

**April 2015**  
**FACT SHEET**  
**Authorization to Discharge under the**  
**National Pollutant Discharge Elimination System**  
**for the**  
**Mariano Lake Waterline Flushing and Disinfection Project**  
**NPDES Permit No. NN0030346**

Applicant address: Mariano Lake Chapter Water System  
P.O. Drawer 678  
Fort Defiance, AZ 86504

Applicant Contact: Kevin James, Owner KBK  
(505) 385-2332  
  
George Mihalik, P.E., Project Manager  
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Facility Address: Mariano Lake Waterline Project  
BIA Route N49/Gulf Mine Road  
McKinley County  
Mariano Lake Chapter, NM 87365

Facility Contact: Jason John, Branch Manager WMB  
(928) 729-4004

**I. Summary**

On March 4, 2015, Mariano Lake Chapter Water System (“MLCWS” or “applicant”) submitted an application for an National Pollutant Discharge Elimination System (“NPDES”) permit for the proposed discharge of pipeline flushing and disinfection from the Mariano Lake Waterline 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. The pipeline will be flushed with potable water at the end of construction, discharging from flush valves at two discharge locations. This fact sheet is based on information provided by the applicant through its application, along with the appropriate laws and regulations.

**II. Description of Facility**

MLCWS is involved in the construction and installation of a new potable water supply/distribution pipeline within the Mariano Lake Chapter of the Navajo Nation. A total of

approximately 7,800 cubic feet of waterline is being constructed in multiple phases involving varying lengths and diameters along BIA Route N49/Gulf Mine Road in McKinley County, New Mexico. Upon completion of pipeline installation, the pipeline will then be flushed with potable water and disinfected prior to placing them into service. The pipe volume is about 58,000 gallons, and at least two pipe volumes will be flushed, for a total of 116,000 gallons of discharge volume.

<b>Mariano Lake Waterline</b>			
Waterline lengths by diameter			
	Waterline Lengths by Diameter, Feet		
	6 inch	4 inch	2 inch
Phase 1A	15,613	2,137	1,577
Phase 1B	19,205	6,577	2,421
Phase 1C			2,265
Totals	34,818	8,714	6,263
cubic feet	6836	761	137
gallons	51,140	5,691	1,021

  

Total Gallons pipe volume per flush (2 flushes total)	57,852
<b>Total Gallons to flush</b>	<b>115,705</b>

As part of the flushing, chlorinating and neutralizing of the entire pipeline, MLCWS will be filling and flushing the pipeline with potable water and discharging at two separate outfalls for approximately 20 hours. The first flush will be discharged to Old Gulf Mine wash which is located on the east side of the project and is herein referred to as Discharge Outfall No. 001. The second flush will be discharged to Red Willow wash on the west side and is herein referred to as Discharge Outfall No. 002. The first dry wash is situated on Indian Allotted Land while the second wash is on Navajo Nation Trust Land; both dry washes are located about 4 miles apart and are tributaries to Puerco River, a tributary to the Little Colorado River. The applicant believes that these washes are normally dry arroyos that only have water in them during large rains and that the proposed discharge from the pipeline flushing will not travel farther than a couple of hundred feet in the washes.

Both discharge outfalls 001 and 002 are summarized in Table 1 below.

Outfall	Activity	Flow Rate (GPM)	Total Volume (Gallons)	Receiving Water(s)
001	Flush/chlorinate/neutralize	100	58,000	Old Gulf Mine wash (a tributary to Puerco River)
002	Flush/chlorinate/neutralize	100	58,000	Red Willow wash (tributary to Puerco River)

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 flushing 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 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 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.

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 (Rio Puerco and tributaries) 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

Discharges from Outfall Nos. 001 and 002 are to Old Gulf Mine wash and Red Willow wash, respectively, which will have no flow most time 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 pipeline flushing and disinfection include pH, solids and TRC.

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 WOBELs**

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.

**Total Suspended Solids (TSS):** Dirt and solids may find their way inside the pipelines during their installation underground. Therefore, during the flushing 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 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 disinfection 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 disinfection 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 exceedances 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 disinfection into tributaries to Rio Puerco, a tributary to the Little Colorado River, a water of the United States.

EPA reviewed the Navajo Nation's Department of Fish & Wildlife Natural Heritage Program (NNHP) database for information on Endangered and Threatened Species in the Navajo Nation. <http://www.nndfw.org/> The FWS has deferred all of its survey and information collection in the Navajo Nation to the NNHP. NNHP identified no listed species of concern known to occur within proximity of the project discharge outfalls. The NNHP identified "potential species" that may potentially be within proximity to the project outfalls to be Black-footed ferret (*Mustela nigripes*) and Southwestern willow flycatcher (*Empidonax traillii extimus*).

### **2. EPA's Finding**

This permit authorizes the discharge of pipeline flush and 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 waters, Old Gulf Mine

wash and Red Willow wash, both tributaries to the San Juan River. 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-2-3)  
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.