January 2011
FACT SHEET
Authorization to Discharge under the National Pollutant Discharge Elimination System for the Navajo Tribal Utility Authority – Window Rock Wastewater Treatment Lagoons NPDES Permit No. NN0021555*

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I. Summary

The NTUA was issued a National Pollutant Discharge Elimination System ("NPDES") Permit (No. NN0021555) on December 22, 2004, for its Window Rock 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 became effective January 24, 2005, through midnight, January 23, 2010. On March 21, 2005, Permit Condition A of the permit was modified to replace the effluent discharge limits of fecal coliform bacteria with those of *E. coli* to reflect the newly-promulgated Navajo Nation surface water quality standards. NTUA applied to U.S. EPA Region 9 for reissuance on September 2, 2009. All the terms and conditions of the 2004 permit are in effect until the reissuance of a new permit. Pursuant to 40 CFR 122.21(d) and (e), EPA sent an acknowledgment letter to NTUA, dated February 24, 2010, for the submittal of a timely and complete NPDES permit renewal application. 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 NTUA (permittee) for the discharge of treated domestic wastewater to receiving waters named Black Creek, a tributary to Puerco Rico, an eventual tributary to the Little Colorado River, all waters of the United States.

** The National Pollutant Discharge Elimination System ("NPDES") permit number for this facility had been changed from AZ0021555 to NN0021555 in December 2005. The 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. Description of Facility

The NTUA Window Rock wastewater treatment lagoon facility is located approximately 1.5 miles southwest of the Navajo Fairgrounds in Window Rock, Apache County, Arizona, within the Central portion of the Navajo Nation. The facility serves a population of about 13,300, receiving only domestic sewage with a design flow capacity of 1.32 million gallons per day (MGD). Based on NTUA's 2009 permit application, the maximum daily flow rates in 2007, 2008 and 2009 were 0.47 MGD, 0.48 MGD and 0.54 MGD, respectively, yielding a 3-year maximum daily flow of 0.50 MGD. The 2005 permit limit calculations were based on higher historical 3-year maximum daily flow of 0.87 MGD. For consistency purposes, EPA is applying the 0.87 MGD maximum flow for this permit cycle.

The lagoon system provides secondary treatment and consists of an influent intake chamber with a barscreen, a grit chamber which directs flow to an aerated pond in the primary cell, followed by a facultative pond operating in series, and a chlorine contact chamber. The facultative cells are used for natural die-off of fecal coliform bacteria. 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.

The facility is under an Administrative Order on Consent with USEPA to achieve compliance with the NPDES permit. The Order focuses on achieving compliance with residual chlorine, E. coli, BOD5, and TSS. Although the Order required final compliance by December 31, 2007, NTUA and USEPA continue to work towards achieving compliance. The facility had a prior CEI on October 1, 2008.

On June 18, 2009, the U.S. EPA and Navajo Nation EPA's ("NNEPA") conducted a joint compliance evaluation inspection (CEI) and observed that improvements were made as a result of past enforcement actions and the plant was in good operating condition. The NNEPA inspector noted that there was a 20-minute contact time in the chlorine contact chamber, and that SO_2 was used for dechlorination but that contact time was unknown due to lack of a mixing structure between dechlorination and the discharge outfall. The effluent appeared clear at the sampling point and there was no upstream flow in Black Creek.

For some time, the WWTP used only one of the pond's two inlet pipes, but in April 2009 the operators began using both inlet pipes. The pond is aerated by 12 aspirators and has a baffle to direct flow through the pond. The pond used to have two baffles that created a serpentine flow, but strong winds broke one of the baffles. The operators removed the broken baffle, which, according to plant's representative, appeared to be about seven feet high, shorter than the wastewater depth. Wastewater near the inlet pipes appeared brown and towards the end of the pond appeared dark green.

EPA and NNEPA observed that several improvements were made, which include hiring of a new operator to improve plant operations and maintenance, and installation of new bar screens and new flow meters. The June 2009 inspection report noted remaining outstanding deficiencies that need to be addressed.

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 BOD_5 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 (BOD_5), total suspended solids (TSS) and priority toxic pollutants. The BOD_5 and TSS limits are identical to those of the previous permit. For BOD_5, the arithmetic means of values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of values, by weight, for influent samples collected at approximately the same times during the same period. For 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]	Instantaneous
BOD_5[3]	mg/l	30	45	--	Monthly
	kg/day	98	147	--	
TSS[4]	mg/l	90	135	--	Monthly
	kg/day	294	441	--	
Priority Pollutants[5]	µg/l	n/a	n/a	--[2]	Once/1st Quarter during Year 5

NOTES:

1. No flow limit is set at this time but influent and effluent 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. The discharge limits for BOD_5 shall not exceed a monthly average of 30 mg/l and a weekly average of 45 mg/l. The mass limits are calculated based upon the 0.87 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 0.87 MGD design flow.

5. Priority Pollutants: During Year 5 of the permit, the permittee shall monitor for the full list of priority pollutants in the Code of Federal Register (CFR) at 40 CFR Part 423, Appendix A. No limit is set at this time. Should the results reveal levels below the Navajo Nation Surface Water Quality Standards and EPA's National Water Quality Criteria for priority pollutants, monitoring will no longer be required for the remainder of the permit cycle.

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 (Black Creek, Puerco Rico, the Little Colorado River) are defined by the NNSWQS as primary and secondary human contact, fish consumption, aquatic & wildlife habitat, and livestock watering (Table 205.1, page 22).

