NPDES PERMIT NO. NM0029041 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

April 14, 2017

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued July 20, 2012, with an effective date of September 1, 2012, and an expiration date of August 31, 2017. Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed in Title 40, Code of Federal Regulations, revised as of April 4, 2017.

RECEIVING WATER – BASIN

Pecos River – Pecos Basin

6. DOCUMENT ABBREVIATIONS:

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

BAT - best available technology economically achievable
BMP – best management plan
BOD_5 – five-day biochemical oxygen demand
BPJ - best professional judgment
CD – critical dilution
CFR – Code of Federal Regulations
cfs – cubic feet per second
CIU - Categorical Industrial User's
COD – chemical oxygen demand
COE – United States Corp of Engineers
CWA – Clean Water Act
DMR – discharge monitoring report
EPA – United States Environmental Protection Agency
ESA - Endangered Species Act
FC- fecal coliform
FWS – United States Fish and Wildlife Service
MGD – million gallons per day
NMAC – New Mexico Administrative Code
NMED – New Mexico Environment Department
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
SIC - standard industrial classification
SIU - Significant Industrial User's
su – standard units
SWQB – Surface Water Quality Bureau
TDS – total dissolved solids
TMDL – total maximum daily load
TOC – total organic carbon
TRC – total residual chlorine
TSS – total suspended solids
UAA – use attainability analysis
WET - whole effluent toxicity
WQCC - New Mexico Water Quality Control Commission
WWTP - wastewater treatment plant

I. CHANGES FROM THE PREVIOUS PERMIT

A. Added Net-DMR as required by the NPDES electronic reporting rule.

B. Included sufficiently sensitive EPA-approved analytical methods requirement (under 40 CFR part 136 or required under 40 CFR chapter I, subchapters N or O).

II. APPLICATION LOCATION AND ACTIVITY

As described in the application, the Village of Pecos owns and operates a POTW under the SIC Code 4952. The facility is located at 42 Lagoon Lane in San Miguel County, New Mexico.

The WWTP is a Sequencing Batch Reactor (SBR). Raw wastewater enters the plant through a three inch Par-shall Flume. A Vulcan Filter Stair Screen then removes debris by moving the debris upward by rotating the screen upwards; slowly moving the debris to the next level. Once the debris reaches the top step, it is discharged to a trash receptacle for later disposal. The influent is gravity fed to the two SBR basins by a splitter pipe which can be manually closed and opened to allow influent to either basin. In the SBR, wastewater goes through three phases of treatment. These include: react, settle and decant. During the react phase, the wastewater undergoes 168 minutes of alternate periods of anoxic mix and aeration. In the settle phase, the aerators are stopped, which allows the solids to settle out and move to the bottom. This allows the clear wastewater to stay on top. Then, the decant phase starts and the decanter removes clarified supernatant to the ultraviolet system for disinfection and then finally to outfall equipped with a diffuser. The effluent is measured by an enclosed Sparling Magnetic Flow Meter.

The WWTP has a design flow capacity of 0.15 MGD serving approximately 1500 people. The Water Quality Segment number where this facility discharges to is 20.6.4.217. The designated uses of the receiving water in Segment 20.6.4.217 are domestic water supply, fish culture, high quality cold-water aquatic life, irrigation, livestock watering, wildlife habitat and primary contact; and public water supply on the main stem of the Pecos River. The single outfall of the facility is located in the Pecos River at Latitude 35° 34' 0.17" North, Longitude 105° 40' 20.6" West.

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received March 17, 2017 are presented below in table 1. In addition, A summary of the available pollutant data taken from the Enforcement and Compliance History Online (ECHO) website from September 1, 2012 through December 31, 2016 show exceedance of 7-day average TSS limit on February 28, 2014:

Table 1: Effluent Data

Parameter	Maximum	Average
Flow, million gallons/day (MGD)	0.09	0.07
Temperature, winter (°C)	NA	7.0

Parameter	Maximum	Average
Temperature, summer (°C)	NA	21.0
pH, minimum, standard units (su)	7.0	N/A
pH, maximum, standard units (su)	7.9	N/A
Biochemical Oxygen Demand, 5-day (BOD_5, mg/l)	13.0	6.20
E. coli (#bacteria/100 ml)	31.0	4.0
Total Suspended Solids (TSS, mg/l)	28.0	6.6
Ammonia (NH_3, mg/l	0.0	0.0
Chlorine, Total Residual (TRC, mg/l)	0.0	0.0
Dissolved Oxygen (DO, mg/l)	NA	NA
Total Kjeldahl Nitrogen (TKN, mg/l)	1.0	1.0
Nitrate plus Nitrite Nitrogen (mg/l)	1.98	1.98
Oil & Grease (mg/l)	9.33	9.33
Phosphorus (mg/l)	1.8	1.8
Total Dissolved Solids (TDS, mg/l)	399.0	399.0

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.

