

# **NPDES PERMIT NO. NM0023485**

## **FACT SHEET**

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

### **APPLICANT**

Town of Bernalillo  
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### **ISSUING OFFICE**

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### **DATE PREPARED**

May 19, 2021

### **PERMIT ACTION**

Proposed re-issuance of the current permit issued on June 6, 2016, with an effective date of August 1, 2016, and an expiration date of July 31, 2021.

### **RECEIVING WATER – BASIN**

Rio Grande River – Adjacent to Middle Rio Grande River Basin (Segment 20.6.4.106 NMAC)

**DOCUMENT ABBREVIATIONS**

In the document that follows, various abbreviations are used. They are as follows:

4Q3	Lowest four-day average flow rate expected to occur once every three-years
BAT	Best available technology economically achievable
BCT	Best conventional pollutant control technology
BPT	Best practicable control technology currently available
BMP	Best management plan
BOD	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CBOD	Carbonaceous biochemical oxygen demand (five-day unless noted otherwise)
CD	Critical dilution
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
DO	Dissolved oxygen
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FWS	United States Fish and Wildlife Service
mg/l	Milligrams per liter
ug/l	Micrograms per liter
lbs	Pounds
MDL	Method Detection Limit
MG	Million gallons
MGD	Million gallons per day
ML	Minimum Level
MQL	Minimum quantification level
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NOEC	No observable effect concentration
NPDES	National Pollutant Discharge Elimination System
O&G	Oil and grease
POTW	Publicly owned treatment works
RP	Reasonable potential
SS	Settleable solids
SSM	Sufficiently Sensitive Method
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
UAA	Use attainability analysis
USGS	United States Geological Service
WLA	Waste Load allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

## I. CHANGES FROM THE PREVIOUS PERMIT

The changes from the current permit issued on June 6, 2016, with an effective date of August 1, 2016, and an expiration date of July 31, 2021, include:

- Substitute unit (MPN) for E. coli bacteria has been added.
- Monitoring for arsenic, ammonia and nitrate has been removed.
- Limitation for DO has been revised to 5 mg/L from 6 mg/L.
- Limitations for BOD<sub>5</sub> have been revised to 30 mg/L on monthly average and 45 mg/L on 7-day average.
- Limitation for total phosphorus has been removed.
- Monitoring of nutrients, mercury and O&G has been established.
- Monitoring frequency for E. coli bacteria has been increased to weekly from 3/month.

## II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility (Outfall: Latitude 35° 18' 20" North and Longitude 106° 33' 40" West) is located at 585 Calle Chaparral, Bernalillo, Sandoval County, New Mexico. The facility is located on State land but the discharge from Outfall 001 enters the Rio Grande from the east to Pueblo of Sandia surface waters. The Tribe has jurisdiction over the east half of the Rio Grande, with the west half Rio Grande controlled by New Mexico.

Under the SIC code 4952, the applicant operates Town of Bernalillo Wastewater Plant, which has a design flow of 1.2 MGD providing sanitary services for approximately 9,669-population, with one significant industrial user. The treatment work was designed in 2007 with a calculated 20-year design flow of 1.2 MGD. Various environmental and financial factor have reduced both the growth rate of the Town and the average user wastewater discharge. Over the last two years, the maximum daily flow rate was less than 1.0 MGD and the averaged flow rate was about 0.63 MGD. The previous permit established limits with the design flow rate of 0.8 MGD. For this permit term, EPA retains this permitted rate at 0.8 MGD. The plant is a mechanical treatment system providing secondary level of treatment. Effluent is UV-disinfected before discharged via a lift station to Rio Grande River. Sewage sludge is digested, de-watered and then hauled to a landfill. A map of the facility is attached.

