

**October 2011
FACT SHEET
Authorization to Discharge under the
National Pollutant Discharge Elimination System for the
Navajo Tribal Utility Authority (NTUA) Cane Valley Wellhead Facility
NPDES Permit No. NN0030342**

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I. Summary

The Navajo Tribal Utility Authority (“NTUA” or “permittee”) has applied for a National Pollutant Discharge Elimination System (“NPDES”) to allow the discharge of treated backwash water from an adsorption media treatment project at its Cane Valley Wellhead treatment facility into Cane Valley Wash. The Cane Valley well provides water to the Cane Valley area homes from a groundwater source and is located near Dennehotso, Apache County, Arizona. The project involves the removal of arsenic by media adsorption from groundwater. A permit application was submitted to EPA in August 2011.

EPA Region IX has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act (“CWA”), which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit. This is a new permit. The permittee has been classified as a minor discharger.

II. Description of Discharge

NTUA Cane Valley Well 00-091 is located approximately 4 miles north of Dennehotso, Apache County, Arizona within the northern portion of the Navajo Nation. The Cane Valley Well (identified as 00-091) is part of the NTUA Cane Valley water system which supplies water to about 30 residences in Cane Valley with a well production currently estimated to be 35 gallons per minute. An adsorption media treatment (granular ferric oxide) is required for removing arsenic from ground water. The treatment unit will consist of a modular system with two 21-inch composite vertical adsorption vessels which can be operated intermittently but most of the time will operated parallel to achieve optimal removal. The media filter will remove arsenic by adsorption which will not be a regenerated media. Backwashing is required to prevent compaction of the media. The volume of backwash water will be approximately 660 gallons

which will be achieved by flowing 22 gallons per minute for 30 minutes. Backwashing will be conducted every 45 to 60 days.

Ground water from Cane Valley Well 00-091 will be disinfected with chlorine prior to encountering the adsorption media treatment. From the adsorption media treatment, chlorinated ground water is sent to the NTUA Cane Valley water system for potable use. When backwashing occurs, chlorinated ground water will be released from the adsorption media treatment through a flush valve (Outfall No. 001) designated specifically for backwashing. Discharge from Outfall 001 will enter Cane Valley Wash, a tributary to Gypsum Creek, an eventual tributary to the San Juan River. Any sampling and monitoring under the proposed permit shall be performed at the flush valve (Outfall No. 001.)

III. Basis of Proposed Permit Requirements

EPA develops effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., “technology-based effluent limits”) and the water quality standards applicable to the receiving water (e.g., “water quality-based effluent limits”).

A. Applicable Technology-Based Effluent Limitations

EPA has established national standards based on the performance of treatment and control technologies for wastewater discharges to surface waters for certain industrial categories. Effluent limitations guidelines represent the greatest pollutant reductions that are economically achievable for an industry, and are based on Best Practicable Control Technology (BPT), Best Conventional Pollutant Control Technology (BCT), and Best Available Technology Economically Achievable (BAT). These BPT, BCT and BAT effluent guidelines are found in CWA Sections 304(b)(1), 304(b)(4), and 304(b)(2) respectively.

At the time of drafting of this permit, no effluent limit guidelines applicable to the discharge of backwash water from adsorption media treatment have been developed.

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. A *draft* 2010 NNSWQS revision is currently under review by NNEPA and USEPA. The approved 1999 Navajo Nation water quality standards, 2007 revision and *draft* 2010 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 Permit Requirements

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data is insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established.

A. 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 designated uses of the receiving water (Cane Valley Wash, a tributary to Gypsum Creek, San Juan River) as defined by the *draft* 2010 NNSWQS revisions are secondary human contact, fish consumption, aquatic and wildlife habitat, and livestock watering (Table 205.1, page 24.)

2. Dilution in the receiving water

Discharge from Outfall 001 is to the Cane Valley Wash, 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 treated domestic water supply include arsenic, temperature, pH, suspended solids, and chlorine if chlorination is used.

4. Existing data on toxic pollutants

No existing data is available on toxic pollutants.

