# NPDES PERMIT NO. NM0028886
# 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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**PREPARED BY**

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**DATE PREPARED**

May 1, 2018

**PERMIT ACTION**

Renewal of a permit previously issued on June 28, 2013, with an effective date of July 1, 2013, and an expiration date of June 30, 2018.

**RECEIVING WATER – BASIN**

Agua Chiquita Creek – Pecos River Basin (20.6.4.208 NMAC)

## DOCUMENT ABBREVIATIONS

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

| | |
|---|---|
| 4Q3 | Lowest four-day average flow rate expected to occur once every three-years |
| BAT | Best available technology economically achievable |
| BCT | Best conventional pollutant control technology |
| BPT | Best practicable control technology currently available |
| BMP | Best management plan |
| BOD | Biochemical oxygen demand (five-day unless noted otherwise) |
| BPJ | Best professional judgment |
| CBOD | Carbonaceous biochemical oxygen demand (five-day unless noted otherwise) |
| CD | Critical dilution |
| CFR | Code of Federal Regulations |
| cfs | Cubic feet per second |
| COD | Chemical oxygen demand |
| COE | United States Corp of Engineers |
| CWA | Clean Water Act |
| DMR | Discharge monitoring report |
| DO | Dissolved oxygen |
| ELG | Effluent limitation guidelines |
| EPA | United States Environmental Protection Agency |
| ESA | Endangered Species Act |
| FWS | United States Fish and Wildlife Service |
| mg/l | Milligrams per liter |
| ug/l | Micrograms per liter |
| lbs | Pounds |
| MG | Million gallons |
| MGD | Million gallons per day |
| NMAC | New Mexico Administrative Code |
| NMED | New Mexico Environment Department |
| NMIP | New Mexico NPDES Permit Implementation Procedures |
| NMWQS | New Mexico State Standards for Interstate and Intrastate Surface Waters |
| NPDES | National Pollutant Discharge Elimination System |
| MQL | 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 June 28, 2013, with an effective date of July 1, 2013, and an expiration date of June 30, 2018, are as follow:

- Monitoring frequency for flow and pH have been increased.
- Monitoring of DO has been established.

## II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility (Outfall 001: Latitude 32° 47' 25" North and Longitude 105° 33' 35" West) is located at 106 Assembly Creek, Sacramento, Otero County, New Mexico.

Under the SIC code 7032, the applicant privately operates Sacramento Camp & Conference Center WWTP, which has a design flow of 0.042 MGD serving seasonal occupants. The plant mainly consists of four reactor tanks treating domestic wastewater. Effluent is chlorinated before discharged via Outfall 001 to an unnamed intermittent stream, thence to Agua Chiquita Creek, thence to Rio Penasco (Segment 20.6.4.208 of the Pecos River Basin). Sewage sludge is hauled off for further treatment/disposal. 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) | 7.1 | NA |
| pH, maximum, standard units (su) | 8.7 | NA |
| Flow (MGD) | 0.013 | 0.009 |
| Temperature (C), winter | 48 | 48 |
| Temperature (C), summer | 52 | 52 |
| Biochemical Oxygen Demand, 5-day ($BOD_5$) | 14.5 | 14.5 |
| E. coli (cfu/100 ml) | 1 | 1 |
| Total Suspended Solids (TSS) | 9.88 | 9.88 |

DMRs data, from February 1, 2013 to February 1, 2018, shows two limit violations as follow:

| **Parameters** | **Date** | **30-day average value, mg/L** |
|---|---|---|
| BOD | 6/30/2015 | 44 |
| % removal for TSS | 8/30/2017 | 83.59 |

## IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water”; more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for

industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered the NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

The application was dated February 28, 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 BOD, TSS 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, 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. Previously it was permitted with 0.042 MGD for loading calculations. 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/TSS loading = 30 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.042 MGD = 10.5 lbs/day
7-day average BOD/TSS loading = 45 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.042 MGD = 15.8 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 | 10.5 | 15.8 | 30 | 45 |
| BOD, % removal[1] | ≥ 85 | --- | --- | --- |
| TSS | 10.5 | 15.8 | 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 facility is not subject to the full pretreatment program pursuant to 40 CFR 403.8. Previous general practices are retained in the permit draft.

## 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 wastewater flows from the outfall to an unnamed intermittent stream, thence to Agua Chiquita Creek, thence to Rio Penasco (Segment 20.6.4.208 of the Pecos River Basin). Consistent to the previous permit and the TMDL below, EPA retains the designated uses in this permit. The stream designated uses are livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact (20.6.4.98 NMAC). Since the 4Q3 is zero, applicable criterion must be met at point of discharge.

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

b. Bacteria

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.

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.

