

October 2004
FACT SHEET
NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) -Window Rock
NPDES Permit No. AZ0021555

I. Introduction

The Navajo Tribal Utility Authority ("NTUA") was issued an NPDES Permit (AZ0021555) on September 30, 1999, for the Window Rock NTUA wastewater treatment lagoon facility. The permit became effective November 2, 1999 and expired at midnight of November 1, 2004. NTUA reapplied to U.S. Region 9 for reissuance on August 5, 2004.

Applicant address: Navajo Tribal Utility Authority
P.O. Box 170
Fort Defiance, AZ 86504

Facility contact: Harry L. Begaye
(928) 729-5721

II. Background

The NTUA-Window Rock wastewater treatment lagoon facility is located in Window Rock, Apache County, Arizona, within the Central portion of the Navajo Nation. The facility serves a population of about 10,500, receiving only domestic sewage with a design flow capacity of 1.32 million gallons per day (MGD) and a three-year maximum daily flow of 0.87 MGD. The treatment plant includes an aerated lagoon cell using fine bubble diffused aeration and flow controlling curtain baffles, on stabilization, and an optional storage pond. Pretreatment of wastewater at this facility consists of a barscreen with a two-inch opening and a grit chamber. The lagoon system is equipped with ultrasonic meters to measure the influent and the effluent. Effluent is chlorinated prior to discharge from an 8-inch pipe to Discharge Outfall No. 001, to Black Creek (ephemeral), a tributary to Puerco River (ephemeral), an eventual tributary to the Little Colorado River. Any sampling and monitoring under the proposed permit shall be performed at Outfall No. 001 prior to discharge.

EPA has determined that there are no endangered species of concern in the discharge area so no requirements specific to the protection of endangered species are in the proposed permit.

III. Navajo Nation Surface Water Quality Standards

Pursuant to the Water Quality Act of 1987 and the "EPA Policy for the Administration of Environmental Programs on Indian Reservations" (November 8, 1987), EPA will work directly with Indian Tribal governments on a one-to-one basis. This conforms with the

Federal Indian Policy of January 24, 1983. The Navajo Nation has received Treatment as a State ("TAS") for Section 106 of the Clean Water Act ("CWA".) They have applied but have not received TAS for the purposes of Section 303 of the CWA. Section 106 grant money was used to develop water quality standards and use designations, which must be approved under Section 303 by EPA Region 9. The Navajo Nation completed and adopted the Navajo Nation Surface Water Quality Standards ("NNSWQS") on September 7, 1999 and promulgated in November 1999. The NNSWQS, along with a TAS application under Section 303, was submitted to EPA in November 1999. A draft revision to the NNSWQS made on April 17, 2003 is awaiting review and approval by the Navajo Nation Council. In the interim until the NNSWQS are approved by EPA, those water quality standards will be used on a best professional judgment basis for purposes of developing water quality based effluent limitations.

IV. Basis of Proposed Permit Requirements

The proposed discharge limitations are based on:

A. Secondary Treatment Regulations contained in 40 CFR Part 133, Sections 133.101 through 133.105, promulgated September 20, 1984, and most recently amended on January 27, 1989. EPA used these regulations and its best professional judgment (BPJ) to develop limits for this facility.

B. Navajo Nation Water Quality Standards, September 7, 1999.

V. Designated Uses of the Receiving Water

The designated uses of the receiving water (Black Creek of the Little Colorado River) as defined by the NNSWQS are primary and secondary human contact, ephemeral warm water habitat, and livestock and wildlife watering (Table 204.1, page 19.)

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

A. Flow Rates

Under the proposed permit, there is no flow limit but the monthly and daily maximum flows must be monitored and reported. The monitoring frequency is once/month. This is consistent with the previous permit.

B. Five-Day Biochemical Oxygen Demand (BOD₅)

Under the proposed permit, the discharge shall not exceed a weekly average of 45 mg/l and a 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 similarly to a POTW [40 CFR 122.45(d)].

Under 40 CFR Section 122.45(f), mass limits are required for BOD₅. Based upon the maximum daily flow of 0.87 MGD flow, the mass limits for BOD₅ are based on the following calculations:

Monthly average

$$\frac{0.87 \text{ MG}}{\text{day}} \times \frac{30 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 98 \text{ kg/day}$$

Weekly average

$$\frac{0.87 \text{ MG}}{\text{day}} \times \frac{45 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 147 \text{ kg/day}$$

These mass limits are more stringent than those from the previous permit, due to the use of lower maximum flow rate of 0.87 MGD. The monitoring frequency is once/month. Sampling and monitoring shall be performed at the final discharge prior to the chlorine contact chamber.

C. Total Suspended Solids (TSS)

As in the previous permit, the discharge shall not exceed a weekly average of 135 mg/l and monthly average of 90 mg/l TSS, and shall achieve no less than a monthly average rate of 65% removal. These limitations are consistent with 40 CFR 133.101(f), 133.103(c) and 133.102(b). Mass limit requirements in accordance with 40 CFR 122.45(f) have also been set in the proposed permit. Mass loadings are based upon the same calculations shown above for BOD₅ and shall not exceed a 7-day average of 441 kg/day and a 30-day average of 294 kg/day for TSS. These mass limits are also more stringent than those from the previous permit due to use of lower maximum flow rate. The monitoring frequency is once/month. Sampling and monitoring shall be performed prior to the chlorine contact chamber.

