

US EPA ARCHIVE DOCUMENT

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**FACT SHEET**  
**Authorization to Discharge under the**  
**National Pollutant Discharge Elimination System**  
**for the**  
**Navajo Engineering and Construction Authority – Navajo Nation Municipal Pipeline**  
**Project**  
**NPDES Permit No. NN0030345**

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## **I. Summary**

On December 13, 2013, NECA submitted an application for an National Pollutant Discharge Elimination System (“NPDES”) permit for the proposed discharge of flushing and hydrostatic test water from the Navajo Nation Municipal Pipeline Project (“Navajo NNMP project”), 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. 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 (No. NN0030345) to NECA (“permittee”) for the proposed project discharge to receiving waters named Hogback Irrigation Canal, a tributary to the San Juan River.

## **II. Description of Facility**

The Bureau of Reclamation (“BOR”) is in charge of designing the Navajo NNMP project Schedule 1 -- Fruitland Reach and Schedules 2 through 6 -- Nenahnezad to Shiprock Reaches. The NNMP project involves the construction and installation of twenty-nine (29) miles of 24-inch diameter polyvinylchloride pipeline, pumping stations, and ancillary facilities beginning

from Farmington to Shiprock, New Mexico, in order to deliver potable water to the Navajo Nation. In addition to constructing and installing the entire pipeline project, NECA was hired by BOR to perform flushing and hydrostatic testing/chlorination of new facilities and parts in the NNMP project, prior to placing them into service.

As part of the flushing, hydrostatic testing and disinfection of the entire pipeline, NECA will be filling the pipeline with potable water provided by the City of Farmington and the Navajo Tribal Utility Authority's storage tank. After filling the pipeline, the water will be flushed with approximately 3.5 million gallons of potable water until the water from the pipe is clear and discharged to near the head gate of the Hogback Irrigation Canal (herein designated as Outfall No. 001). Next, hydrostatic testing will be performed on the pipeline in sections which will be followed by disinfection that will utilize approximately 3.8 million gallons of potable water. The discharge point for hydrostatic testing/disinfection is at the Yellowman Lateral of the Hogback Irrigation Canal (herein designated as Outfall No. 002).

Both discharge outfalls 001 and 002 are located within the Navajo Nation, as summarized in Table 1 below.

Outfall	Activity	Flow Rate (GPM)	Total Volume (Gallons)	Receiving Water(s)
001	Flush	3,525	3.5 million	Hogback Irrigation Canal (tributary to San Juan River)
002	Hydrostatic Test/Disinfection	500	3.8 million	Hogback Irrigation Canal (tributary to San Juan River)

The Hogback Irrigation Canal intake is on the San Juan River in Hogback, New Mexico. The canal is approximately 17 miles long and ultimately spills into the San Juan River northwest of Shiprock, New Mexico. Temporary earth plugs will be constructed at two locations within the canal creating a pond capable of capturing all water necessary to test and disinfect the pipeline. At both discharge points, cable concrete mats will be placed on the side slopes and the bottom width of the irrigation canal to prevent erosion. At the completion of the disinfection and testing of the pipeline, the temporary earth plugs will be removed and the irrigation canal will be restored to its original configuration. NECA received approval to utilize the Hogback Irrigation Canal from the Navajo Nation Irrigation Office in Shiprock, New Mexico. The irrigation canal is not utilized from November until the start of April in any calendar year.

Any sampling and monitoring under the proposed permit will be performed at both Outfalls 001 and 002 prior to entry into the receiving waters.

### III. Basis of Proposed Permit Requirements

Section 301(a) of the Clean Water Act ("Act") 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 Clean Water Act 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. The requirements contained in the proposed permit are necessary to prevent violations of applicable water quality standards.

**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. Two general approaches exist for developing such limits: EPA-promulgated national effluent limitations guidelines ("ELGs"), and BPJ applied on a case-by-case basis. EPA has promulgated ELGs for more than 50 industrial categories. This list does not include potable water supply system discharges from hydrostatic testing of pipelines and disinfection of newly constructed pipelines. In such circumstances where ELGs have not been developed, U.S. EPA relies on BPJ pursuant to Section 402(a)(1) of the CWA, to establish technology-based effluent limits on a case-by-case basis.

