NPDES PERMIT NO. NM0030686
FACT SHEET

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

APPLICANT

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DATE PREPARED

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PERMIT ACTION

Proposed reissuance of the current National Pollutant Discharge Elimination System (NPDES) permit initially issued May 28, 2010 and previously renewed September 22, 2016, with an effective date of October 01, 2016, and an expiration date of September 30, 2021.

RECEIVING WATER – BASIN

Unnamed Arroyo, thence Rio Puerco in the Rio Grande Basin.

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
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
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
F&WS	United States Fish and Wildlife Service
ug/l	Micrograms per litter (one part per billion)
mg/l	Milligrams per liter (one part per million)
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
MQL	Minimum quantification level
O&G	Oil and grease
POTW	Publically owned treatment works
RP	Reasonable potential
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
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

As used in this document, references to State water quality standards and/or rules, regulations and/or management plans may mean the State of New Mexico and/or Tribal or both.

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued on September 22, 2016, with an effective date of October 01, 2016, and an expiration date of September 30, 2021 include:

a. E. coli monitoring frequency has been revised.
b. Limit for Enterococci has been added.
c. Limit for Total Residual Chlorine has been added.
d. Limit for Total Mercury has been added.
e. Total Mercury monitoring frequency has been revised.
f. Limit for Dissolved Oxygen has been added.
g. Limit for Total Dissolved Solids has been added.

II. DISCHARGE LOCATION AND ACTIVITY

As described in the application, the treatment plant is owned and operated by Laguna Development Corporation. Under the Standard Industrial Classification (SIC) 4952, the applicant currently operates a sanitary treatment facility. The treatment facility composes of coarse screen, grit removal, fine screen, anoxic basin for nitrification/denitrification, pre-aeration, and membrane bio-reactor basin. The design treatment capacity is 0.38 million gallons per day (MGD).

The effluent from the treatment plant is discharged into an unnamed arroyo thence to the Rio Puerco which runs intermittently during significant rain events. The discharge is located in Bernalillo County, New Mexico on the Pueblo of Laguna. Its outfall is approximately a half mile upstream of the Rio Puerco and 28 miles upstream of the intersection of the Rio Puerco and the Rio Grande. The discharge is located on that water at:

Latitude - 35º 01' 25" North
Longitude - 106º 56' 53" West

Downstream of the facility, jurisdiction over the Rio Puerco is shared with the Pueblo of Isleta before passing into State of New Mexico jurisdiction.

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A and 2S received on May 25, 2021, are presented below:

POLLUTANT TABLE - 1

Parameter	Max	Avg
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	0.38	0.049
Temperature, winter	10.0 °C	10.0 °C
Temperature, summer	20.0 °C	20.0 °C

pH, minimum, standard units (SU)	7.9 su	N/A
pH, maximum, standard units (SU)	8.1 su	N/A
Biochemical Oxygen Demand, (BOD)	3.6	2.6
Fecal Coliform (FCB) (bacteria/100 ml)	5.2	1.84
Total Suspended Solids (TSS)	4	4
Ammonia (NH3)	1.0	1.0
Chlorine, Total Residual (TRC)	1.1	0.88
Dissolved Oxygen	4.9	3.7
Total Kjeldahl Nitrogen (TKN)	2	1.3
Nitrate plus Nitrite Nitrogen	2.8	2.1
Oil and grease	9.89	9.66
Phosphorus, Total	3.7	3.82
Total Dissolved Solids (TDS)	4840	3035

A summary of the last 3-years of pollutant data taken from DMRs indicates one reported violation of limited parameters for %TSS Removal in November 2020 (81% for a $\geq$85% limit).

The DMR 3-year maximum (or minimum) and averages are as follows:

Flow -- 0.116 MGD max, 0.08 MGD avg
BOD – 7 mg/l max, 3.7 mg/l avg,
TSS – 8 mg/l max, 4.5 mg/l avg,
E. coli – 73.8 bacteria/100 ml max, 5 bacteria/100 ml avg,
pH – 8.0 su max, 7.6 su avg
TRC – 1.3 mg/l max, 1 mg/l avg
TDS – 4,840 mg/l max, 2,389 mg/l avg
Total Mercury – 0.0014 mg/l max, 0.0003 mg/l avg
%BOD Removal – 94% min, 97.9% avg
%TSS Removal – 81% min, 95.7% avg

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 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.