## III. EFFLUENT CHARACTERISTICS

Data submitted in Form 2A is as follows:

Parameter	Max	Avg
	(mg/l unless noted)	
Flow (MGD)	1.20	0.63
pH, minimum, standard units (su)	6.70	NA
pH, maximum, standard units (su)	7.97	NA
Temperature (C), winter	27.7	19.3
Temperature (C), summer	28.0	26.2
Biochemical Oxygen Demand, 5-day (BOD <sub>5</sub> )	18.00	6.27
E. coli (cfu/100 ml)	143.9	16.3
Total Suspended Solids (TSS)	49.00	7.11
Ammonia (as N)	15.00	1.34
TRC	NA	NA
DO	7.71	5.09

Total Kjeldahl Nitrogen (TKN)	2.10	1.98
Nitrate + Nitrite Nitrogen	6.70	4.53
Oil & Grease	ND	ND
Phosphorus (Total)	18.00	3.57
TDS	888.00	861.33

Since August 1, 2016 there have been exceedances in DMR (available upon request) as follows:

Parameter	Date Report	Exceedance, 30-day average, mg/L	Exceedance, daily max., mg/L
DO	Several events		Several exceedances
BOD <sub>5</sub>	11/30/18	1 exceedance	
E. coli bacteria	Several events		Several exceedances
Phosphorus, total	4 events	4 exceedances	3 exceedances

#### IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water”; more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a).

#### V. DRAFT PERMIT RATIONALE AND CONDITIONS

##### A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the proposed draft permit for TSS and BOD<sub>5</sub>, and percent removal for each. Water quality-based effluent limitations are established in the proposed draft permit for E. coli bacteria, pH, TRC and DO.

##### B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

###### 1. General Comments

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

**BPT** - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

**BCT** - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants, including BOD<sub>5</sub>, TSS, *E. coli* bacteria, pH, and O&G.

**BAT** - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

2. Effluent Limitation Guidelines

The facility is a POTW/POTW-like that has technology-based limits established at 40 CFR 133.102 for Secondary Treatment Regulation. Pollutants with limits established in this Chapter are BOD<sub>5</sub>, TSS and pH. BOD<sub>5</sub> limits of 30 mg/l for the 30-day average and 45 mg/l for the 7-day average and 85% percent (minimum) removal are found at 40 CFR §133.102(a). TSS limits; also 30 mg/l for the 30-day average and 45 mg/l for the 7-day average, average and 85% percent (minimum) removal are found at 40 CFR §133.102(b). The limit for pH is 6-9 s.u. based on 40 CFR §133.102(c).

Regulations at 40 CFR §122.45(f)(1) require all pollutants limited in permits to have limits expressed in terms of mass such as pounds per day. When determining mass limits for POTWs or similar, the plant’s design flow (0.8 MGD in this case) is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

$$\text{Loading in lbs/day} = \text{pollutant concentration in mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * \text{design flow in MGD}$$

$$\text{30-day average BOD/TSS loading} = 30 \text{ mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * 0.8 \text{ MGD} = 200 \text{ lbs/day}$$

$$\text{7-day average BOD/TSS loading} = 45 \text{ mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * 0.8 \text{ MGD} = 300 \text{ lbs/day}$$

A summary of the technology-based limits for the facility at both outfalls is:

Parameter	30-day Avg, lbs/day, unless noted	7-day Max, lbs/day, unless noted	30-day Avg, mg/l, unless noted	7-day Max, mg/l, unless noted
BOD <sub>5</sub>	200	300	30	45
BOD <sub>5</sub> , % removal <sup>1</sup>	≥ 85	---	---	---
TSS	200	300	30	45
TSS, % removal <sup>1</sup>	≥ 85	---	---	---
pH	N/A	N/A	6.0 to 9.0 s.u.	6.0 to 9.0 s.u.

<sup>1</sup> % removal is calculated using the following equation: [(average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration] \* 100.

### 3. Pretreatment Regulation

The facility has one significant industrial users (SIUs), Bosque Brewing Company, which is subject to the local limits. However, a full pretreatment program is not required pursuant to 40 CFR 403.8.

## C. WATER QUALITY BASED LIMITATIONS

### 1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on Federal or State/Tribe WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State/Tribal WQS and applicable State/Tribe water quality management plans to assure that surface WQS of the receiving waters are protected and maintained or attained.

