

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

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PERMIT ACTION

Renewal of a permit previously issued on September 24, 2010, with an effective date of November 1, 2010, and an expiration date of October 31, 2015.

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
MG	Million gallons
MGD	Million gallons per day
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
NPDES	National Pollutant Discharge Elimination System
ML	Minimum quantification level
O&G	Oil and grease
POTW	Publically owned treatment works
RP	Reasonable potential
SS	Settleable solids
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

Changes from the permit previously issued on September 24, 2010, with an effective date of November 1, 2010, and an expiration date of October 31, 2015, are as follow:

- Removal percentage for BOD₅ and TSS has been established.
- BOD limit have been changed to 13/25 from 30/45.
- Monitoring of arsenic has been removed.
- Limits for nitrate (total) and ammonia (total) have been removed.
- Limits for phosphorus (total) have been established.
- Monitoring of adjusted gross alpha has been established.
- DO limit has been established.

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 7,000-population, with no 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 0.6 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)	0.95	0.59
pH, minimum, standard units (su)	7.15	NA
pH, maximum, standard units (su)	7.73	NA
Temperature (C), winter	12.4	17.28
Temperature (C), summer	27.5	24
Biochemical Oxygen Demand, 5-day (BOD ₅)	24	5.90
E. coli (cfu/100 ml)	72	12
Total Suspended Solids (TSS)	19	8
Ammonia (as N)	20	0.58
TRC	N/A	N/A
DO	5.39	3.24
Total Kjeldahl Nitrogen (TKN)	2.9	2.73

Nitrate + Nitrite Nitrogen	15	5.07
Oil & Grease	ND	ND
Phosphorus (Total)	4.1	3.03
TDS	1010	933

Since the permit effective date, there have been exceedances according to the DMRs as follows:

Date	Parameters	30-day average	7-day average	Daily maximum
3/6/11	Total ammonia, mg/L	2.45		7
7/31/12	Total ammonia, mg/L	5		20
3/31/12	Total nitrate, mg/L	30.6		35.8
7/31/13	Total nitrate, mg/L	11		

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 EPA administered 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.

The application was dated April 30, 2015. 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 PROPOSED PERMIT CONDITIONS

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

In according to 40 CFR §122.44 NPDES, permit limits are developed so that they 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 percent removal for each. Water quality-based effluent limitations are established in the proposed draft permit for *E. coli* bacteria, BOD, pH, TRC and total phosphorus.

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, 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 ELG’s established at 40 CFR Part 133, Secondary Treatment Regulation. Pollutants with ELG’s established in this Chapter are BOD, TSS and pH. BOD 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). ELG’s for pH are between 6-9 s.u. and are found at 40 CFR §133.102(c). The draft permit establishes new limits for percent removal for both BOD and TSS. Since these are technology-based there is no compliance schedule provided to meet these limits. Compliance is required on the permit effective date.

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 is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

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

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

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

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

Effluent Characteristic	Discharge Limitation			
	lbs/day, unless noted		mg/l, unless noted	
Parameter	30-day Avg	7-day Max	30-day Avg	7-day Max
BOD	200	300	30	45
BOD, % removal ¹	≥ 85	---	---	---
TSS	200	300	30	45
TSS, % removal ¹	≥ 85	---	---	---

pH	N/A	N/A	6.0 to 9.0 s.u.
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¹ % removal is calculated using the following equation: [(average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration] * 100.

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 criteria 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.

4. State Water Quality Standards

Being located adjacent the State downstream water must be protected as well. The general and specific stream standards are provided in NMWQS (20.6.4 NMAC approved on June 5, 2013). 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). State or Tribal WQS that are more stringent than effluent limitation guidelines and the most stringent limitations are chosen as follows:

a. pH

Tribe Water Designated Use(s)	Pueblo of Sandia WQS	State Water Designated Use(s)	State WQS	Limitation Established
Coolwater Aquatic Life/Fishery	6.6 – 9.0 s.u. [Section IV.A]	Warmwater aquatic life and primary contact	6.6 – 9.0 s.u. [20.6.4.900.D and H(5)]	6.6 – 9.0 s.u.