V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

1. Reason for Permit Issuance

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The previous permit will be expired on September 30, 2021. The application was received on May 25, 2021, with a revised version received June 23, 2021. The existing permit is administratively continued until this permit is issued.

2. 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, pH, and BOD_5. Water quality-based effluent limitations are established in the proposed draft permit for E. coli bacteria, Enterococci bacteria, pH, TRC, DO, TDS, and Total Mercury.

1) TECHNOLOGY BASED EFFLUENT LIMITATIONS

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, fecal coliform, 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.

The facility is a POTW treating sanitary wastewater. POTW's have 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 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(b). ELG's for pH are between 6-9 s.u. and are found at 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 POTW's, the plant's design flow is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

Loading in lbs/day = pollutant concentration in mg/l * 8.345 lbs/gal * design flow in MGD
30-day average BOD_5/TSS loading = 30 mg/l * 8.345 lbs/gal * 0.38 MGD
30-day average BOD_5/TSS loading = 95.13 lbs

7-day average BOD_5/TSS loading = 45 mg/l * 8.345 lbs/gal * 0.38 MGD
7-day average BOD_5/TSS loading = 142.7 lbs

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

Final Effluent Limits - 0.380 MGD design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/l (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD_5	95.13	142.7	30	45
TSS	95.13	142.7	30	45
BOD_5, % removal (*1)	≥ 85	---	---	---
TSS, % removal (*1)	≥ 85	---	---	---
pH	N/A	N/A	6.0 - 9.0 standard units	

*1 Percent removal is calculated using the following equation: [(average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration] * 100.

2) WATER QUALITY BASED LIMITATIONS

i. 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 WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

ii. 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 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.

iii. Reasonable Potential

All applicable facilities are required to fill out appropriate sections of the Form 2A, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to Publicly Owned Treatment Works (POTW's), but also to facilities that are similar to POTW's , 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 amount of information required for minor facilities was limited to specific sections of these forms. Supporting information for this decision was published as "Evaluation of the Presence of Priority Pollutants in the Discharges of Minor POTW's", June 1996, and was sent to all state NPDES coordinators by EPA Headquarters. In this study, EPA collected and evaluated data on the types and quantities of toxic pollutants discharged by minor POTW's of varying sizes from less than 0.1 MGD to just under 1 MGD. The Study consisted of a query of the EPA Permit Compliance System (PCS) database from 1990 to present, an evaluation of minor POTW data provided by the State agencies, and on-site monitoring for selected toxics at 86 minor facilities across the nation.

iv. Water Quality Standards

As indicated, the discharge is located on Pueblo of Laguna Tribal land. The Rio Puerco is approximately a half mile downstream of the outfall. The WWTP effluent likely enters this reach. Downstream, the Rio Puerco passes through the Pueblo of Isleta and State of New Mexico jurisdiction.

The Pueblo of Laguna was granted treatment in a manner similar to a state (TAS) on December 20, 2016, and Pueblo of Laguna Water Quality Standards became effective July 19, 2017. The designated uses of the receiving stream are 'Primary Human Contact / Ceremonial', 'Secondary Human Contact', 'Warmwater Fishery', 'Wildlife Habitat', 'Aquatic Life', and 'Livestock and Wildlife Watering'.

The Pueblo of Isleta was granted treatment in a manner similar to a state (TAS) on October 13, 1992, and Pueblo of Isleta Water Quality Standards became effective July 22, 2005. The designated uses of the Pueblo of Isleta receiving stream are 'Primary Contact Ceremonial', 'Primary Contact Recreational', 'Warmwater Fishery', 'Agricultural Water Supply', 'Industrial Water Supply', and 'Wildlife'.

A segment of the Rio Puerco is protected under 20.6.4.130 NMAC. The designated uses of the downstream waters are 'Irrigation', 'Warmwater Aquatic Life', 'Livestock Watering', 'Wildlife Habitat', and 'Primary Contact'. This segment of Rio Puerco (non-pueblo Rio Grande to Arroyo Chico) is impaired for E. coli and Total Mercury. It is currently on the State of New Mexico's 2020-2022 §303(d) List with TMDLs for both pollutants estimated for 2022.

Since 40 CFR §122.4(d) requires NPDES permits also be protective of downstream Pueblo of Isleta's and the State of New Mexico's water quality standards, their water quality standards have been considered in the development of permit conditions for the facility. The permit conditions protective of the downstream Pueblo of Isleta's and the State of New Mexico's water quality standards are also expected to be protective of Laguna Pueblo water quality.

