

NPDES PERMIT NO. NM0030872

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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ISSUING OFFICE

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DATE PREPARED

November 1, 2018

PERMIT ACTION

Renewal of a permit previously issued on September 25, 2013, with an effective date of November 1, 2013, and an expiration date of October 31, 2018.

RECEIVING WATER – BASIN

South Fork Las Cruces Arroyo, NMAC 20.6.4.98

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 25, 2013, with an effective date of November 1, 2013, and an expiration date of October 31, 2018, are as follow:

- New limit for WET has been established.
- Monitoring frequency for thallium and bis (2-ethylhexyl) phthalate has been changed to monthly.
- New limit for DO has been established.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility (Outfall 001: Latitude 32° 19' 48.8" North and Longitude 106° 42' 46.4" West per 2014 Compliance Evaluation Inspection) is located at 5150 E. Lohman Avenue, City of Las Cruces, Dona Ana County, New Mexico.

Under the SIC code 4952, the applicant (municipality) operates East Mesa Water Reclamation Facility, which has a design flow rate of 1.0 MGD serving a population of 3,152 approximately. The plant performs as high as advanced level of treatment; effluent is ultraviolet-disinfected before discharging (via Outfall 001) to South Fork Las Cruces Arroyo, an intermittent stream, thence to Rio Grande River. Flow is split to either a 2 million gallon holding tank for reuse or discharges via the outfall. The facility intermittently discharges when reuse water is not needed. Part of the effluent is reused for irrigation under a ground water discharge permit. Sewage sludge is transported by tanker to Jacob Hand WWTP for further treatment. A map of the facility is attached.

III. EFFLUENT CHARACTERISTICS

Data submitted in Form 2A for the WWTP is as follows:

Parameter	Max (mg/l unless noted)	Avg. (mg/l unless noted)
pH, minimum, standard units (su)	7.0	NA
pH, maximum, standard units (su)	7.1	NA
Flow (MGD)	0.52	0.43
Temperature (C), winter	16	18.23
Temperature (C), summer	29.3	26.47
Biochemical Oxygen Demand, 5-day (BOD ₅), lb/day	8.1	14
E. coli (cfu/100 ml)	1	1
Total Suspended Solids (TSS), lb/day	16.31	7.33
Ammonia (as N)	0.61	0.27
TRC	NA	NA
DO	5.98	5.73
Total Kjeldahl Nitrogen (TKN)	1.49	1.37
Nitrate + Nitrite Nitrogen	5.1	4.5
Oil & Grease	<5.7	<5.23
Phosphorus (Total)	1.99	1.96
TDS	1,160	1,048

DMRs data, from April 30, 2015 to March 31, 2018, show no exceedance during this period.

IV. REGULATORY AUTHORITY/PERMIT ACTION

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

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

V. DRAFT PERMIT RATIONALE AND 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 BOD/TSS and percent removal for each. Water quality-based effluent limitations are established in the proposed draft permit for DO, *E. coli* bacteria, pH, TRC, and thallium.

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 limits established at 40 CFR Part 133, Secondary Treatment Regulation. Pollutants with requirements 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, the same numbers as for BOD, are found at 40 CFR §133.102(b). Limits for pH are between 6-9 s.u. and are found at 40 CFR §133.102(c). Since these are technology-based requirements 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 * 8.34 (lbs)(l)/(mg)(MG) * design flow in MGD

30-day average BOD/TSS loading = 30 mg/l * 8.34 (lbs)(l)/(mg)(MG) * 1.0 MGD = 250.2 lbs/day

7-day average BOD/TSS loading = 45 mg/l * 8.34 (lbs)(l)/(mg)(MG) * 1.0 MGD = 375.3 lbs/day

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

Parameter	30-day Avg (lbs./day, unless noted)	7-day Max. (lbs./day, unless noted)	30-day Avg. (mg/L, unless noted)	7-day Max. (mg/L, unless noted)
BOD ₅	250.2	375.3	30	45
BOD ₅ , % removal ¹	≥ 85	---	---	---
TSS	250.2	375.3	30	45
TSS, % removal ¹	≥ 85	---	---	---
pH	N/A	N/A	6.0 to 9.0 s.u.	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.