Using this approach, and using information of the contaminants present in the intake water (potable water discharges), EPA proposes the following provisions and effluent limitations for flow, oil and grease, total suspended solids (TSS), total residual chlorine (TRC), pH and turbidity. Where technology-based effluent limitations are not sufficiently stringent to meet water quality standards and/or do not exist, CWA regulations allow EPA to develop water quality-based effluent limitations.

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

The proposed permit contains discharge limitations for flow, oil and grease, TSS, TRC, pH and turbidity. 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 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 authorized volume and duration will be proposed for each discharge outfall. The total volume of flushing water discharge shall not exceed 3.5 million gallons at Outfall No. 001, with the flow rate not exceeding 3,525 gallons per minutes (gpm). The total combined volume of hydrostatic testing and disinfection discharges shall not exceed 3.8 million gallons at Outfall No. 002, with the discharge flow rate not exceeding 500 gpm. In addition, the duration of each discharge shall not exceed 14 days.

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 (Hogback Irrigation Canal--non-perennial tributary to the San Juan River) are defined by the NNSWQS as secondary human contact, fish consumption, aquatic & wildlife habitat, and livestock watering (Table 205.1).

2. Dilution in the receiving water

Discharge from Outfall Nos. 001 and 002 is to the Hogback Irrigation Canal, which will have no flow during November to April each 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 pipeline flushing, hydrostatic testing and disinfection include pH, solids, TRC, and oil and grease.

4. History of compliance problems and toxic impacts

Not applicable.

5. Existing data on toxic pollutants

No existing data is available on toxic pollutants.

**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.

**Oil and Grease (O&G):** New pipes used for drinking water are often coated with oils and other O&G components. Therefore, during the flushing and hydrostatic testing, there is reasonable potential for O&G levels in the effluent to cause or contribute to an excursion above the WQS. The NNWQS has the narrative requirement that “All surface waters 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 (See Section 202.A.5. of the 2007 NNSWQS and 2010 *draft* revisions). Therefore, on the basis of BPJ, the proposed permit establishes a daily maximum limit of 10 mg/l and a daily average of 5 mg/l, which are commonly used as a numeric translation for the narrative O&G requirements in other permits in the Navajo Nation.

**Total Suspended Solids (TSS):** Dirt and solids may find their way inside the pipelines during their installation underground. Therefore, during the flushing and hydrostatic testing of the pipeline as well as pipeline disinfection, there is reasonable potential for suspended solids levels in the effluent to cause or contribute to an excursion above the WQS. The NNWQS establish a Suspended Solids standards of 80mg/L and 25 mg/L to protect the beneficial use of Aquatic Wildlife Habitat (warm) and Aquatic Wildlife Habitat (cold) expressed as a median



value determined from a minimum of four samples collected at least seven days apart (Section 206 of 2007 NNSWQS and 2010 *draft* revisions). This proposed permit however limits the total discharge time to 14 days or less, which is not long enough to allow for adequate sample collection for WQS purposes. Therefore, on the basis of BPJ, a daily maximum limit of 30 mg/l and a daily average limit of 10 mg/l have been established which are commonly used as numeric limits in POTW permits in the Navajo Nation to meet surface water quality standards, as well as for protection of the beneficial uses of the receiving waters.

**Total Residual Chlorine (TRC):** The use of potable water for flushing and hydrostatic testing as well as for pipeline disinfection purposes indicates that there is reasonable potential for TRC levels in the effluent to cause or contribute to an excursion above the WQS. Therefore, a TRC limit of 11 µg/l has been established in the proposed permit to protect the beneficial uses of the receiving waters (See particularly aquatic & wildlife habitat and livestock watering Table 206.1 and Section 206 of 2007 NNSWQS and 2010 *draft* revisions).

**pH:** The use of potable water for flushing and hydrostatic testing could be contaminated with any substance found in the newly constructed pipelines. 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 (Section 206.C. of 2007 NNSWQS and 2010 *draft* revisions).

**Turbidity:** The use of potable water for flushing and hydrostatic testing indicates that there is reasonable potential for turbidity 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 daily maximum limit of 50 Nephelometric Turbidity Units (NTU) is established based on BPJ, and taking into account that the effluent is the only water likely to be present in receiving waters. 50 NTU is considered a benchmark for background turbidity level.