b. Bacteria

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

The facility is designated as a minor and does not need to fill out the expanded pollutant testing section Part D of Form 2A. EPA evaluates/re-evaluates nitrate (total), ammonia as N (total), arsenic, (total), PCB and DO as identified in the previous permit due to significant change in the 4Q3. In the absence of necessary data from Pueblo of Sandia, EPA uses NMED-data of 4Q3 (236 cfs), the harmonic mean flow (613 cfs) and others at gage 08329918, Rio Grande at Alameda Bridge about 1.3 miles upstream from Bernalillo WWTP during April 2004 to April 2014.

Arsenic is evaluated for RP. 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:

$$\text{Instream concentration} = ((FQa \times Ca) + (Qe \times Ce \times 2.13)) \div (FQa + Qe) = \text{ug/L}$$

Where:

Ce is the geometric mean effluent concentration, 8.59 ug/l (total) from DMRs; the dissolved one is less than this value.

Ca is the ambient concentration upstream of discharger, 2.1 ug/l (dissolved), data collected from April to Oct. 2014 at above Hwy 550 Bridge - 32RGrand508.0 and below Angostura Diversion Works - 30RGrand517.3.

Qe is the effluent flow rate, 1.24 cfs (0.8 MGD)

Qa is the 4Q3 flow rate, 236 cfs (chronic) and 613 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 (geo. mean)	8.59	8.59	8.59
Calculated Instream Concentration, ug/L	2.13 using Qa = 613 cfs	N/A because criterion must be met at end of pipe. RP level = effluent x 2.13	2.18 using Qa = 236 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. If the dissolved value, a fraction of the total one, for effluent concentration the calculated instream value would be less. RP did not exist for arsenic in the previous permit. The required report for arsenic previously is removed in this permit draft.

d. TRC

The facility uses UV to disinfect the effluent. However, TRC of 11 µg/l (for wildlife habitat; 20.6.4.900.G NMAC and for Coolwater Aquatic Life/Fishery) is established in the draft permit in case chlorine based-product is used in the treatment process.

e. DO

For Coolwater Aquatic Life/Fishery, criterion for DO is 6.0 mg/L or more pursuant to PSWQS, Section IV.A. EPA uses LA-QUAL version 9.30 to model DO along this receiving stream; some of the factors used are 4Q3, effluent DO and BOD5 (30 mg/l for monthly average, 45 mg/l for 7-day maxima; “30/45 BOD”). The modeled output shows DO stays below 6 mg/L along this 11.6 mile long stream (see attached graph with 30/45 BOD; other detail information is available upon request). BOD factor is simulated to achieve the DO criterion; EPA believes the optimal levels of BOD are 13/25 (see attached graph with 13/25 BOD). The reported effluent BOD in form 2A are 5.9 mg/L (aveg.) and 24 mg/L (max.); which are feasible to the 13/25 levels. EPA establishes the water-based limits for BOD at 13 mg/L (aveg.) and 25 mg/L (max.) in the permit draft; mass loadings are calculated with the same method for TSS above. Compliance schedule for DO (6 mg/L) is provided due to the reported average level of 3.24 mg/L, but for BOD it is not needed because the effluent has met this newly-established limits. This BOD limitation may be re-evaluated against the WQS in the next permit renewal process. DO is continued to be monitored for TMDL purpose mentioned below.

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 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 the same 4Q3. Ambient data (Ca) for TDS, measured at the same locations as for arsenic, was 208.95 mg/L on geometric mean during a period of March to Oct. 2014. Effluent data (Ce) for TDS reported at 933 mg/L on average. Instream concentration for TDS was calculated at 218.2 mg/L, which does not exceeds 500 mg/L nor the allowable increase limit [$208.95 \times (1 + \frac{1}{3}) = 278.6$ mg/L]. Therefore, no RP exists for TDS.