### 2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State/Tribe narrative and numerical water quality standards are used in conjunction with EPA criterion and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

### 3. Sandia Water Quality Standards

The Pueblo of Sandia has been approved to have treatment in the same manner as a state as contained in 40 CFR 131.8. The general and specific stream standards for the Pueblo of Sandia Water Quality Standards (PSWQS) are provided in "Pueblo of Sandia Water Quality Standards", revised January 31, 2008, approved and adopted by Tribal Council Resolution 2009-118 on November 13, 2009, and approved by EPA March 9, 2010. This latest WQS was used in the previous permitting renewal. The designated uses of the Rio Grande, according to PSWQS, Section V.A.1, are warmwater and coolwater aquatic/fishery, primary contact ceremonial, primary and secondary contact recreational, agricultural and industrial water supply, domestic water supply and wildlife habitat. The critical low flow 4Q3 and harmonic mean (PSWQS, Section I.H) are the same as NMWQS.

### 4. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC approved on September 12, 2018). The receiving water is Rio Grande River (segment 20.6.4.106 NMAC of the Rio Grande River Basin). The stream designated uses are irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact and public water supply.

### 5. Permit Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). Concentration limits are monitored at Outfalls 001 &

601; whereas, mass limits are monitored at Outfall 001. State or Tribal WQS that are more stringent than effluent limitation guidelines and the most stringent limitations are chosen as follows:

a. pH

State Water Designated Use(s)	State WQS	Tribe Water Designated Use(s)	Pueblo of Sandia (PS) WQS	Limitation Established
Primary contact and warmwater aquatic life	6.6 – 9.0 [20.6.4.900.D and H(6)]	Coolwater Aquatic Life/Fishery	6.6 – 9.0 [Section IV.A]	6.6 – 9.0

b. Bacteria

State Water Designated Use(s)	State WQS	Tribe Water Designated Use(s)	Pueblo of Sandia WQS	Limitation Established
Primary contact	126 cfu (or MPN)/100 ml monthly; 410 cfu (or MPN)/100 ml daily maximum, [20.6.4.900.D]	Primary Contact Ceremonial Use	47 cfu/100 ml monthly; 88 cfu/100 ml daily maximum, [Section IV.D]	47 cfu (or MPN)/100 ml monthly; 88 cfu (or MPN)/100 ml daily maximum

c. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant.

All applicable facilities are required to fill out appropriate sections of the Form 2A and 2S, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to POTWs, but also to facilities that are similar to POTWs, but which do not meet the regulatory definition of “publicly owned treatment works” (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to “make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities,” per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL.

NMED provides a 4Q3 a critical flow of 221.69 cfs (at gage 08329918 Rio Grande at Alameda Bridge minus design flows from this facility and Rio Rancho WWTP #2); harmonic mean is 645.16 cfs. The ambient upstream data is obtained from SWQB Monitoring Station 32RGrand508.0 from April 2014 to October 2014. Effluent metal-pollutants (due to discharge flow < 1.0 MGD and the specific SIU influent-contributor) are evaluated against the MQL, PSWQS and NMWQS (for those with no established MQL). Pollutants with levels above the MQL and Tribal/State WQS are analyzed for RP. Ambient data are inputted into the RP if available. For RP calculation purpose, ML values are used for those results reported with less than the MLs or non-detect (ND). The calculated instream concentrations in Appendix A are compared to PSWQS applicable criteria. Attached Appendix A shows no RPs exist in term of PSWQS and NMWQS. Due to nature of the discharge EPA sees no concern for other toxic pollutants based on their test results. If there are no changes in treatment process, SIU nor the discharge

flow is greater than 1.0 MGD (with permittee’s certification), the permittee may not need to test for parameters in Table C form 2A unless required in the permit.

There is no RP excursion for adjusted gross alpha in Appendix A. Monitoring requirement (reduced to annually) for this pollutant is retained in this permit draft for TMDLs purpose mentioned below.