Since the 4Q3 is zero (for intermittent and ephemeral streams), applicable & most stringent criterion must be met at point of discharge.

v. 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). Applicable WQS that are more stringent than effluent limitation guidelines are as follows:

a. BACTERIA

The Pueblo of Laguna WQS standards for 'Primary Human Contact / Ceremonial' usage are 47 cfu/100 mL monthly geometric mean and 88 cfu/100 mL daily max for E. coli based on a minimum of 5 samples/month AND 30 cfu/100 mL monthly geometric mean for Enterococci based on a minimum of 4 samples/month. The Pueblo of Laguna WQS standards for 'Secondary Human Contact' usage are 126 cfu/100 mL monthly geometric mean and 235 cfu/100 mL daily max for E. coli based on a minimum of 5 samples/month AND 33 cfu/100 mL monthly geometric mean for Enterococci based on a minimum of 4 samples/month.

The Pueblo of Isleta WQS standards for 'Primary Contact Ceremonial' usage are 47 cfu/100 mL monthly geometric mean and 88 cfu/100 mL daily max for E. coli based on a minimum of 5 samples/month.

The New Mexico State segment specific (20.6.4.130 NMAC) WQS for 'Primary Contact' usage is 126 cfu/100 mL monthly geometric mean and 410 cfu/100 mL daily max for E. coli.

The draft permit proposes retaining the 47 cfu/100 mL monthly geometric mean and 88 cfu/100 mL daily max limits for E. coli. Due to the Enterococci requirement for the Pueblo of Laguna WQS, the draft permit also proposes a 30 cfu/100 mL monthly geometric mean limit for Enterococci. A sampling frequency of 5/month for E. coli and 4/month for Enterococci is proposed to meet the sampling basis for the Pueblo of Laguna and Pueblo of Isleta WQS. Permit conditions protective of the Laguna Pueblo water quality standards are also expected to be protective of downstream tribal and the State water quality standards.

b. pH

Limitations on maximum and minimum pH are in accordance with 40 CFR 133.102. The pH of effluent should not be less than 6.0 or greater than 9.0.

The Pueblo of Laguna WQS designate Rio Puerco to have 'Secondary Human Contact', 'Warmwater Fishery', and 'Aquatic Life' usage which include pH standards of 6.6-9.0, 6-9, and 6.5-9, respectively.

The Pueblo of Isleta WQS designate Rio Puerco to have 'Primary Contact Recreational' and 'Warmwater Fishery' usage which include pH standards of 6.6-9.0 and 6.0-9.0, respectively.

The New Mexico State standards (20.6.4.130 NMAC) designate Rio Puerco to have 'Primary Contact' and 'Warmwater Aquatic Life' usage which include pH standards of 6.6-9.0 and 6.6-9.0, respectively.

Laguna Pueblo, downstream Pueblo of Isleta, and downstream State of New Mexico (20.6.4.130 NMAC) segment specific WQS for pH, 6.6 to 9.0 standard units, are more restrictive than the technology-based limits presented earlier. The draft permit proposes pH limits of 6.6 (minimum) and 9.0 (maximum) standard units.

c. Dissolved Oxygen (DO)

The 'Warmwater Aquatic Life' use criteria for DO is 5.0 mg/L or more pursuant to 20.6.4.900.H(5) NMAC, Pueblo of Laguna WQS, and Pueblo of Isleta WQS. Effluent DO was reported with 3.7 mg/L on average and 4.9 mg/L maximum. Rio Puerco is classified as an intermittent stream, therefore the low flow or 4Q3 of the receiving stream is zero (0). No modeling to evaluate the biochemical oxygen demand of the discharge was conducted. Since 4Q3 is zero, the discharge must meet end-of-pipe criteria. This permit proposes a DO limit of 5 mg/L minimum, sampled 1/week by Instantaneous Grab.

d. TOXICS

i. General Comments

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.