During the permit term, the permittee must submit 3 analysis for chlorides and sulfates; the results can be attached to the application for the next renewal cycle. EPA will evaluate them against the criteria.

g. Oil & Grease, Total Ammonia, Total Nitrate and Total Phosphorus

Data showing in Form 2A indicates level of O&G at “ND” with MDL of 3.43 mg/L using method 1664. The O&G criterion for the tribe water designated uses is 10 mg/L (average) and 15 mg/L (maximum) in according to Section III.B PSWSQ. EPA establishes no limit because no RP exists.

Ammonia is re-evaluated with the same method as for arsenic above using the same 4Q3. Ambient data for temperature and pH, measured at the same locations as for arsenic, were 17.4 °C on average and 8.46 s.u. at 95th percentile during a period of March to Oct. 2014. Ambient data for ammonia were detected at 0.1 mg/L or below at immediate location (32RGrand499.2) above the WWTP #2 from March to Oct. 2014. The criterion for total ammonia is as below pursuant PSWQS Appendix A, Tables 1 and 3:

Ammonia, total	Acute	Chronic
Criterion, mg/L	2.14 using pH = 8.5, fish present. Same criterion as NMWQS	0.928 using pH = 8.5; 17°C, fish present. Between 0.99 and 0.87 for NMWQS.
Effluent, mg/L (geo. mean)	0.45 from DMRs	0.45 from DMRs
Calculated Instream Concentration, mg/L	N/A because criterion must be met at end of pipe. RP level = effluent x 2.13	0.104

RP does not exist for ammonia acute or chronic criterion because the calculated instream concentration is less than chronic conditions and the RP level is less than the acute criterion. Established limits for ammonia previously are removed in this permit draft. This limit removal does not violate the Antibracksliding because the current data of 4Q3 was not available previously (see 40 CFR 122.44(l)(2)(i)). Ammonia level will be instead reported at once/quarter in the permit term; the reported data will be evaluated again in the next renewal cycle.

Nitrate is re-evaluated with the same method as for arsenic above using the same 4Q3. The current PSWQS does not have numerical criterion for nitrate; however, NMWQS criterion for public water supply is 10 mg/L instream pursuant to 20.6.4.900.J.2. Ambient data for total nitrite & nitrate was detected at 0.04 mg/L at immediate location (32RGrand508) above the Hwy 550 Bridge from March to Oct. 2014. The total nitrate would be a fraction of the total nitrite & nitrate; the 0.04 mg/L result (more conservative) is used in the calculation for RP analysis because there is no data for individual nitrate.

Nitrate, total	Chronic
Criterion, mg/L	10 per NMWQS.
Effluent, mg/L (geo. mean)	5.42 from DMRs
Calculated Instream Concentration, mg/L	0.1

RP does not exist for nitrate chronic criterion because the calculated instream concentration is less than chronic conditions. Established limits for ammonia previously are removed in this permit draft. This limit removal does not violate the Antidegradation because there is no numerical criterion for total nitrate under PSWQS, and RP does not exist pursuant to 40 CFR 122.44(i)(2)(i). Nitrate level will be instead reported at once/quarter in the permit term; the reported data will be evaluated again in the next renewal cycle.

Phosphorus, total (TP) is evaluated with the same method as for arsenic above using the same 4Q3. Ambient data for TP was detected at 0.079 mg/L (geometric mean) at immediate location (32RGrand508.0) above the Hwy 550 Bridge from March to Oct. 2014. The instream criterion for TP is 0.100 mg/L pursuant PSWQS Section III.E. There is no numerical criterion for TP in the NMWQS.

TP	
Criterion, mg/L	0.1
Effluent, mg/L (geo. mean)	2.807
Calculated Instream Concentration, mg/L	0.109

RP exists for TP because the calculated instream concentration is equal or greater than the criterion. The limits are established according to PSWQS.

$$30\text{-day Average Limit} = Cs[(FQa + Qe) \div Qe] - Ca(FQa \div Qe) = 4.10 \text{ mg/L}$$

$$\text{Daily max. Limit} = 30\text{-day average limit} \times 1.5 = 6.15 \text{ mg/L}$$

Where:

- Cs is the applicable water quality criterion, 0.1 mg/L
- Ca is the ambient concentration upstream of discharger, 0.079 mg/L
- Qe is the effluent flow rate, 0.8 MGD
- Qa is the 4Q3 flow rate, 236 cfs (152.5 MGD)
- F is the fraction of stream allowed for mixing, 1.0

EPA establishes these limits along with the mass limitation for TP at once/quarter in the draft permit with no compliance schedule because the current treatment performance has met the proposed limits. Mass limit is calculated in the same manner as for BOD/TSS as 27 lbs/day (average).