The facility submitted a complete permit application on March 17, 2017. It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The existing permit is administratively continued until this permit is issued.

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 require that 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_5 and TSS. 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

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_5, 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_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 are found at 40 CFR §133.102(a) (1). TSS limits; also 30 mg/l for the 30-day average and 45 mg/l for the 7-day average, are found at 40 CFR §133.102(b). ELG's for pH are between 6-9 su 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

According to the renewal application, the WWTP has the design capacity of 0.15 MGD. Based on 40 CFR §122.45(f), all pollutants limited in permits shall have limitations expressed in terms of mass. The loading limits are established in the draft permit for BOD_5 and TSS as follows:
7-day average BOD_5 loading = 45 mg/l * 8.345 lbs./gal * 0.15 MGD = 56.329 lbs./day
30-day average TSS/BOD loading = 30 mg/l * 8.345 lbs./gal * 0.15 MGD = 37.553 lbs./day

Table 2. Technology-Based Effluent Limits

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS	DISCHARGE LIMITATIONS	DISCHARGE LIMITATIONS	DISCHARGE LIMITATIONS
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD_5	38 lbs./day	56 lbs./day	30 mg/L	45 mg/L
TSS	38 lbs./day	56 lbs./day	30 mg/L	45 mg/L
pH	N/A	N/A	6.0 s.u. minimum	9.0 s.u. maximum

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, effective June 5, 2013). The facility discharges into the Pecos River in segment number 20.6.4.217 of the Pecos Basin. The designated uses of the receiving water are domestic water supply, fish culture, high quality cold-water aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

The CWA sections 101(a) (2) and 303(c) require water quality standards to provide, wherever attainable, water quality for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water, functions commonly referred to as “fishable/swimmable” uses. EPA's current water quality regulation effectively establishes a rebuttable presumption that “fishable/swimmable” uses are attainable and therefore should apply to a water body unless it can be demonstrated that such uses are not attainable.

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. BACTERIA

Stream segment specific (20.6.4.217 NMAC) WQS for E. coli bacteria is 126 cfu/100 ml daily monthly geometric mean and 235 cfu/100 ml daily maximum. These limits are identical to the previous permit and are continued in the draft permit.

b. pH

Stream segment specific (20.6.4.217 NMAC) WQS for pH, 6.6 to 8.8 su, are more restrictive than the technology-based limits presented earlier but are identical to the previous permit and will be continued in the draft permit.

c. 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 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, 2S or 2E to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to 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 facility is designated as a minor, and does not need to fill out the expanded pollutant testing section Part D of Form 2A. The amount of information required for minor facilities was limited to specific sections of these forms, because they are unlikely to discharge toxic pollutants in amounts that would impact state water quality standards. 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, 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.

Due to the limited information required by the application, the Agency has determined that no reasonable potential exists for this discharge to violate applicable NMWQS for the protection of domestic water supply, fish culture, high quality cold-water aquatic life, irrigation, livestock watering, wildlife habitat and primary contact; and public water supply on the main stem of the Pecos River, beyond pH, E. coli, and the use of chlorine for disinfection or clean purpose.

The SWQB of the NMED provided the 4Q3; 17.9 cfs (11.57 MGD), upstream of the facility on the Pecos River. Based on the 4Q3 and the effluent flow, 0.15 MGD (0.232 cfs), the CD for the facility is calculated as follows:

$CD = Qe/ [Qe + Qa] = 0.15/ [0.15+ 11.57] = 0.0128$

After applying the 10:1 acute to chronic ratio, the new CD becomes 13%. The NMIP directs the WET test to be a 48-hour acute test using Daphnia pulex and Pimephales promelas at a once per six-month frequency consistent with the NMIP. The test series will be 0% (control), 5%, 7%, 10%, 13%, and 17%.

ii. TRC

The facility uses UV to control bacteria. The previous permit however maintained a 19 ug/l TRC limit when chlorine is used as a treatment chemical for process equipment sanitization and/or filamentaceous algae control. The requirement will be maintained in the draft permit triggered only when chlorine is used in that manner.

