NPDES PERMIT NO. NM0030864
FACT SHEET

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

APPLICANT

Ranchland Utility Company
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ISSUING OFFICE

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PREPARED BY

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DATE PREPARED

August 2, 2018

PERMIT ACTION

Renewal of a permit previously issued on June 14, 2013, with an effective date of August 1, 2013, and an expiration date of July 31, 2018.

RECEIVING WATER – BASIN

Canada del Rancho to Arroyo Hondo to Cienega Creek to Santa Fe River to Rio Grande

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
MQL	Minimum quantification level
O&G	Oil and grease
POTW	Publicly owned treatment works
RP	Reasonable potential
SS	Settable 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 June 14, 2013, with an effective date of August 1, 2013, and an expiration date of July 31, 2018, are as follow:

1. pH monitoring has been changed from 1/week to 5/week as per NMIP.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility (Latitude 35° 35' 30" North and Longitude 106° 01' 30" West) is located at 146 Ave. del Sur Road, Section 30 Santa Fe County, New Mexico.

Under the Standard Industrial Classification (SIC) Code(s) 4952, the applicant currently operates a private wastewater treatment plant treating domestic waste only. Two lift stations bring the influent into the headworks which consist of an auger for grit removal. The grit removed is taken to the Rio Rancho landfill for final disposal. From the headworks, flow continues to the Biolac basin which is a synthetically lined basin with wave-oxidation fine bubble diffusers. The Biolac system uses moving aeration chains which improves the mixing efficiency of the basin. From the Biolac basin, flow enters one of two circular clarifiers, after this the flow travels to the discfilter for polishing. Flow then goes through the UV system for disinfection. Then it is discharged through a Parshall flume to a holding pond where it is later used for irrigation on land application sites located within the Rancho Viejo development area (New Mexico State Permit No. DP-1164). The effluent is discharged to Canada del Rancho during the winter months when irrigation is not necessary (December, January, February). The system has a design flow capacity of 0.4 MGD currently serving about 5,000 people. A private contractor hauls digested sludge to a septage/sludge receiving station operated by the City of Santa Fe WWTF.

III. EFFLUENT CHARACTERISTICS

Data submitted in Form 2A is as follows:

Parameter	Max.	Avg.
	(mg/l unless noted)	
Flow (MGD)	0.14	0.14
Temperature, winter, °C	8.6	N/A
Temperature, summer, °C	20.6	N/A
pH, minimum, standard units (su)	7.1	N/A
pH, maximum, standard units (su)	7.76	N/A
Biochemical Oxygen Demand, 5-day (BOD_5)	15	15
Total Suspended Solids (TSS)	15	15
Fecal Coliform	0	0
Ammonia (as N)	< 1.0	< 1.0
Dissolved Oxygen	8.0	7.0
Total Kjeldahl Nitrogen (TKN)	1.5	1.4
Phosphorus (Total)	12	11
Total Dissolved Solids (TDS)	700	460
Nitrate Plus Nitrite Nitrogen	10	9.2
Oil and Grease	< 9.6	< 9.4

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.

An incomplete permit application was received on April 2, 2018. The completed permit application was received on October 3, 2018. 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

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_5, and percent removal for each. Water quality-based effluent limitations are established in the proposed draft permit for *E. coli* bacteria, pH and TRC.

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.

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 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_5, TSS and pH. BOD_5 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_5 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:

Loading in lbs/day = pollutant concentration in mg/l * 8.345 (lbs)(l)/(mg)(MG) * design flow in MGD

30-day average BOD_5/TSS loading = 30 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.4 MGD = 94 lbs/day
7-day average BOD_5/TSS loading = 45 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.4 MGD = 141 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_5	94	141	30	45
BOD_5, % removal (*1)	≥ 85	---	---	---
TSS	94	141	30	45
TSS, % removal (*1)	≥ 85	---	---	---
pH	N/A	N/A	6.0 to 9.0 s.u.	

*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 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.

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 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. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC amended through August 11, 2017). The discharge is to the Canada del Rancho (ephemeral stream), in segment 20.6.98 of the Rio Grande Basin (State of New Mexico Standards for Interstate and Intrastate Source Waters). Designated uses of 20.6.4.98 NMAC are livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact.

4. 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 WQS that are more stringent than effluent limitation guidelines are as follows:

a. pH

For marginal warmwater aquatic life, criteria for pH is between 6.6 and 9.0 s.u. pursuant to 20.6.4.900.H.6 NMAC.

b. Bacteria

State WQS for *E. coli* bacteria, listed in 20.6.4.900.D NMAC for primary contact, require the monthly geometric mean to be 126 colony forming units (cfu)/100 ml or less; single sample 410 cfu/100 ml or less. EPA has included these limitations and monitoring requirements for *E. coli* similar to the last permit. Bacteria may be reported as either cfu/100 ml or most probable number (MPN).

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. There are no toxics that need to be placed in the draft permit except for TRC described below.

d. TRC

The facility uses UV to treat bacteria. Consistent with all POTWs in the State of NM; however, TRC limitations are placed in permits to provide discharge limitations in the event chlorine is used as backup bacteria disinfection treatment and/or cleaning and disinfection of process equipment and/or used to control filamentaceous algae. The previous permit established water quality-based effluent limitations for TRC of 11 µg/l and that limit will be continued in the draft permit with the conditions above stated as to when the facility needs to provide monitoring for TRC.

