflow pipe from Cell #1 that appeared to have seeped untreated sewage to the exterior of the facility and onto an area not designated as a discharge point. The report also noted a minor flow from a pipe that was releasing groundwater from the collection system that was intercepting groundwater from a natural spring that was filling Cell #3. In addition, there were new sewer lines being installed running from the school to the treatment facility and new overflow valve boxes in Cells #1 and #2. The report noted excessive overgrowth of vegetation on the banks of all three cells and the wastewater color ranged from olive green to light green in the cells on the day of the inspection.

The September 2008 permit application provided information on the plant modifications that were underway, including installation of a new sewage line from the high school to the lagoon and addition of chlorination/dechlorination for disinfection. In addition, two new aerators were added to the Cell #1 for a total of 6 aerators. Construction was scheduled to be completed in the spring of 2010. Ahtna Engineering Services, the contractor hired by the BIA to prepare its permit application, visited the facility on July 18, 2008, and noted that there was no flow at the discharge outfall No. 001 nor in the receiving water several hundred yards downstream. Although not noted in the permit application, this visit took place during the summer and the dry condition corresponded with the zero discharge when school was not in session. The contractor found that Cells # 1 and #2 were full while Cell #3 was half full. The contractor further noted

that vegetation around the lagoons appeared thick and was in need of trimming before the start of school to improve airflow. Vegetation appeared lush and healthy, and evidence of local wildlife, aquatic and terrestrial was observed.

Although BIA is a federal facility and not a publicly-owned treatment works (“POTW”), U.S. EPA will be proposing federal discharge limits as those that are applicable to POTWs. Any sampling and monitoring under the proposed permit shall be performed at Outfall No. 001.

III. Basis of Proposed Permit Requirements

A. Applicable Technology-Based Effluent Limitations

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. 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 BOD₅ and TSS. The requirements contained in the draft permit are necessary to prevent violations of applicable treatment standards.

B. 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. The approved 1999 Navajo Nation water quality standards and 2007 revisions will be used on a best professional judgment (“BPJ”) basis for purposes of developing water quality based effluent limitations. The requirements contained in the proposed permit are necessary to prevent violations of applicable water quality standards.

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

A. Federal Secondary Treatment Effluent Discharge Limitations

The proposed permit contains discharge limitations for biochemical oxygen demand (BOD₅), total suspended solids (TSS) and priority toxic pollutants. For both BOD₅ and TSS, the arithmetic means of values, by weight, for effluent samples collected in a period of 30 consecutive calendar days cannot exceed 35 percent of the arithmetic mean of values, by weight, for influent samples collected at approximately the same times during the same period.

Discharge Limitations					
Discharge Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Monitoring Frequency
Flow ¹	GPD	-- ²	n/a	-- ²	Once/month
BOD ₅ ³	mg/l	45	65	n/a	Once/month
	kg/day	17	24	n/a	
TSS ⁴	mg/l	90	135	n/a	Once/month
	kg/day	33.8	50.7	n/a	
Priority Pollutants ⁵	µg/l	-- ²	n/a	-- ²	Once/1 st Quarter during Year 5

NOTES:

1. No flow limit is proposed but the monthly and daily maximum flows must be monitored and reported. The monitoring frequency is once/month.
2. Monitoring and reporting required. No limitation is set at this time.
3. Under 40 CFR Section 133.105, the discharge limits for BOD₅ shall not exceed a monthly average of 45 mg/l and a weekly average of 65 mg/l. The mass limits are calculated based upon the 0.10 MGD design flow.
4. Under 40 CFR Section, 122.45(f), the discharge limits for TSS shall not exceed a monthly average of 90 mg/l and a weekly average of 135 mg/l. These limitations (Alternative State Requirements) are consistent with 40 CFR 133.101(f), 133.103(c), 133.105(b) and (d). The mass limits are calculated based upon the 0.10 MGD design flow.
5. 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. Should the results of the first test 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”)

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
2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants - Reasonable Potential analysis

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

The 2007 NNSWQS established water quality criteria for the following beneficial uses in Puerco River (within Navajo Nation boundary, a tributary to the Lower Colorado River): domestic water supply, secondary human contact, fish consumption, aquatic and wildlife habitat, and livestock watering (Table 205.1, page 22).

2. **Dilution in the receiving water**

Discharge from Outfall 001 is to an ephemeral unnamed wash of the ephemeral Puerco 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. Chlorine may also be of concern due to treatment plant operations.

4. **History of compliance problems and toxic impacts**

The DMR data showed some reporting deficiencies of BOD₅ and TSS in 2007-2008, and sporadic elevated concentrations of BOD₅ in March and September of 2009. TRC were reported as below detection levels.

5. **Existing data on toxic pollutants**

No existing data is available on toxic pollutants.

C. Rationale for WQBELs

Discharge Limitations					
Discharge Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Monitoring Frequency
Total Residual Chlorine ¹	µg/l	--	--	11	Once/month
<i>E. Coli</i> ²	CFU/100 ml	126	--	235	Once/month
Total Ammonia ³ (as N)	mg/l	-- ³	--	-- ³	Once/month
TDS ⁴	mg/l	--	--	--	Once/quarter
pH ⁵	std unit	between 6.5 to 9.0			Once/month
Temperature ⁶	deg F	--	--	--	Once/month

NOTES:

1. For protection of aquatic & wildlife habitat and livestock watering (page 32 of 2007 NNSWQS).
2. For protection of domestic water supply (page 14 of 2007 NNSWQS). The previous permit utilized fecal coliform bacteria (FCB) values but the amended NNSWQS replaced FCB with *E. coli*.
3. Consistent with the 2007 NNSWQS for acute and chronic ammonia limits for protection of aquatic and wildlife habitat. The ammonia limits are temperature and pH dependent (pages 36-37, Table 206.1 and Table 206.3).
4. No limit is proposed but the regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary.
5. For protection of secondary human contact and protection of aquatic & wildlife habitat and livestock watering (page 14 of 2007 NNSWQS). To be performed concurrently with ammonia monitoring.
6. To be performed concurrently with ammonia monitoring.

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 "C" 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 U.S. 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 U.S. EPA-approved new Tribal water quality standards.

VIII. Biosolids Requirements

The permittee shall submit a report 60 days prior to disposal of biosolids. The report shall discuss the quantity of biosolids produced, the treatment applied to biosolids including process parameters, disposal methods, and, if land applied, analyses for Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Zinc, and Selenium, and organic-N, ammonium-N, and nitrate-N, all expressed in mg/kg biosolids on a 100% dry weight basis. The permittee shall comply with all standards for biosolids use and disposal at Section 405(d) of the CWA, and 40 CFR Parts 257, 258 and 503.

IX. Threatened and Endangered Species and Critical Habitat

A. 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 federally-listed species is appropriate. The proposed NPDES permit authorizes the discharge of treated domestic wastewater into to an unnamed wash of the Puerco River, a tributary to the Lower Colorado River, a water of the United States.

The information below is listed in the Navajo Nation's Department of Fish & Wildlife Natural Heritage Program (NHP) database. The FWS has deferred all of its survey and information collection in the Navajo Nation to the Navajo Nation NHP.

Based on information provided by the Navajo Nation NHP on August 10, 2009, NHP identified the following federally-listed threatened or endangered species: Black-footed ferret (*Mustela nigripes*) known to occur within one to 3 mile of the facility boundary; and, Zuni fleabane (*Erigeron rhizomatus*) known to potentially be within proximity to the facility.

B. 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 that 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 will be 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 Director 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 9
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 Director 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.