5. TMDL AND OTHER REQUIREMENTS

The Pecos River (Canon de Manzanite to Alamitos Canyon) assessment unit has been included on the 2016-2018 List of Impaired Waters for temperature. As stated during the development of the previous permit and knowing that no thermal treatment is applied for the treatment of sanitary wastewater, the nature of the treated wastewater discharge will not increase the stream temperature. Therefore, no additional conditions are included in the proposed permit to address the impairment listed for the receiving water. A reopener clause is established in Part II of the permit, which allows the permit to be modified, if necessary, to conform with the approved Water Quality Management Plan (WQMP) final effluent limitations or an approved waste load allocation (WLA) as part of a 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 the March 15, 2012, NMIP. Flow is proposed to be monitored daily by totalizing meter. E. coli bacteria, BOD_5 and TSS shall be sampled twice per month using grab samples. When chlorine is used to disinfect treatment equipment and/or treat filamentaceous algae, TRC shall be sampled daily using instantaneous grab samples. pH shall also be sampled daily using instantaneous grab sample. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection. Sample types identical to the previous permit.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP, March 15, 2012. Table 11 of Section V of the NMIP outlines the type of WET testing for different types of discharges. Analysis of past WET data to determine RP is attached with the Fact Sheet.

The permittee has performed six (6) WET tests for Pimephales promelas and six (6) tests for Daphnia pulex during the last permit term and has passed all of them. EPA concludes based on the passed WET tests and the Reasonable Potential Analyzer that reasonable potential to cause toxicity does not exist and WET limits are not required. However, WET monitoring will be continued in the draft permit.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall 001 - the discharge to the

Pecos River Segment 20.6.4.217. Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	MONITORING REQUIREMENTS	
Whole Effluent Toxicity Testing (48-hr Static Renewal)[1]	FREQUENCY	TYPE
Daphnia pulex	1/year	24-hr Composite
Pimephales promelas	1/year	24-hr Composite

1. Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

VI. FACILITY OPERATIONAL PRACTICES

A. SEWAGE SLUDGE

The permittee shall use only those sewage sludge disposal or reuse practices that comply with the federal regulations established in 40 CFR Part 503 "Standards for the Use or Disposal of Sewage Sludge." EPA may at a later date issue a sludge-only permit. Until such future issuance of a sludge-only permit, sludge management and disposal at the facility will be subject to Part 503 sewage sludge requirements. Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a sludge-only permit has been issued. Part IV of the draft permit contains sewage sludge permit requirements.

B. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

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 monthly. The monitoring results will be available to the public.

VII. ANTIDEGRADATION

The NMAC, Section 20.6.4.8 "Anti-degradation 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 waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8. A.2.

VIII. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet anti-backsliding provisions of the Clean Water Act, Section 402(o) and 40 CFR §122.44(l)(i)(A), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit maintains the discharge limitations requirements of the previous permit for all pollutants.

IX. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at U.S. Fish and Wildlife Service, Southwest Region 2 website, https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=35047, six species in San Miguel are listed as endangered (E) or threatened (T). The Southwestern willow flycatcher (E) (Empidonax traillii extimus), the Mexican spotted owl (T) (Strix occidentalis lucida), the Yellow-billed Cuckoo (T) (Coccyzus americanus), the Holy Ghost ipomopsis (E) (Ipomopsis sanctispiritus), the North American Wolverine (Gulo gulo luscus) and New Mexico meadow jumping mouse (Zapus hudsonius luteus).

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. Consultation (Cons.# 2-22-88-I-113 and [88-I-066]) with the USFWS, August 17, 1988, had concurred with EPA's "no effect" determination regarding the discharge from the facility on threatened and endangered species and their habitat.

2. EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.

3. The draft permit is identical to the previous permit. Also, no changes in the treatment of wastewater technology have been proposed or implemented since last issuance of the permit.

EPA determines that Items 1thru 3 result 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.

X. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

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

XI. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if State Water Quality Standards are promulgated or revised. In addition, if the State amends a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that TMDL. Modification of the permit is subject to the provisions of 40 CFR §124.5.

XII. VARIANCE REQUESTS

No variance requests have been received

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, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

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. 40 CFR CITATIONS

Citations to 40 CFR are as of April 27, 2017. Sections 122, 124, 125, 133, 136

B. STATE OF NEW MEXICO REFERENCES

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

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

Statewide Water Quality Management Plan, December 23, 2011.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2016-2018. Current EPA Approved Version, September 23, 2016.