D. MONITORING FREQUENCY FOR LIMITED 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). Suggested sample frequency is consistent with those in Table 9 (page 34 of the NMIP) for design flow between 0.5 and 1.0 MGD and based on compliance history.

Parameter	Frequency	Sample Type
Flow	Daily	Totalized
pH	5/week	Instantaneous Grab
BOD ₅ /TSS	3/month	3-hr Composite
% Removal	1/month	Calculation
TRC	Daily*	Instantaneous Grab
E. coli Bacteria	3/month	Grab
DO	3/month	Instantaneous Grab

Nitrate, total	1/quarter	3-hr Composite
Ammonia as N (total)	1/quarter	3-hr Composite
TP	1/quarter	3-hr Composite
PCB	Once	Grab
Adjusted gross alpha	1/quarter	Grab

* TRC shall be measured during periods when chlorine is used as either backup bacteria control or when disinfection of plant treatment equipment is required.

E. WHOLE EFFLUENT TOXICITY

In the absence of implementation procedure for PSWQS, EPA suggests implementations in the NMIP for WET. 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. The receiving water (Rio Grande River), a perennial stream has a 4Q3 of 236 cfs. With the facility design flow rate of 0.8 MGD (1.24 cfs) and mixing fraction of 100%, a CD is calculated about 0.5%. Because the critical dilution is below 10%, an acute-to-chronic ratio of 10:1 is used to allow acute WET testing (instead of chronic one) using *Daphnia pulex* and *Pimephales promelas*. Submitted WET data show no RPs exist for both vertebrate and invertebrate species at the CD (see attached Reasonable Potential Analyzer).

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. These additional effluent concentrations must be 2.1%, 2.8%, 3.6%, 5.0% and 6.7%. The low-flow effluent concentration (critical low-flow dilution) is defined as 5.0% effluent. The permittee shall limit and monitor discharge(s) as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	30-day Avg Min.	48-hr Min.	Frequency ²	Type
WET Testing (48-hr Static Renewal) ¹				
<i>Daphnia pulex</i>	Report	Report	Once/Year	24-hr Composite
<i>Pimephales promelas</i>	Report	Report	Once/Year	24-hr Composite

¹ 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.

² The test shall take place between November 1 and April 30. This permit does not establish requirements to automatically increase the WET testing frequency after a test failure, or to begin a toxicity reduction evaluation (TRE) in the event of multiple failures. However, upon failure of any WET test, the permittee must report the results to EPA, Surface Water Quality Bureau, in writing, within 5 business days of notification of the test failure. EPA will review the test results and determine the appropriate action necessary, if any.

VI. TMDL REQUIREMENTS

Being located adjacent the State downstream water must be protected as well. 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 PCB in water column and fish tissue, adjusted gross alpha, *E. coli*, ambient bioassays-acute and DO. Latest TMDL for *E. coli* was issued in 2010, which the limits was established based on this TMDL. EPA retains this limit requirement for *E. coli* in this permit draft; the limit would be protective to both the Tribe and State WQS. TMDLs for other causes are scheduled for 2016 approximately. Adjusted gross alpha is monitored once/quarter. PCB and DO monitoring are retained as before. Effluent PCB level was detected using invalid method as required in the previous permit; the monitoring is continued in this permit draft. 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 Pueblo of Sandia and New Mexico both have antidegradation requirements to protect existing uses through implementation of their WQS. The limitations and monitoring requirements set forth in the proposed draft are developed from the appropriate State WQS and are protective of those designated uses. Furthermore, the policy's set 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 waters, which is protective of the designated uses of that water.