This WWTP is designated as a minor facility and does not need to fill out the expanded pollutant testing section Part D of Form 2A. As mentioned, the Rio Puerco is impaired for Total Mercury. There are no toxics that need to be placed in the draft permit except for TRC, TDS, and Total Mercury. Due to the intermittent nature of the receiving water, applicable water quality criteria apply at end-of-pipe with a default 4Q3 low flow of 0.0 cubic feet per second (cfs).

ii. TRC

The facility uses chlorine to control bacteria. The Pueblo of Laguna WQS and downstream Pueblo of Isleta WQS 'Coldwater Fishery' use criteria for total residual chlorine (TRC) are both 11 ug/L. NMWQS 'Wildlife Habitat' use criteria for TRC is 11 ug/l pursuant to 20.6.4.900.G NMAC. The DMR data indicate facility effluent has had low TRC concentrations and show no exceedance of 11 ug/L for the last three years. The proposed permit will implement a 11 ug/L TRC, to protect water body uses, while retaining its previous monitoring frequency of 1/week. If a test result is less than the MQL specified in Part II.A of the permit it can be reported as zero for compliance purposes.

iii. TOTAL MERCURY

The Pueblo of Laguna WQS for mercury are 0.01 mg/L (for livestock and wildlife watering), 1.1 ng/L (for 'Wildlife Habitat' use), 2 ug/L (for 'Primary Human Contact/Ceremonial' use), and 1.4 ug/L acute / 0.77 ug/L chronic (for 'Aquatic Life' use).

Downstream Pueblo of Isleta WQS for mercury are 0.01 mg/L (for 'Agricultural Water Supply' use) and 1.1 ng/L (for 'Wildlife' use).

Downstream New Mexico WQS for mercury are 0.77 ug/L (for 'Wildlife Habitat' use), 2 ug/L (for 'Domestic Water Supply' use) and 10 ug/L (for 'Livestock Watering' use).

The NM state portion of the Rio Puerco (non-pueblo Rio Grande to Arroyo Chico; WQS reference 20.6.4.130) is 'Not Supporting' for Total Mercury. It is currently on the state of New Mexico 2020-2022 §303(d) List with a TMDL estimated for 2022. The WWTP effluent likely enters this reach. The facility DMR data indicate that the effluent has measured a maximum value of 0.0014 mg/l (1.4 ug/l) and an average value of 0.0003 mg/l (0.3 ug/l) over the last three years. 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. Factoring for dilution is prohibited for bioaccumulative pollutants such as mercury.

Total Mercury is evaluated for RP based on the Total Mercury status of the NM state portion of the Rio Puerco and the monitoring data now available from the previous permit cycle. 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:

Instream concentration = ((FQa × Ca) + (Qe × Ce × 2.13)) ÷ (FQa + Qe) = ug/L

Where:

Ce is the average effluent concentration, 0.3 ug/l.
Ca is the geometric mean ambient concentration upstream of discharger, 0 ug/L
Qe is the effluent flow rate, 0.59 cfs (0.38 MGD)
Qa is the 4Q3 flow rate, 0 cfs (Intermittent water body)
F is the fraction of stream allowed for mixing, 1.0

Parameter	PLWQS, (ug/L)	PIWQS, (ug/L)	NMWQS, (ug/L)	Effluent Conc., (ug/L)	Calculated Instream Concentration, (ug/L)	RP Excursion
Total Mercury	0.0011 (1.1 ng/L); Wildlife Habitat	0.0011 (1.1 ng/L); Wildlife	0.77; Wildlife Habitat	0.3 (averaged from 38 data points)	0.639	Yes (PLWQS, PIWQS)

To implement the WQS for the intermittent receiving stream, the end-of-pipe discharge will have to meet applicable standards.

In the previous permit a monitoring frequency of 1/Two Months was established for Total Mercury to evaluate its impact on the water body given that it is classified as 'Not Supporting' for the pollutant downstream. Based on that data, the EPA proposes implementing a limit for Total Mercury at 0.0011 ug/L daily maximum, along with the mass limit calculated using same method as for TSS:

Daily maximum loading = 0.0000011 mg/l * 8.34 (lbs)(l)/(mg)(MG) * 0.38 MGD = 0.00000348612 lbs/day (1.58 mg/day)

A compliance schedule of three years from the permit effective date is included for the newly established Total Mercury limit. A monitoring frequency is proposed at 1/Week by grab sample, as recommended by NMIP IV.N.4. The proposed limits and monitoring schedule will be reevaluated once a Total Mercury TMDL is issued for the downstream NM state portion of Rio Puerco (non-pueblo Rio Grande to Arroyo Chico; WQS reference 20.6.4.130).

iv. TOTAL DISSOLVED SOLIDS (TDS)

The Pueblo of Laguna WQS for 'Primary Human Contact/Ceremonial' use state that standards specific to this use are in 'Appendix V: Tables for Various Designated Uses, Table 1: Human Health Criteria', which state a standard for "Solids Dissolved and Salinity" of 250,000 ug/L (250 mg/L).