B. Rationale for Effluent Limits

1. Flow:

There is no flow limit but maximum flows must be monitored and reported during backwash events. Based on the total number of periodic backwash events, the discharge flow is approximately 22 gallons per minute to an estimated total of 660 gallons per backwash event, or 4,000 gallons a year.

2. Arsenic:

The regulations at 40 CFR 122.44(i) set forth requirements for monitoring as determined to be necessary. The adsorption media filter removes arsenic from groundwater. While it is not expected for arsenic to become detached from the media filter surface during backwashing, the backwash water discharge may still contain accumulated levels of concern. Therefore, the draft permit proposes a requirement to monitor for arsenic. No limit is proposed at this time as the low volume of discharge is considered *de minimis*.

3. Selenium

The regulations at 40 CFR 122.44(i) set forth requirements for monitoring as determined to be necessary. Since the sampling data for selenium in ground water appears elevated compared to the 2007 NNSWQS and the *draft* 2010 NNSWQS for protection of aquatic & wildlife habitat. (pp. 34), the draft permit proposes a requirement to monitor for selenium. No limit is proposed at this time as the low volume of discharge is considered *de minimis*.

4. Total Residual Chlorine:

Chlorinated ground water is used for backwashing. The draft permit proposes a requirement to monitor TRC to assess whether it is present at levels of concern in the discharge. No limit is proposed at this time as the low volume of discharge is considered *de minimis*.

5. Total Suspended Solids (TSS):

The regulations at 40 CFR 122.44(i) set forth requirements for monitoring as determined to be necessary. Since the backwash may contain accumulated solids, the draft permit proposes a requirement to monitor for TSS. No limit is proposed at this time as the low volume of discharge is considered *de minimis*.

6. pH:

To ensure adherence to the minimum and maximum pH levels designated by the Navajo Nation for the receiving water, pH shall at all time be in the range of 6.5 and 9.0 standard units. These limits are based on the NNSWQS for protection of secondary human contact and aquatic & wildlife habitat, and livestock watering. (pp. 14-15)

7. Turbidity:

The regulations at 40 CFR 122.44(i) set forth requirements for monitoring as determined to be necessary. Since the backwash may contain accumulated solids and turbidity is directly related to TSS, the draft permit proposes a requirement to monitor for turbidity. No limit is proposed at this time as the low volume of discharge is considered *de minimis*.

C. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the proposed permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit. All monitoring data shall be reported on monthly DMR forms and submitted quarterly as specified in the proposed permit.

V. Antidegradation Policy

EPA's antidegradation policy at 40 CFR 131.12 and the Navajo Nation SWQS require that existing water uses and the level of water quality necessary to protect the existing uses be maintained. As described in Paragraph IV above, the permit establishes effluent limits and/or 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 pipe without consideration of dilution in the receiving water.

Due to the low levels of toxic pollutants present in the discharge, 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. In addition, the discharge from the permittee may be considered *de minimis* in its potential degradation due to the low volume of discharge (660 gallons per discharge event) into receiving waters.

VI. 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.

VII. 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.

VIII. 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 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 exceedances of water quality standards.

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 into Cane Valley Wash, a tributary to Gypsum Creek, an eventual tributary to the San Juan 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.

EPA received new species information sent by facsimile on October 4, 2011. NHP identified federally-listed species as follows.

Federally-listed threatened species known to occur within three miles of the project site:

- Southwestern Willow Flycatcher (*Empidonax traillii extimus*), ESA endangered

Federally-listed species known to occur on Garnet Ridge, Arizona, 7.5 minute quadrangle containing the project boundaries:

- Black-footed Ferret (*Mustela nigripe*), ESA endangered
- Mexican Spotted Owl (*Strix occidentalis lucida*), ESA endangered
- Welsh's Milkweed (*Asclepias welshii*), ESA threatened
- Navajo Sedge (*Carex specuicola*), ESA threatened
- Yellow-billed Cuckoo (*Coccyzus americanus*), ESA candidate

B. EPA's Finding:

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. 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. EPA further believes that the low volume and intermittent nature of the facility discharge do not provide a continued and long-term sustenance of habitat for the above identified land-based species. 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. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA is making a determination that issuing this proposed NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

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.