5. 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). The design flow is 0.4 MGD; however, the last permit had weekly monitoring frequencies for most pollutants. This draft permit will continue the same monitoring frequency of the last permit since it complied with all limits. The only change will be pH monitoring frequency from 1/week to 5/week to follow the NMIP.

Parameter	Frequency	Sample Type
Flow	Continuous	Totalized
pH	5/week	Instantaneous Grab
BOD_5	1/week	Composite
TSS	1/week	Composite
BOD_5 & TSS % Removal	1/week	Calculation
TRC	Daily	Instantaneous Grab
E. coli bacteria	1/week	Grab

D. WHOLE EFFLUENT TOXICITY

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. Table 11 of Section V of the NMIP outlines the type of WET testing for different types of discharges.

Based on the nature of the discharge; wastewater treatment plant, the production flow; more than 0.1 MGD but less than 1.0 MGD, the nature of the receiving water: ephemeral, and the critical dilution; 100%, the NMIP directs the WET test to be a 48hr acute test using *Daphnia Pulex*. The required monitoring frequency is once every two years.

The last permit had a compliance schedule with a WET effluent limitation for *Pimephales promelas* effective two years after the last PED (permit effective date). According to the NMIP, upon reaching the effective date of the WET limit, a testing frequency of once per year is required for the next five-years. Therefore, the WET effluent limit will be maintained in this draft permit cycle.

Available data from the previous permit cycle indicates there is no reasonable potential for WET since all the results passed survival testing requirements for *Daphnia pulex*.

The test series will be maintained at 0% (control), 32%, 42%, 56%, 75%, and 100%. The permittee shall limit and monitor discharge(s) as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS	MONITORING REQUIREMENTS	
WET TESTING (48-HR Acute Static Renewal) (*1, *2)	VALUE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Daphnia pulex (years: 1st, 3rd)	Report	Once/ Two Years	24-Hr Composite

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS	MONITORING REQUIREMENTS	
WET LIMIT (48-HR Acute Static Renewal-NOEC Freshwater (*1, *2)	VALUE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Pimephales promelas	100%	Once/Year	24-Hr Composite

*1 Monitoring and reporting requirements begin on the effective date of this permit. Compliance with the Whole Effluent Toxicity limitations is required on the effective date of the permit See PART II, Whole Effluent Toxicity testing requirements for additional WET monitoring and reporting conditions.

*2 See Part II, Whole Effluent Toxicity testing requirements for specifics and shall occur between November 1 and April 30.

VI. TMDL REQUIREMENTS

Ranchland Utility Company discharges into ephemeral stream Canada del Rancho (Arroyo Hondo to outfall, 20.6.98). Neither of the uses have been assessed according to the "2016-2018 State of New Mexico Integrated Clean Water Act Section 303 (d) / 305 (b) Report." The permit has a standard reopener clause that would allow the permit to be changed if at a later date additional requirement 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. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at USFWS, Southwest Region 2 website, http://www.fws.gov/endangered/, three species in Santa Fe are listed as endangered or threatened. The Southwestern willow flycatcher (*Empidonax traillii*), is listed as endangered. The Mexican spotted owl (*Strix occidentalis lucida*) and Yellow-billed Cuckoo (*Coccyzus americanus*), are listed as threatened.

The Southwestern willow flycatcher (*Empidonax traillii extimus*) breeds in dense riparian habitats in southwestern North America, and winters in southern Mexico, Central America, and northern South America. Its breeding range includes far western Texas, New Mexico, Arizona, southern California, southern portions of Nevada and Utah, southwestern Colorado, and possibly extreme northern portions of the Mexican States of Baja California del Norte, Sonora, and Chihuahua. The subspecies was listed as endangered effective March 29, 1995. Approximately 900 to 1100 pairs exist.

Yellow-billed Cuckoos (*Coccyzus americanus*) are fairly large, long, and slim birds. The mostly yellow bill is almost as long as the head, thick and slightly downcurved. They have a flat head, thin body, and very long tail. Wings appear pointed and swept back in flight. Yellow-billed Cuckoos are warm brown above and clean whitish below. Their blackish face mask is accompanied by a yellow eyering. In flight, the outer part of the wings flash rufous. From below, the tail has wide white bands and narrower black ones.

Unlike most owls, Mexican spotted owls (*Strix occidentalis lucida*) have dark eyes. They are an ashy-chestnut brown color with white and brown spots on their abdomen, back and head. Their brown tails are marked with thin white bands. They lack ear tufts. Young owls less than 5 months old have a downy appearance. Females are larger than males. The primary threats to its population in the U.S. (but likely not in Mexico) have transitioned from timber harvest to an increased risk of stand-replacing wildland fire. Recent forest management now emphasizes sustainable ecological function and a return toward pre-settlement fire regimes, both of which are more compatible with maintenance of spotted owl habitat conditions than the even-aged management regime practiced at the time of listing.

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 determined that the reissuance of this permit will have "*no 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. EPA determines that Items 1 and 2 results 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.

IX. 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.

X. 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.

XI. VARIANCE REQUESTS

None

XII. CERTIFICATION

The permit is in the process of certification by the State Agency following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer of COE, to the Regional Director of FWS and to the National Marine Fisheries Service prior to the publication of that notice.

XIII. FINAL DETERMINATION

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

XIV. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Form 2A received April 2, 2018 and additional information received on October 3, 2018.

B. 40 CFR CITATIONS

Sections 122, 124, 125, 133, 136

C. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, effective August 11, 2017.

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

NPDES Compliance Evaluation Inspection, Ranchland Utility Company, NM0030368, May 4, 2018.