2. Dilution in the receiving water

Discharge from Outfall 001 is to Black Creek, 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

Review of the discharge monitoring reports (DMR) from January 2008 to June 2010 showed exceedances of BOD_5 and TSS concentration limits, BOD_5 percent removal and TSS percent removal efficiencies, and *E.coli*. In addition, reporting errors of total residual chlorine were found on several occasions in 2008 and 2009.

2008

- Exceedences of BOD_5 percent removal in Jan 2008, Mar 2008, May 2008, June 2008, Oct 2008, and Nov 2008;
- Exceedences of BOD_5 concentration limit in May 2008 and June 2008;
- NODI by QC Failure in Lab for BOD_5 was noted for Mar 2008;
- Exceedences of TSS percent removal in Apr 2008;
- Exceedences of *E. Coli* for Feb 2008 and Jun 2008; and
- TRC reporting error occurred from Jan 2008 to Dec 2008.

2009

- Exceedences of BOD_5 percent removal in Jan 2009 to Aug 2009, Nov 2009 and Dec 2009;
- Exceedences of BOD_5 concentration limit in Jan 2009 to Sept 2009, Nov 2009 and Dec 2009;
- Exceedences of *E. Coli* for Jan 2009, Feb 2009, July 2009, Nov 2009 and Dec 2009;
- Exceedences of TSS percent removal in Apr 2009, June 2009 and Sept 2009;
- Exceedences of TSS concentration limit in Apr 2009 and June 2009;
- TRC reporting error occurred from Jan 2009 to Mar 2009; and
- NODI for Ammonia and TDS reported for Dec 2009.

2010

- Exceedences of BOD_5 percent removal in Jan 2010 to Apr 2010;
- Exceedences of *E. Coli* for Feb 2010 and Apr 2010;
- NODI by QC Failure in Lab for BOD5 noted for Jan 2010 and Mar 2010; and
- No effluent discharge in May 2010 and June 2010.

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	µg/l	--	--	11	Once/month
E. Coli	CFU/100 ml	126	--	235	Once/month
Total Ammonia (as N)	mg/l	--	--	--	Once/month
TDS	mg/l	--	--	--	Once/quarter
pH	std unit	between 6.5 to 9.0			Once/month
Temperature	deg F	--	--	--	Once/month
Whole Effluent Toxicity Testing	--	--	--	--	Once/month

Total Residual Chlorine. Due to the absence especially of protracted downstream monitoring despite its inclusion in the previous permit requirements, the proposed permit retains the requirement to monitor chlorine concentrations at the discharge and downstream of the discharge on a monthly basis for protection of aquatic & wildlife habitat and livestock watering (page 32 of 2007 NNSWQS).

E. Coli. The previous permit utilized fecal coliform bacteria (FCB) values but the amended NNSWQS replaced FCB with *E. coli.* The limits reflect the more stringent standards for protection of primary human contact (page 14 of 2007 NNSWQS).

Total Ammonia. In accordance with the 2007 NNSWQS for acute and chronic ammonia limits 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.

Total Dissolved Solids. No limit is proposed but the regulations at 40 CFR 122.44(i) set forth requirements for monitoring as determined to be necessary. This requirement is consistent with the previous permit.

pH. To ensure adherence to the minimum and maximum pH levels designated by the Navajo Nation for the receiving water, monthly pH monitoring is required in the permit for protection of primary and secondary human contact, and aquatic & wildlife habitat and livestock watering (page 14 of 2007 NNSWQS). In order to support the Navajo Nation's established Ammonia standards, which vary with the pH of the effluent, pH monitoring is to be performed concurrently with ammonia monitoring.

Temperature. Also to support the Navajo Nation's established Ammonia standards and their dependence on temperature, monthly temperature monitoring is to be performed concurrently with ammonia monitoring.

Whole Effluent Toxicity (WET). It is U.S. EPA Region 9's policy that all continuous dischargers be required to perform WET testing. WET testing is intended to demonstrate that there are no unexpected toxic components of the discharge escaping to the receiving water undetected, and to prompt a response if they are present. The proposed permit therefore requires chronic toxicity testing to be conducted monthly using a 24-hour composite sample of the treated effluent for fathead minnow *(Pimephales promela),* daphnid *(Ceriodaphnia dubia)* and an alga species *(Selenastrum capricornutum).* This is a new requirement for this permit. If no toxicity is found in the test results during the first 12 monthly test results, the testing frequency is reduced to a quarterly basis thereafter.

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 Reopeners

A. At this time, there is no reasonable potential to establish any other water quality-based limits. Should any monitoring indicate that the discharge cause, has the reasonable potential to cause, or contributes to excursion above a water quality criterion, 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 40 CFR 122 and 124, to include appropriate conditions or effluent limits, monitoring, or other conditions to implement new regulations, including U.S. EPA-approved new Tribal water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedences of water quality standards.

B. In accordance with 40 CFR 122.44(c), EPA may promptly modify or revoke and reissue any permit issued to a treatment works treating domestic sewage (including "sludge only facilities") to incorporate any applicable standard for sewage sludge use or disposal promulgated under section 405(d) of the CWA, if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or controls a pollutant or practice not limited in the permit.

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.

X. 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 to Black Creek, a tributary to Puerco Rico, an eventual tributary to the Little 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 July 6, 2010, NHP identified no federally-listed threatened or endangered species in the 7.5 quadrangle of Window Rock, AZ containing the project boundary.

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.

XI. 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.