The facility is designated as a minor discharger, Part D of Form 2A is not applicable and the toxic pollutants are not evaluated.

d. TRC

For wildlife habitat, criteria for TRC is 11 ug/l pursuant to 20.6.4.900.G NMAC.

e. DO

For marginal warmwater aquatic life, criteria for DO is 5 mg/L or more pursuant to 20.6.4.900.H(6) NMAC. EPA requires the permittee to monitor DO once/quarter since the discharge is relatively small and "does not reach the Agua Chiquita except during storm flows," according to the TMDL.

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 less than 0.1 MGD and based on compliance history.

| Parameter | Frequency | Sample Type |
|---|---|---|
| Flow | Daily (increased from previous permit) | Instantaneous Grab |
| pH | 5/week (increased from previous permit) | Instantaneous Grab |
| $BOD_5$/TSS | Once/month | Grab |
| % Removal | Once/month | Calculation |
| TRC | 5/week | Instantaneous Grab |
| E. coli Bacteria | Once/month | Grab |

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. Because of the immediate receiving water, an intermittent stream (4Q3 = 0), the CD is 100%. WET testing species for this facility were previously: Ceriodaphnia dubia (Cd) and Pimephales promelas (Pp); the required WET tests passed in March 2018. EPA retains the WET testing in this permit draft.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations must be 32%, 42%, 56%, 75% and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 100% effluent. The permittee shall monitor discharge(s) as specified below:

| WET Testing (7-day Static Renewal)[1] | NOEC | Frequency[2] | Type |
|---|---|---|---|
| Ceriodaphnia dubia | Report | Once/permit term | Grab |
| Pimephales promelas | Report | Once/permit term | Grab |

[1] Monitoring and reporting requirements begin on the effective date of this permit. See Part II of the permit, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.
[2] The test shall take place between November 1 and April 30 during the 1st to 4th year of the permit term.

## VI. TMDL REQUIREMENTS

The receiving water segment 20.6.4.208 NMAC, Agua Chiquita (perennial portions McEwan Canyon to headwaters) is listed as impaired in the 2016-2018 303(d) List. Coldwater aquatic life and primary contact are not supported. Causes of the impairments are turbidity and E. coli.

TMDL for turbidity was approved by the EPA on September 21, 2015. According to this document (pages 39 & 40), the facility is a minor discharger ("the effluent does not reach the Agua Chiquita except during storm flows,…") and TSS have been limited, the TMDL assumes the facility does not contribute to the loading of TSS/turbidity in the stream. Therefore, WLA is not included in this TMDL. TMDL for E. coli has not yet been established so the current water quality based limitations will be maintained.

The permit has a standard reopener clause that would allow the permit to be changed if at a later date additional requirements on new/revised TMDLs or temporary standards 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, NMAC Section 20.6.4.8.A.1.

## VIII. ENDANGERED SPECIES CONSIDERATIONS

According to the list updated on February 6, 2018 for Otero County, NM obtained from http://ecos.fws.gov, there are six endangered (E)/threatened (T) species that were listed in the previous permit: Mexican spotted owl (T), Least tern (E), Sacramento prickly poppy (E), Kuenzler hedgehog cactus (E), Todsen's pennyroyal (E) and Sacramento Mountains thistle (T). These species were determined with "no effect". Since then, there have been three addition threatened/endangered species: Yellow-billed Cuckoo (T), Rio Grande Silvery Minnow (E) and New Mexico meadow jumping mouse (E).

There has been no recovery plan for 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. The moist conditions that support riparian plant communities that provide western yellow-billed cuckoo habitat typically exist in lower elevation, broad floodplains, as well as where rivers and streams enter impoundments. 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). According to Rio Grande Silvery Minnow Recovery Plan in 2010, the fish is known to occur at Rio Grande River (currently) and Pecos River (historically). Per the Recovery Outline for the mouse in June 2014, the species is endangered because of habitat loss; the main sources of the loss include grazing eliminating herbaceous vegetation, lack of

water, severe wildland fire, souring flooding, highway reconstruction, unregulated recreation, loss of beaver ponds and mowing of riparian vegetation. Because of the flow path: an unnamed intermittent stream, thence to Agua Chiquita Creek, thence to Rio Penasco, this minor discharge rate may not reach to the creek (presumably consistent to the TMDL). EPA has not found effect on the additional species caused by the discharge directly at the site and along the pathway of the receiving stream.

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 States WQS and does not increase pollutant loadings.

3. There is currently no information determining that the reissuance of this permit will have "effect" on the additional listed threatened and endangered species.

## 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 Applications Form 2A and Form 2S dated February 28, 2018; additional data submitted in Form 2A dated April 13, 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 August 11, 2017

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

TMDL for the Sacramento Mountains (Rio Hondo, Tularosa and Rio Peñasco Watersheds), EPA approved on September 21, 2015

D. MISCELLANEOUS

NMIP, March 2012

Permittee: email dated March 9, 2018

NMED: email dated May 1, 2018

Rio Grande Silvery Minnow Recovery Plan, approved January 15, 2010

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