The Pueblo of Isleta WQS state a general standard for 'Salinity / Mineral Quality (total dissolved solids, chlorides, and sulfates)' of "Existing mineral quality shall not be altered by municipal, industrial, and instream activities, or other waste discharges so as to interfere with the designated or attainable uses for a water body. An increase of more than 1/3 over naturally-occurring levels shall not be permitted."

The New Mexico State segment specific (20.6.4.130 NMAC) WQS state that for mean monthly flows above 100 cfs, the monthly average concentration for TDS is l,500 mg/L or less. However, the design flow rate for this facility is only 0.38 mgd (0.59 cfs).

The previous permit increased TDS monitoring frequency to 1/Quarter and implemented WET testing to consider potential impact on aquatic life. DMR data indicate that the facility passed all WET testing of its effluent over the course of the previous permit cycle (4 tests conducted: 1 chronic, 3 acute).

Form 3510-2A of the permit renewal application lists a maximum of 4,840 mg/L and average of 3,035 mg/L TDS effluent concentration. The last three years of DMR data indicate a TDS maximum of 4,840 mg/L and average of 2,389 mg/L effluent concentration. Water body values listed for the intermittent Rio Puerco based on gauge USGS-08334000 show a TDS geometric mean ambient concentration upstream of the discharger of 1,239 mg/L (3/2004 – 9/2004) when the stream is flowing.

In discussions with the permittee and the local public water supply (PWS) it was found that the drinking water supplied to the Rio Puerco WWTP is obtained by treating high-TDS well water with a reverse osmosis (RO) filtration system. Their most recent raw well water TDS measurement found a concentration of 2,266 mg/L that the PWS then treated down to 280 mg/L before distribution. The RO system produces a concentrated brine wastewater byproduct with an approximate TDS concentration of 4,000 mg/L which is discharged into the sewer system where it then enters the Rio Puerco WWTP system. This concentrated brine is believed to be the main contributer of TDS to the WWTP and its removal from the waste stream would likely resolve the high TDS concentrations in the permitted discharge.

Certain industrial discharge practices can interfere with the operation of POTWs, leading to the discharge of untreated or inadequately treated wastewater into rivers, lakes, and other waters of the United States. A discharge that causes “interference” inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use, or disposal and therefore causes a violation of any requirement of the POTW's NPDES permit. Some pollutants are not amenable to biological wastewater treatment at POTWs and can pass through the treatment plant untreated. This “pass through” of pollutants affects the receiving water and might cause fish kills or other deleterious effects. Under the National Pretreatment Program’s General Prohibitions [40 CFR 403.5(a)(1)] and Specific Prohibitions [40 CFR 403.5(b)], both of which apply to each industrial user introducing pollutants into a POTW whether or not the industrial user is subject to other national pretreatment standards or any national, state, or local pretreatment requirements, no industrial user may introduce into a POTW any pollutant(s) that cause pass through or interference. In this WWTP’s case salt buildup accelerates metallic corrosion, inhibits biology at high level, and can cause effluent TDS violation. Pretreatment can include a lined evaporation pond to manage the concentrated brine and prevent its addition to the permitted facility’s waste stream.

TDS Reasonable Potential:

Instream concentration = ((FQa × Ca) + (Qe × Ce × 2.13)) ÷ (FQa + Qe) = mg/L

Where:

Ce is the average effluent concentration, 2,389 mg/l.
Ca is the geometric mean ambient concentration upstream of discharger, 1,239 mg/L
Qe is the effluent flow rate, 0.59 cfs (0.38 MGD)

Qa is the 4Q3 flow rate, 0 cfs (Intermittent water body)
F is the fraction of stream allowed for mixing, 1.0

Parameter	PLWQS, (mg/L)	PIWQS, (mg/L)	Effluent Conc., (mg/L)	Ambient Conc. (mg/L)	1/3 Increase Ambient, (mg/L)	Calculated Instream Concentration, (mg/L)	RP Excursion
TDS	250	Less than 1/3 increase from background	2,389 (avg. from 12 data points)	1,239 (3/2004 – 9/2004)	1,611	5,089	Yes (PLWQS, PIWQS)

Due to the intermittent nature of the receiving stream, implementing the WQS will require the discharge to meet applicable standards at end-of-pipe.