## V. **Reporting**

The proposed permit requires reporting of discharge data obtained during each discharge event. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the U.S. EPA Director 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, 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.

## **VIII. Other Considerations Under Federal Law**

### **A. Anti-Degradation**

USEPA's anti-degradation policy at 40 CFR Section 131.12 requires existing water uses and the level of water quality necessary to protect the existing uses to be maintained. Due to the nature of the discharge activities, the permit requires the permittee to meet the water quality standard in the receiving water. Therefore, it is not expected that the discharge will degrade water quality.

### **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 not 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 federally-listed species is appropriate. The proposed NPDES permit authorizes the discharge of pipeline flushing and hydrostatic testing into the Hogback Irrigation Canal, a 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.



On behalf of EPA Region 9, Navajo Nation EPA sent a request to the Navajo Nation NHP for listing of impacted federally-listed threatened (T) or endangered (E) species. In a letter dated November 4, 2013, the Navajo Nation NHP had identified three (3) listed species that are known to occur within three miles of the facility boundary or on the 7.5 minute quadrangle(s) of the respective facility boundary-Discharge Outfall 001(Hogback North, New Mexico) and Discharge Outfall 002 (Shiprock, New Mexico), as follows:

Names (common and scientific)	Status	Discharge Outfall(s)
Mancos Milk-vetch ( <i>Astragalus humillimus</i> )	E	001
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	E	001
Mesa Verde Cactus, ( <i>Sclerocactus mesae-verdae</i> )	T	001 and 002

The NHP had also identified five (5) federally-listed threatened or endangered species of concern with potential to occur on the 7.5 minute quadrangle containing the respective project boundary's Discharge Outfalls 001 and 002, as follows:

Names (common and scientific)	Status	Discharge Outfall(s)
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	E	001
Roundtail Chub ( <i>Gila robusta</i> )	Candidate	001 and 002
Colorado Pikeminnow ( <i>Ptychocheilus lucius</i> )	E	001 and 002
Mesa Verde Cactus, ( <i>Sclerocactus mesae-verdae</i> )	T	001 and 002
Razorback Sucker ( <i>Xyrauchen texanus</i> )	E	001 and 002

In addition, the NHP letter noted that on March 21, 1994 (Federal Register, Vol. 59, No. 54), the U.S. Fish and Wildlife Service designated portions of the San Juan River (SJR) as critical Habitat for Colorado squawfish (*Ptychocheilus lucius*) and Razorback Sucker (*Xyrauchen texanus*). Colorado squawfish critical habitat includes the SJR and its 100-year floodplain from the State Route 371 Bridge in T29N, R13W, sec. 17 (New Mexico Meridian) to Neskahai Canyon in the San Juan arm of Lake Powell in T41S, R11E, sec. 26 (Salt Lake Meridian) up to the full pool elevation. Razorback sucker critical habitat includes the SJR and its 100-year floodplain from the Hogback Diversion in T29N, R16W, sec. 9 (New Mexico Meridian) to the full pool elevation at the mouth of Neskahai Canyon on the San Juan arm of Lake Powell in T41S, R11E, sec. 26 (Salt Lake Meridian.) All actions carried out, funded or authorized by a federal agency which may alter the constituent elements of critical habitat must undergo section 7 consultation under the ESA, as amended. Constituent elements are those physical and biological attributes essential to a species conservation and include, but are not limited to, water, physical habitat, and biological environment as required for each particular life stage of the species.

## 2. EPA's Finding

This permit authorizes the discharge of pipeline flush and hydrostatic testing/disinfection in conformance with the federal 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 discharge 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 because the limits included in the permit are designed to be protective of all designated uses of the immediate receiving water, the Hogback Irrigation Canal, a tributary to the San Juan River. Additionally, the earthen plugs constructed at two locations within the canal will create temporary ponding, and the ponded water is likely to be either used for irrigation (one of the designated uses protected) or evaporated. Thus, there is not likely to be any discharge of the effluent to the San Juan River itself. 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.

**IX. 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

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 at the address above or by phone (415) 972-3511. 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.