D. Fecal Coliform

In the proposed permit, the monthly logarithmic mean of fecal bacteria shall not exceed 100/100 ml, as a geometric average of samples collected during the calendar month, and 200/100 ml as a single sample maximum. These limits are more stringent than those in the previous permit as they are based on the NNSWQS for primary human contact (p. 24). The monitoring frequency is once/month.

E. Total Residual Chlorine (TRC)

The permit requires the discharger to meet a TRC limit of 11.0 ug/l as an instantaneous maximum if chlorination is used for disinfection of the effluent before discharge. This limit is based on Best Professional Judgment and should assure that the Navajo Nation Surface Water Quality Standards for protection of aquatic life, and wildlife and livestock (11.0 ug/l) is met in the receiving water when aquatic life is present (Table 206B.2, page 28.) The presence of aquatic life depends on natural background flows. Such background flows are only present during and after storm events in which the discharge should undergo significant dilution. Furthermore, a large portion of the residual chlorine should volatilize. Nevertheless, the permittee should attempt to achieve the lowest possible residual chlorine level while still achieving the limits for fecal coliform. The monitoring frequency is once/month for the effluent and once/month in the receiving water.

F. Total Dissolved Solids (TDS)

The proposed permit requires monitoring and reporting of both the influent and effluent TDS, as in the previous permit. The monitored frequency is once/quarter. The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary.

G. Ammonia (as un-ionized NH₃)

The proposed permit establishes monitoring requirement for ammonia. The monitoring frequency is once/quarter. If analytical results for the first four quarters reveal ammonia levels are below EPA's National Water Quality Criteria for ammonia, the monitoring frequency will decrease to once/year. The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary.

H. pH

The proposed permit requires that effluent pH not fall below 6.5 or above 9.0 standard pH units, based on the Navajo Nation numeric water quality standards for primary and secondary human contact, and for aquatic, wildlife and livestock. The monitoring frequency is once/month.

I. Reporting

The proposed permit requires discharge data obtained during the previous three months to be summarized and reported monthly. If there is no discharge for the month, indicate "Zero Discharge." 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 EPA Regional Administrator and the Navajo Nation EPA.

J. 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, there is no reasonable potential 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 excursions above 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. 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 for 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 of 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 of 1973 requires Federal agencies to ensure that any action authorized, funded or carried out by a Federal agency not jeopardize the continued existence of a listed or candidate species or result in the destruction or adverse modification of its habitat. 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.

This NPDES permit authorizes the discharge of municipal waste into Black Creek wash, a tributary to Puerco River, an eventual tributary to the Little Colorado River, a water of the United States. The draft permit contains provisions for monitoring conventional, toxic chemicals, and nonconventional pollutants in compliance with the Navajo Nation Surface Water Quality Standards, to ensure an appropriate level of quality of water discharged by the facility. Re-opener clauses have been included should new information become available to indicate that the requirements of the permit need to be changed.

Based on review of Endangered Species of the Navajo Nation, March 2001 information available online, EPA has determined that there are no endangered species known to occur in the vicinity of the outfall.

B. EPA's Finding of "No Effect":

This permit authorizes the discharge of treated wastewater in conformance with the Navajo Nation Surface Water Quality Standards. These standards are applied in the permit both as numeric and narrative limits. Therefore, since the standards themselves are designed to protect aquatic species, including threatened and endangered species, any discharge in compliance with these standards should not adversely impact any threatened and endangered species. Furthermore, the water course into which the effluent is discharged is an ephemeral river bed, which without the discharge of effluent would be dry. For the majority of the year, the discharge never reaches a perennial stream capable of supporting aquatic habitat.

Considering these facts and all other information available during the drafting of this permit, EPA believes that a **No Effect** determination is appropriate for this federal action. A copy of the draft fact sheet and permit are being forwarded to the U.S. Fish and Wildlife Services for concurrence.

X. Written Comments

Persons who wish to comment upon, object to the proposed action, or request a public hearing pursuant to 40 CFR Section 124.11 should submit their comments and requests in writing within thirty (30) days from the date of the Public Notice, either in person or by mail to:

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

XI. Information and Copying

The Administrative Record, which contains the draft NPDES permit, the fact sheet, comments received, and other relevant documents, is available for review and may be obtained by calling or writing to the above address.

All comments or objections received within thirty (30) days from the date of the Public Notice, will be retained and considered in the formulation of the final determination regarding the permit issuance.

XII. Public Hearing

When public interest warrants, the Regional Administrator shall hold a public hearing and such notice of hearing shall be issued by public notice at least thirty (30) days prior to the hearing date. A request for a public hearing must be in writing and must also state the nature of the issue proposed to be raised in the hearing.