In the previous permit a monitoring frequency of 1/Quarter was established for Total Dissolved Solids along with WET testing to evaluate its impact on the water body given the high concentrations measured in the discharge. Based on that data, the EPA proposes implementing an end-of-pipe limit for Total Dissolved Solids at 250 mg/L daily maximum, along with the mass limit calculated using the same method as for TSS:

Daily maximum loading = 250 mg/l * 8.34 (lbs)(l)/(mg)(MG) * 0.38 MGD = 792.3 lbs/day

The monitoring frequency for Total Dissolved Solids is proposed to continue at 1/Quarter by grab sample. This TDS limit will also be protective of the downstream Pueblo of Isleta WQS TDS criteria prohibiting increases "more than 1/3 over naturally-occurring levels". A compliance schedule of three years from the permit effective date is proposed for the newly established TDS limit.

3) MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require that permits 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)). For consistency, the monitoring frequencies are the same as those used by EPA R6's Implementation Procedure for NM, taking into account the nature of the facility and its design flow. A monitoring frequency of 2/Month for BOD and TSS, 5/Week for pH, 1/Week for TRC, and 1/Quarter for TDS from the previous permit are proposed to be continued in the draft permit. A frequency of 5/Month for E. coli and 4/Month for Enterococci is proposed to meet the sampling basis for the Pueblo of Laguna and Pueblo of Isleta WQS. A monitoring frequency of 1/Week is proposed for Total Mercury based on the NMIP.

4) WHOLE EFFLUENT TOXICITY (WET) TESTING

Based on the information described in the EPA Permit Application (i.e, Form 3510-2A) received May 25, 2021, the facility effluent has low flow volume, BOD and TSS concentrations. However, its maximum and average TDS concentrations are 4,840 mg/L and 3,035 mg/L, respectively. EPA is concerned that these TDS concentrations are high and could potentially have detrimental effects on the aquatic life. The previous permit increased TDS monitoring frequency to 1/Quarter and implemented WET testing to consider its potential impact on aquatic

life. DMR data indicate that the facility passed all WET testing of its effluent over the course of the previous permit cycle (4 tests conducted: 1 chronic, 3 acute). The draft permit proposes a TDS limit of 250 mg/L and retaining the WET testing, described below, as a precautionary measure.

For consistency, WET permit procedures are the same as those contained in the March 2012, Procedures for Implementing NPDES Permits in New Mexico (NMIP). Table 11 of Section V of the NMIP outlines the type of WET testing for different types of discharges. The design flow of the facility is 0.38 MGD. The 4Q3 of the receiving water, an intermittent waterbody, is zero cfs. Based on the nature of the discharge, POTW; the design flow, 0.38 MGD; the nature of the receiving water, intermittent; and the critical dilution, 100%, Table 11 provides that the WET test to be a Chronic (7-day) bio-monitoring using Ceriodaphnia dubia (water flea) and Pimephates promelas (flathead minnow). In addition, Table 11 directs that the first test be conducted in the first year of the permit, and if the chronic test passes, acute (48-hr) bio-monitoring with Daphnia pulex (water flea) would be required for remaining term of the permit at 1 per year frequency. The test series will be 0% (control), 32%, 42%, 56%, 75%, and 100%.

VI. FACILITY OPERATIONAL PRACTICES

A. SEWAGE SLUDGE

The sludge produced at the facility is discharged into a large lagoon for aerated treatment. The lagoon is designed for 10 years plus disposal.

B. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute or continue programs directed towards pollution prevention. The facility shall institute or continue programs to improve the operating efficiency and extend the useful life of the facility.

C. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The treatment plant has no non-categorical Significant Industrial User's (SIU) and no Categorical Industrial User's (CIU). The EPA has tentatively determined that the permittee will not be required to develop a full pretreatment program. However, general pretreatment provisions have been required. The facility is required to report to EPA, in terms of character and volume of pollutants any significant indirect dischargers into the POTW subject to pretreatment standards under §307(b) of the CWA and 40 CFR Part 403.

D. OPERATION AND REPORTING

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility's discharge on a regular basis; and report the results quarterly. Reporting requirements and the requirement of using EPA-approved test procedures (methods) for the analysis and quantification of pollutants or pollutant parameters are contained in 40 CFR 122.41(l) and 40 CFR 122.21 (e), respectively. All Discharge Monitoring Reports (DMRs) shall

be electronically reported effective December 21, 2016 per 40 CFR 127.16. The monitoring results will be available to the public.