3. Pretreatment Regulation

The collection system still allows for wastewater to pass to the Jacob Hands WWTF if needed, therefore this facility is covered as part of that Pretreatment Program. The facility has 1 non-categorical significant industrial user, Mountain View Medical Center. The City of Las Cruces has an approved pretreatment program covering this facility. Pretreatment language in this draft permit is the same as for Jacob Hands Wastewater Treatment Facility, NM0023311.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section

301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on Federal or State/Tribe WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State/Tribal WQS and applicable State/Tribe water quality management plans to assure that surface WQS of the receiving waters are protected and maintained or attained.

2. Implementation

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

3. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC approved on August 11, 2017). The receiving water is Southfork Las Cruces Arroyo in Waterbody Segment Code No. 20.6.4.98, intermittent waters. The stream designated uses are livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact. Since the receiving water is intermittent stream (4Q3 = 0), applicable criteria must be met at end of the pipe (outfall).

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 and the most stringent limitations are chosen as follows:

a. pH

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

b. Bacteria

The use-specific criterion for E. coli bacteria is at 206 cfu/100 ml monthly geometric mean and 940 cfu/100 ml daily maximum pursuant to 20.6.4.98.B NMAC. More stringent limits are retained for E. coli due to TMDL described below.

c. Toxics

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

All applicable facilities are required to fill out appropriate sections of the Form 2A and 2S, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to POTWs,

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

During the application review, additional data were submitted to demonstrate Sufficient Sensitive Method (SSM) requirement for pollutants that were not initially met. EPA has determined the permittee has demonstrated compliance with the SSM requirement per 40 CFR 122.21(e)(3). Information these pollutants are available upon request.

Submitted data (average values) in Part D of Form 2A are scanned against the MQL and State WQS. Pollutants with levels above the MQL and State WQS (and those with no established MQL) are analyzed for RP. For RP calculation purpose, ML/MDL values are used for results reported with less than the ML/MDL levels. The RP is determined as described in the NMIP. The attached RP calculations (spreadsheet) show there is no RP. EPA also re-evaluates the current limits for thallium and bis (2-ethylhexyl) phthalate. For thallium, reported data (<0.5 ug/L) is not sensitive to permit limit of 0.47 ug/L. Regarding to bis (2-ethylhexyl) phthalate EPA has found the followings:

Date Sampled	Date Analyzed/Reported	Dilution Factor	Result, ug/L	Note
3-23-17	4-7-17	2	31.8*	
3-23-17	4-7-17	1	41.5*	Permittee's stated: "due to leachate from the tubing of the composite sampling devise."
7-26-18	8-7-18	1	< 5	
7-26-18	8-8-18	20	431*	

*Not shown in submitted application and/or DMR; currently limited at 22 ug/L with “Grab” sample type.

Because of uncertainties for thallium and bis (2-ethylhexyl) phthalate, EPA retains limits for these parameters in the proposed permit; samples are taken monthly when discharge occurs. It is suggested thallium should be tested using EPA Method 200.9 (MDL of 0.05 ug/L) due to the current limit of 0.47 ug/L. For reconsideration, during the public notice the permittee may retest thallium (at least one analysis) using the suggested method or an approved method under 40 CFR 136.3 with a MDL/ML of 0.05 ug/L or less.

d. TRC

The facility uses UV to disinfect the effluent. However, TRC limit of 11 µg/l (for wildlife habitat 20.6.4.900.G NMAC) is retained in the draft permit **in case** chlorine based-product is used to disinfect the effluent discharging to the receiving stream.

e. DO

For marginal warmwater aquatic life (20.6.4.900.H(6) NMAC) and warmwater fishery use, criterion for DO is 5 mg/L or more. EPA establishes new limit for DO (minimum 5 mg/L) in the permit draft. According to submitted information, DO has been met; therefore, compliance schedule is not necessary.

f. Nutrients (total nitrogen and total phosphorus)

The discharge flow was about 0.18 MGD on average from 3/31/18 to 4/30/15 and goes to an intermittent stream. EPA and NMED believe monitoring of nutrients is not needed.