Arsenic is re-evaluated against the PSWQS for RP using data in the Appendix A. To determine if a pollutant has a reasonable potential to exceed a water quality criterion the following calculation is performed with a steady-state mass balance model in the NMIP:

$$\text{Instream concentration} = ((FQ_a \times C_a) + (Q_e \times C_e \times 2.13)) \div (FQ_a + Q_e) = \text{ug/L}$$

Where:

C<sub>e</sub> is the geometric mean effluent concentration, 3.43 ug/l (dissolved)

C<sub>a</sub> is the ambient concentration upstream of discharger, 2.21 ug/l (dissolved),

Q<sub>e</sub> is the effluent flow rate, 1.24 (0.8 MGD)

Q<sub>a</sub> is the 4Q3 flow rate, 221.691 cfs (chronic) and 645.16 cfs (human health)

F is the fraction of stream allowed for mixing, 1.0.

The criterion for arsenic is as below pursuant PSWQS Appendix B:

Arsenic	Fish Consumption (dissolved)	Acute (dissolved)	Chronic (dissolved)
Criterion, ug/L	3.6, more stringent than NMWQS	340, same as NMWQS	150, same as NMWQS
Effluent, ug/L (Average value)	3.43 (per DMR)	3.43 (per DMR)	3.43 (per DMR)
Calculated Instream Concentration, ug/L	2.21 using Q <sub>a</sub> = 645.51 cfs	RP level = effluent x 2.13 = 7.32	2.23 using Q <sub>a</sub> = 234.51 cfs

RP does not exist for any criterion because the calculated instream concentration is less than its respective criterion for fish consumption and chronic conditions, and the RP level is less than the acute criterion. Previous monitoring requirement for arsenic is removed in this permit draft. This monitoring removal does not violate the Antibacksliding because the current data were not available previously pursuant to 40 CFR 122.44(l)(2)(i).

d. TRC

The facility uses UV unit to disinfect the effluents. TRC of 11 µg/l (for wildlife habitat; 20.6.4.900.J NMAC and for Coolwater Aquatic Life/Fishery) is established in case chlorine based-product is contributed in the treatment process or disinfection of treatment equipment.

e. DO

Both the State of New Mexico and Pueblo of Sandia WQS criterion applicable to the marginal warm-water aquatic life and warmwater and coolwater aquatic/fishery, respectively, designated use is at least 5 mg/L for dissolved oxygen. As a part of the permitting process, EPA used the LA-QUAL water quality model, which is a steady-state one-dimensional model which assumes complete mixing within each modeled element, to develop permit parameters for the protection of the State of New Mexico and Pueblo of Sandia surface water WQS for DO (i.e., 5 mg/L). Primarily based on the City of Bernalillo



Wastewater Treatment Plant's design flow (0.8 MGD) and the critical flow of the receiving water (221.69 cfs), various BOD<sub>5</sub> factors including BOD<sub>5</sub> Secondary Treatment Standards were considered and simulated to achieve the DO criterion. A complete characterization of Rio Grande River (i.e., water quality and hydrodynamic data) was not available. Where data were not available, estimates and assumptions are made. The following is a summary of model inputs.

The City of Bernalillo Wastewater Treatment Plant's design flow is 0.035 m<sup>3</sup>/sec (0.8 MGD). The discharge location provided in the permit application is located at Latitude 35° 18' 20" N (35.3055), and Longitude 106° 33' 40" W (-106.5611). Other effluent parameters provided in the permittee's application and applied in the model include Ammonia (Avg: 1.34 mg/L), DO (Avg: 5.09 mg/L), effluent temperature (25 C), Nitrate plus Nitrite Nitrogen (Avg: 4.53 mg/L), and E. Coli (Avg: 16 CFU/100ml).

NMED provided the following information. The critical low flow of Rio Grande River receiving stream is approximately 6.28 m<sup>3</sup>/sec (221.69 ft<sup>3</sup>/sec). Other parameters applied in the model include ambient temperature (18 C), Ammonia (Avg: 0.14 mg/L), DO (Avg: 5 mg/L), Nitrate plus Nitrite Nitrogen (Avg: 1 mg/L) and Ambient E. Coli of 18 CFU/100ml, and the receiving stream average depth of 6 feet (2 meters) were assumed since no data available.