VII. 303(d) LIST

The Rio Puerco is approximately a half mile from the outfall. The Rio Puerco is under joint jurisdiction of NM State, Laguna Pueblo, and Isleta Pueblo. Sections of the Rio Puerco under the jurisdiction of NM state are protected under 20.6.4.130 NMAC.

The New Mexico jurisdiction of the river, Rio Puerco (non-pueblo Rio Grande to Arroyo Chico), is impaired for E. coli and Total Mercury. It is currently on the state of New Mexico 2020-2022 §303(d) List with a TMDL estimated for 2022. The WWTP effluent likely enters this reach.

VIII. ANTIDEGRADATION

The draft permit is protective of the receiving water and further downstream waters and under the jurisdiction of the State, the Pueblo of Laguna, and the Pueblo of Isleta. There is no evidence based on available information that the discharge from the facility degrades existing uses.

IX. 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 concentration limit and/or monitoring frequency for E. coli / Enterococci, TRC, DO, TDS, and Total Mercury have been revised/added in the draft permit to protect designated uses.

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent Bernalillo County, NM listing on the US Fish and Wildlife Service IPaC website as of 06/14/2021, http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action, five species (Yellow-billed Cuckoo, Southwestern willow flycatcher, Mexican spotted owl, Rio Grande silvery minnow and New Mexico meadow jumping mouse) in Bernalillo County are listed as Endangered or Threatened.

The yellow-billed cuckoo is a Neotropical migrant bird that winters in South America and breeds in North America. The yellow-billed cuckoo has been listed as endangered. The primary cause of loss and degradation of yellow-billed cuckoo is the loss and degradation of riparian breeding habitat, which is believed to have caused the declines in the distribution and abundance of the species Conversion to agriculture and other land uses, urbanization, dams and river flow management, stream channelization and bank stabilization, and livestock grazing are the causes of riparian habitat losses. The permit does not authorize activities that may cause destruction of the yellow-billed cuckoo habitat, and issuance of the permit will have no effect on this species.

Southwestern Willow Flycatchers habitat occurs in riparian areas along streams, rivers, and other wetlands where dense willow, cottonwood, buttonbush and arrow weed are present. The primary reason for decline is the reduction, degradation and elimination of the riparian habitat. Other reasons include brood parasitism by the brown headed cowbird and stochastic events like fire and floods that destroy fragmented populations. The receiving water is an intermittent stream which runs only due to rain events, and does not provide suitable habitat for the species. The permit does not authorize activities that may cause destruction of the flycatcher habitat, and issuance of the permit will have no effect on this species.

Research of available material finds that the primary cause for the population decreases leading to threatened status for the Mexican Spotted Owl is destruction of habitat. No pollutants are identified which might affect species habitat or prey species and are not limited by the permit. Catastrophic fires and elimination of riparian habitat also were identified as threats to species habitat. The NPDES program regulates the discharge of pollutants and does not regulate forest management practices and agricultural practices, which contribute to catastrophic fires and elimination of riparian habitat, and thus, species habitat. The issuance of this permit is found to have no impact on the habitat of this species.

The jumping mouse is a small, nocturnal, solitary mammal and an obligate riparian subspecies. Its historical distribution likely included riparian wetlands along streams in the Sangre de Cristo and San Juan Mountains from southern Colorado to central New Mexico, including the Jemez and Sacramento Mountains and the Rio Grande Valley from Española to Bosque del Apache National Wildlife Refuge, and into parts of the White Mountains in eastern Arizona. Ongoing and future habitat loss is expected to result in additional extirpations of more populations. Research indicates that the primary sources of past and future habitat losses are from grazing pressure (which removes the needed vegetation) and water management and use (which causes vegetation loss from mowing and drying of soils), lack of water due to drought (exacerbated by climate change), and wildfires (also exacerbated by climate change). Additional sources of habitat loss are likely to occur from scouring floods, loss of beaver ponds, highway reconstruction, coal-bed methane development, and unregulated recreation. The issuance of this permit is found to have no impact on the habitat of this species.

The Rio Grande silvery minnow is a schooling species with reproductive behavior similar to that of other plains river fishes. Numerous individuals congregate during spawning, and these events may continue over several days or possibly weeks. The Rio Grande silvery minnow occupies a variety of habitats in low-gradient, large streams with shifting sand or silty bottoms. During periods of zero flow it is suspected that they survive in areas where irrigation return flows re-enter the river, in the pools formed by water leaking through the gates of the diversion dams, and in the irrigation ditches and drains. Some minnows probably survive in the reaches of streams above the diversions where their offspring can repopulate downstream reaches when conditions permit.