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)(i)(A), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit maintains the mass loading requirements of the previous permit for TSS. Ammonia and nitrate limits established in the previous permit have been removed based on changes in critical flow and upstream ambient data, which are subject to change. All of the changes represent permit requirements that are consistent with the PSWQS and NMWQS.

IX. ENDANGERED SPECIES CONSIDERATIONS

According to the list updated on May 8, 2015 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, Southwestern willow flycatcher and Rio Grande Silvery Minnow. These species were determined with "no effect". Since then, there have been 3 additional threatened/endangered species: Jemez Mountains salamander (E), Yellow-billed Cuckoo (T) and New Mexico meadow jumping mouse (E).

There has been no recovery plan for all these additional species, except the jumping mouse. According to the Recovery Outline for the mouse in June 2014, the species is endangered because of habitat loss; the main sources of the loss include grazing eliminating herbaceous vegetation, lack of water, severe wildland fire, souring flooding, highway reconstruction, unregulated recreation, loss of beaver ponds and mowing of riparian vegetation. According to the Federal Register on 11/20/2013 (78 FR 69569 69591), habitat characteristics for the salamander include moderate to high tree canopy cover with high relative humidity, elevations from 6,988 to 11,254 ft, ground surface in forest areas with large fallen trees and underground habitat in forest or meadow areas containing interstitial spaces. Major factors affecting the species are (a) wildland fire, (b) disease (fungus, infection) or predation (by snake, bear, owl), (c) inadequacy of existing regulations and (d) others including chemical use for weed control and climate change per the Federal Register on 09/10/2013 (78 FR 55599 55627). Because of these facts, EPA believes the salamander's habitats unlikely exist in flow path of the discharge. According to the Federal Register on 8/15/2014 (79 FR 48547 48652) the primary constituent elements specific to the western yellow-billed cuckoo are: riparian woodlands with mixed willow-cottonwood vegetation, mesquite-thorn-forest vegetation, presence of a prey base consisting of large insect fauna, and river systems that are dynamic and provide hydrologic processes that encourage sediment movement and deposits that allow seedling germination and promote plant growth, maintenance, health, and vigor.

Major factors affecting the cuckoo are (a) manmade features that alter watercourse hydrology, livestock overgrazing and encroachment from agriculture, climate change, (b) disease (West Nile virus) or predation (by hawk), (c) inadequacy of existing regulations and (d) others including pesticide chemical per the Federal Register on 10/03/2014 (79 FR 59991 60038).

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 the listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.
2. The draft permit is consistent with the Tribe/States WQS and does not increase pollutant loadings.
3. There is currently no information determining that the reissuance of this permit will have “effect” on the additional listed threatened and endangered species.
4. The previous permit initiated Formal Consultation with the FWS for the discharge from the facility. EPA provided a Biological Evaluation (BE) to FWS March 27, 2001. The FWS responded to EPA’s BE, August 20, 2001, Consultation # 2-22-01-I-592, concurring with EPA’s “no effect” determination for the Southwestern flycatcher and its “may affect, but not likely to adversely affect” the Rio Grande silvery minnow.

X. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

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

XI. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if PSQWS or NMWQS are promulgated or revised. In addition, if the Tribe/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 proposed permit:

A. APPLICATION(S)

EPA Application Forms 2A dated April 30, 2015 and 2S dated May 26, 2015

B. 40 CFR CITATIONS

Sections 122, 124, 125, 133, 136

C. PUEBLO OF SANDIA REFERENCES

“Pueblo of Sandia Water Quality Standards”, revised January 31, 2008, adopted by Tribal Council Resolution 2009-118 on November 13, 2009, and approved by EPA March 9, 2010.

D. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC June 5, 2013

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

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2014-2016

E. MISCELLANEOUS

Permittee’s emails dated 6/29/15, 6/30/15

NMED email dated 5/27/15, 5/22/15

Recovery Outline: New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*), June 2014

Federal Register: 78 FR 69569 69591 on 11/20/2013; 78 FR 55599 55627 on 09/10/2013; 79 FR 59991 60038 on 10/03/2014; 79 FR 48547 48652 on 8/15/2014