EPA used the EPA's Environmental Justice Screening and Mapping Tool (Version 2019) to estimate the average elevation of the study area and average width of Rio Grande River. The average elevation is approximately 1539.24 meter (5050 feet). The average width of Rio Grande River is approximately 37 meters (121 ft). And, the studied Rio Grande River segment length is approximately 13.8 kilometers (6.8 miles).

The model results show no excursion of the receiving stream DO standard of 5 mg/L when the BOD<sub>5</sub> limits of 30 mg/l for monthly average and 45 mg/l for 7-day maxima were applied (see graph with 30/45 mg/L BOD<sub>5</sub> in Appendix 1; other detail information is available upon request). The model results are based on the assumptions and default values as explained and presented above. Should these conditions change, the model should be updated to provide a more accurate assessment of the water quality within the receiving water body.

DO was previously limited at 6 mg/L or greater. According to a letter from Pueblo of Sandia dated February 11, 2021, the applicable criterion for this receiving water should be 5 mg/L or greater. Therefore, EPA revises the DO limitation as advised by the Pueblo. BOD<sub>5</sub> was previously limited at 13 mg/L on monthly average and 25 mg/L on 7-day average in accordance with the previous DO limitation. The DO modeling above show that DO stays above 5 mg/L with 30/45 mg/L BOD<sub>5</sub>; so, EPA also revises limitations for BOD<sub>5</sub> to the same limits for secondary treatment (i.e., 30 mg/L on monthly average and 45 mg/L on 7-day average). The limit relaxations for DO and BOD<sub>5</sub> do not violate the Antibacksliding because error/mistake was made previously pursuant to 40 CFR 122.44(l)(2)(i).

f. Salinity/Mineral Quality (Total Dissolved Solids, Chlorides, and Sulfates)

There are criteria for TDS (500 mg/L and no more than 1/3 increase of the background concentration, which are more stringent than the NMWQS), chlorides and sulfates (250 mg/L and no more than 1/3 increase of the background concentration) applicable to the designated uses pursuant to PSWQS Section III.K and 20.6.4.106.B(2) NMAC. TDS is evaluated with the same method as for arsenic above using new available data for 4Q3, effluent and ambient concentrations. Ambient concentration (Ca) for TDS,

measured at the same locations as for arsenic, was 213 mg/L on geometric mean from April to Oct. 2014. Effluent data (Ce) for TDS is at 861 mg/L on average stated in Form 2A. Instream concentration for TDS was calculated at 222 mg/L, which is less than the allowable increase limit  $[213 \times (1 + 1/3) = 284 \text{ mg/L}]$ . Thus, RP does not exist and there is no further requirement for TDS.

In the same approach, total chlorides and sulfates are evaluated against PSWQS as follows:

	Effluent (Ce), mg/L	Ambient (Ca), mg/L	Criterion 1/3 increase (Cs), mg/L	Calculated instream, mg/L	Calculated limit, mg/L 30-day average	Calculated limit, mg/L daily max
Chlorides, total	250	10	13	12.9	NA	NA
Sulfates, total	120	48.8	65	49.9	NA	NA

There are no RP excursions for total chlorides and total sulfates and no further requirement for these pollutants.

g. Oil & Grease, Ammonia, nitrate and Total Phosphorus (TP)

O&G effluent data are reported with “ND” at 11.1 mg/L for ML, which is not a sufficient detection level compared to 10 mg/L on average as a guideline per PIWQS Section III.B. EPA proposes monitoring requirement for O&G quarterly; data will be evaluated in the next permit renewal process.