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). Sample frequency is based on Table 9 (page 34 of the NMIP) for design flow between 0.5 to 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	6-hr Composite
% Removal	Monthly	Calculation
TRC	Daily*	Instantaneous Grab
E. coli Bacteria	3/month	Grab
DO	5/week	Instantaneous Grab
Thallium, total	Monthly** (to ensure compliance)	Grab
Bis (2-ethylhexyl) phthalate	Monthly (to ensure compliance)	Grab

* Daily when chlorine is used as either backup bacteria control or when disinfection of plant treatment equipment is required.

** Should be tested using EPA Method 200.9.

E. WHOLE EFFLUENT TOXICITY

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. Table 11 (page 42) of the NMIP outlines the type of WET testing for different types of discharges. The receiving water (intermittent stream) has a 4Q3 of zero cfs; the CD is therefore 100%. Submitted WET data show RP exists for invertebrate species at the CD (see attached Reasonable Potential Analyzer). In this permit draft, EPA proposes WET monitoring/limit using the same species, *Ceriodaphnia dubia* (Cd) and *Pimephales promelas* (Pp), where Cd is limited at 100%.

The proposed permit requires five (5) dilutions (same as previously) 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 32%, 42%, 56%, 75% and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 100% effluent. The permittee shall limit and monitor discharge(s) as specified below:

Effluent Characteristic WET Testing (7-day Static Renewal) ¹	Discharge Limitations VALUE	Monitoring Frequency	Monitoring Type
<i>Ceriodaphnia dubia</i>	100%	1/3 months	24-hr Composite
<i>Pimephales promelas</i>	Report	1/3 months ²	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 Monitoring frequency reduction is available for Pp only: Once/3 months shall be for the first year after the permit effective date; if all the test pass, frequencies would be once/year for the remaining term. If any WET test fails, frequency returns to once/3 months for the remaining term. If eligible for frequency reduction after the first year, the permittee must request EPA before proceeding.

VI. TMDL REQUIREMENTS

The receiving water segment, South Fork Las Cruces Arroyo (20.6.4.98 NMAC) has not been assessed in 303(d) List. A monitoring for this receiving water is expected in 2021. However, the 2007 TMDL for *E. coli* is still effective for the water segment reach 20.6.4.101 (between El Paso and Las Cruces) at Rio Grande. EPA retains the limits for *E. coli* from the previous permit. The permit has a standard reopener clause that would allow the permit to be changed if at a later date additional requirements on new or revised TMDLs are completed.

VII. ANTIDEGRADATION

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

VIII. ENDANGERED SPECIES CONSIDERATIONS

According to the list updated on May 1, 2018 for Dona Ana County, NM obtained from <http://ecos.fws.gov>, there are endangered (E)/threatened (T) species that were listed in the previous permit: Least tern, Southwestern willow flycatcher and Sneed pincushion cactus. These species were determined with “no effect”. Since then, there has been 1 addition threatened species: Yellow-billed Cuckoo.

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). There has been no recovery plan for the species yet.

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 an “effect” beyond the environmental baseline on the additional listed threatened and endangered species.

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 dated April 6, 2018 and 2S dated May 29, 2018. Additional data submitted via email on May 10, May 18, September 17, 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; WQCC effective March 2, 2017; EPA approved on August 11, 2017.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2016-2018.

TMDL for the Main Stem of the Lower Rio Grande, June 11, 2007

D. MISCELLANEOUS

NMED email dated 4/25/18

Permittee's emails dated 5/10/18, 5/18/18, 5/22/18, 6/4/18, 7/16/18, 7/23/18, 10/25/18, 10/30/18