Threats to the species include dewatering, channelization and regulation of river flow to provide water for irrigation; diminished water quality caused by municipal, industrial, and agricultural discharges; and competition or predation by introduced non-native fish species. The discharge is to an intermittent stream about 28 miles from the Rio Grande, and is unlikely to contribute

pollutants to the Rio Grande. The proposed action does not modify Rio Grandes river flow. Therefore, no effect on the species is expected.

Based on the information available to EPA, that the reissuance of this permit will have *no effect* on these federally listed threatened or endangered species.

XI. 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.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if State/Tribal Water Quality Standards are promulgated or revised. In addition, if either the State and/or Tribe 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.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. CERTIFICATION

EPA has drafted the permit in accordance with state Pueblo of Laguna WQS, which were approved July 19, 2017. EPA has drafted the permit and will provide copies for inspection to all affected downstream States/Tribes for comments. EPA will also send a draft permit and a draft public notice to the District Engineer, Corps of Engineers, Regional Director of the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service prior to the publication of that notice.

XV. FINAL DETERMINATION

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

XVI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Forms 2A and 2S received on May 25, 2021, and a revised version on June 23, 2021.

B. 40 CFR CITATIONS

Citations to 40 CFR Sections 122, 124, 125, 133, 136

C. MISCELLANEOUS

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

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

D. CORRESPONDANCE

Bill Baker, New Mexico H20 LLC, emailed Quang Nguyen, EPA, on 05/25/2021 with permit renewal application forms 2A and 2S for Rio Puerco WWTP.

Matias Fernandez, EPA, received Rio Puerco WWTP application from Quang Nguyen, EPA, on May 27, 2021. Quang Nguyen, EPA, emailed Bill Baker, New Mexico H20 LLC, that same day to confirm receipt of Rio Puerco WWTP permit application and inform him that Matias Fernandez, EPA, would be processing the permit.

Matias Fernandez, EPA, called Quang Nguyen, EPA, on 06/07/2021 for advice on the proper development of the permit.

Matias Fernandez, EPA, determined the permit application to be administratively incomplete on 06/07/2021.

Matias Fernandez, EPA, emailed Bill Baker, New Mexico H20 LLC, on 06/14/2021 with the signed letter of incompleteness for the Rio Puerco WWTP application. Bill Baker replied the same day asking about the necessity of providing a topographic map and flow diagram. Matias Fernandez responded reaffirming. Bill Baker responded confirming that he would provide requested material by 06/25/2021.

Bill Baker, New Mexico H20 LLC, emailed Matias Fernandez, EPA, on 06/23/2021 with the previously requested revised application, topographic map, and line drawing of the facility. The revised application was deemed administratively complete.

Matias Fernandez, EPA, emailed Quang Nguyen, EPA, on 06/29/2021 for advice on the proper development of the Total Mercury section of the permit. Quang Nguyen, EPA, responded the same day.

Matias Fernandez, EPA, called Maria Okpala, EPA, on 06/30/2021 for advice on the proper development of the Total Dissolved Solids section of the permit.

Matias Fernandez, EPA, called Nikki Woodward, Pueblo of Laguna Environmental and Natural Resources Department, on 07/08/2021, 07/09/2021, and spoke on 07/12/2021. Discussed application of TDS criteria in Pueblo of Laguna WQS to the permit. Emailed with additional information on 07/12/21. Nikki Woodward emailed Diane Evans, EPA, (cc Matias Fernandez) for advice on 7/12/2021.

Matias Fernandez, EPA, emailed Nikki Woodward, Pueblo of Laguna Environmental and Natural Resources Department, on 07/19/2021 requesting clarification on status of TDS criteria for Pueblo of Laguna.

Matias Fernandez, EPA, emailed Bill Baker, New Mexico H20 LLC, on 07/21/2021 requesting additional information regarding facility's TDS values. Bill Baker replied with detailed information of the facility TDS values. Matias Fernandez replied.

Matias Fernandez, EPA, emailed Ray Dimas, Route 66 Casino PWS, on 07/28/2021 requesting contact information to ask about the PWS TDS situation. Ray Dimas replied and called the next day (07/29/2021) with detailed information about the PWS TDS.