Ammonia is re-evaluated using the same method as for arsenic with the same 4Q3. Ambient data for temperature and pH, measured at the same location as for arsenic, were 18 °C and 8.25 s.u. geometric means from April to Oct. 2014. Ambient data for ammonia is not available at the same location. The criterion for total ammonia is as below pursuant PSWQS Appendix A, Tables 1 and 3:

<b>Ammonia, total</b>	<b>Acute</b>	<b>Chronic</b>
Criterion, mg/L	3.15 using pH = 8.3, fish present. Same criterion as NMWQS	1.22 using pH = 8.3; 18°C, fish present. Between 0.99 and 0.87 for NMWQS.
Effluent, mg/L (average)	1.34	1.34
Calculated Instream Concentration, mg/L	N/A because criterion must be met at end of pipe. RP level = effluent x 2.13 = 2.85	0.015
Applicable Limit	No, because instream concentration is less than criterion	No, because instream concentration is less than criterion

Nitrate is evaluated using the same approach with harmonic mean flow (for human health criterion):

<b>Nitrate, total</b>	<b>Chronic</b>
Criterion, mg/L	10 for water consumption human health, PIWQS Appendix B
Effluent, mg/L (average)	5.88 (per DMR)
Ambient data	0.1 (nitrite + nitrate)
Calculated Instream Concentration, mg/L	0.16 (see Appendix A)
Applicable Limit	No, because instream concentration is less than criterion

Previous monitoring requirement for total ammonia and total nitrate are removed in this permit draft. This monitoring removals do not violate the Antibacksliding because the current data were not available previously pursuant to 40 CFR 122.44(1)(2)(i).

A guideline for TP is 0.100 mg/L pursuant to PSWQS Section III.E; but it’s not a criterion. There is no numerical criterion for TP in the NMWQS. Therefore, EPA removes TP limitations but required the monitoring (mentioned below) for next permit renewal and in case PSWQS is revised. This limit removal does not violate the Antidegradation because mistake was made previously pursuant to 40 CFR 122.44(i)(2)(i).

h. Nutrients (total nitrogen and total phosphorus)

EPA has started to monitor nutrients (total nitrogen and total phosphorus) discharged from POTWs and others. Data would be used to determine applicable limits to protect local and downstream water quality. The proposed monitoring frequency for the nutrients is once/quarter.

D. MONITORING FREQUENCY FOR LIMITED/MONITORED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40 CFR §122.44(i)(1). EPA established the monitoring frequency based on Table 9 (page 34 of the NMIP) for design flow between 0.5 and 1.0 MGD.

Parameter	Frequency	Sample Type
Flow	Daily	Totalized Meter
pH	5/week	Instantaneous Grab
BOD <sub>5</sub> /TSS	3/month	3-hr Composite
% Removal	1/month	Calculation
TRC*	Daily	Instantaneous Grab
E. coli Bacteria	Weekly (increased due to exceedances)	Grab
DO	3/week	3-hr Composite
Nutrients	Quarterly	3-hr Composite
O&G, mercury, adjusted gross alpha	Quarterly	3-hr Composite
PCBs	Once	3-hr Composite

\* Applicable when chlorine is used in the treatment process, including cleaning of treatment units.

E. WHOLE EFFLUENT TOXICITY

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. Table 11 (page 42) of the NMIP outlines the type of WET testing for different types of discharges. An acute test at 6%, using an acute-to-chronic ratio of 10:1 will be the requirement for this permit based on a 4Q3 of 221.69 cfs (143.28 MGD) and effluent flow of 0.8 MGD for Outfall 001. There was no toxicity exhibited during the previous permit cycle at the critical dilution of 6%, therefore there is no Reasonable Potential for this outfall.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. The additional effluent concentrations for Outfall 001 must be 2.5%, 3.4%, 4.5%, 6.0%, 8.0%. The permittee shall monitor discharge(s) as specified below for outfall 001:

WET Testing (48-hr Acute Static Renewal NOEC) <sup>1</sup>	VALUE	Frequency	Type
Daphnia pulex	Report	Once/Year	24hr Composite
Pimephales promelas	Report	Once/Year	24hr Composite

<sup>1</sup> Monitoring and reporting requirements begin on the effective date of this permit. See Part II of the permit, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

## VI. TMDL REQUIREMENTS

The receiving water segment 20.6.4.106 NMAC Rio Grande (non-pueblo Alameda Bridge to HWY 550 Bridge) has been listed in 303(d) List. The receiving water is impaired for wildlife habitat, livestock watering, primary contact and marginal warmwater aquatic life. Causes are PCBs (including fish consumption), mercury (fish consumption), adjusted gross alpha and E. coli bacteria. DO has been removed from the previous list. Latest TMDL for E. coli was issued in 2010, which the limits were established based on this TMDL. EPA retains the previous limits for E. coli in this permit draft. TMDLs for other causes are estimated in 2023. Adjusted gross alpha monitoring is retained; EPA also establishes quarterly-monitoring for mercury for TMDL purpose. Effluent PCBs level was detected at 0.0000177 ppb, which is below the Tribe and State WQS; the monitoring is continued in this permit draft for TMDL purpose. If there are no changes in treatment process, SIU and the discharge flow is less than 1.0 MGD (with permittee's certification), the permittee may resubmit this test result for PCBs. EPA propose monitoring of mercury quarterly for TMDL purpose at well. The permit has a standard reopener clause that would allow the permit to be changed if at a later date additional requirements on new or revised TMDLs are completed.

## VII. ANTIDegradation

The NMAC, Section 20.6.4.8 "Antidegradation Policy and Implementation Plan" sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving water, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

## VIII. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet Antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR 122.44(l)(2)(i)(B), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance.

## IX. ENDANGERED SPECIES CONSIDERATIONS

According to the IPaC list updated on January 28, 2021 for Sandoval County, NM obtained from <http://ecos.fws.gov>, there are endangered (E)/threatened (T) species that were listed in the previous permit: Mexican spotted owl (T), Southwestern willow flycatcher (E), Rio Grande Silvery Minnow (E). Jemez Mountains salamander (E), Yellow-billed Cuckoo (T) and New Mexico meadow jumping mouse (E). These species were previously determined with "no effect". A critical habitat for the Rio Grande Silvery Minnow has been established per 68 FR 8088 8135 dated 02/19/2003. The discharge flow path

may cross this habitat. The discharge does not increase the loadings that could impact the water quality and on the endangered fish subsequently.

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, EPA has reviewed this permit for its effect on listed threatened and endangered species and designated critical habitat. After review, EPA has no information determining that the reissuance of this permit will have “effect” on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. No additions have been made to the USFWS list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.
2. EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.
3. The draft permit is consistent with the States WQS and does not increase pollutant loadings.
4. EPA determines that Items 1, thru 3 result in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have “no effect” on listed species and designated critical habitat.

#### **X. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS**

The reissuance of the permit should have no impact on historical and/or archeological sites since no new construction activities are planned in the reissuance.

#### **XI. PERMIT REOPENER**

The permit may be reopened and modified during the life of the permit if NMWQS are promulgated or revised. In addition, if the State develops a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that TMDL. Modification of the permit is subject to the provisions of 40 CFR §124.5.

#### **XII. VARIANCE REQUESTS**

None

#### **XIII. CERTIFICATION**

The permit is in the process of certification by the Pueblo of Sandia following regulations promulgated at 40 CFR §124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

#### **XIV. FINAL DETERMINATION**

The public notice describes the procedures for the formulation of final determinations.

**XV. ADMINISTRATIVE RECORD**

The following information was used to develop the draft permit:

**A. APPLICATION(s)**

EPA Application Forms 2A and 2S dated January 25, 2021; additional information received on April 12 & 14, 2021

**B. 40 CFR CITATIONS**

Sections 122, 124, 125, 133, 136, 434

**C. STATE OF NEW MEXICO REFERENCES**

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, effective September 12, 2018.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2020-2022

Total Maximum Daily Load (TMDL) Report for the Middle Rio Grande Watershed, approved by EPA, June 30, 2010.

**D. MISCELLANEOUS**

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico – NMIP, March 15, 2012.

NMED emails dated January 27, 2021; March 4, 2021; April 16, 2021

Permittee email dated February 23, 2021; March 23, 2021; March 25, 2021; April 14, 2021

Pueblo of Sandia letter dated February 11, 2021