

NPDES PERMIT NO. NM0029041

FACT SHEET

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

1. APPLICANT

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2. ISSUING OFFICE

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4. DATE PREPARED

May 10, 2012

5. PERMIT ACTION

Proposed reissuance of the current National Pollutant Discharge Elimination System (NPDES) permit issued May 25, 2007, with an effective date of July 1, 2007, and an expiration date of June 30, 2012.

Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed in Title 40, Code of Federal Regulations, revised as of April 6, 2012.

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 – 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

7. DISCHARGE LOCATION

As described in the application, the Village of Pecos owns and operates a publicly owned treatment works (POTW). The facility is located at 42 Lagoon Lane, in San Miguel County, New Mexico.

The Water Quality Segment number where this facility discharges to is 20.6.4.217. 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

7. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in "New Mexico State Standards for Interstate and Intrastate Surface Waters," (NM WQS), 20.6.4 NMAC, as amended through January 14, 2011.

The designated uses of the receiving water in Segment 20.6.4.217 are domestic water supply, fish culture, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact; and public water supply on the main stem of the Pecos River.

8. APPLICANT ACTIVITY

Under the Standard Industrial Classification (SIC) Code 4952, the applicant currently operates a domestic wastewater treatment facility. The facility has been upgraded since July, 2010, and the treatment process consists of bar screen, grit chamber, Sequencing Batch Reactors, Ultraviolet (UV) disinfection system, and rock filter. The facility has a design flow capacity of 0.15 million gallons per day (MGD).

9. EFFLUENT CHARACTERISTICS

The facility submitted information in its application that describes the nature of the permitted discharge. The following is a summarization of effluent characteristics.

| <u>Parameter</u> | <u>Avg. Monthly</u> <u>(mg/l unless noted)</u> | <u>Max. Daily</u> |
|--|---|-------------------|
| Flow, million gallons/day (MGD) | 0.09 | 0.12 |
| pH, minimum, standard units (su) | N/A | 7.10 su |
| pH, maximum, standard units (su) | N/A | 8.48 su |
| Biochemical Oxygen Demand, 5-day (BOD ₍₅₎) | 6.5 | 7.3 |
| Fecal Coliform (FCB) (bacteria/100 ml) | 7.0 | 8.3 |
| Total Suspended Solids (TSS) | 3.5 | 20 |

10. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

The proposed effluent limitations for those pollutants proposed to be limited are based on regulations promulgated at 40 CFR 122.44. The draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR 122.44(a), on BPJ in the absence of guidelines, NM WQS and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent.

a. Reason For Permit Issuance

It is proposed that the permit be issued for a 5-year term following regulations promulgated at 40 CFR 122.46(a). The initial permit renewal application was received on January 20, 2012.

b. Operation and Reporting

(1) Regulatory Basis

At a minimum, the facility will be required to meet to the equivalent of “secondary treatment” for domestic sewage, found at 40 CFR 133.102.

(2) Operation and Reporting

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility’s discharge on a regular basis; and report the results quarterly. The monitoring results will be available to the public.

(3) Sewage Sludge Practices

Sludge produced at the treatment plant is dewatered, dried, then hauled to a landfill.

(4) Waste Water Pollution Prevention Requirements

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

(5) Industrial Wastewater Contributions

Based on information provided by the applicant, the facility does not receive significant industrial wastewater. EPA has determined that the permittee will not be required to develop a full pretreatment program. However, general pretreatment provisions have been included in the permit.

c. Technology Based Effluent Limitations/Conditions

Regulations promulgated at 40 CFR 122.44(a) require that technology-based effluent limitations be placed in NPDES permits based on effluent limitations guidelines where applicable, on best professional judgment (BPJ) in the absence of guidelines, or on a combination of the two.

Limitations on 5-day biochemical oxygen demand, (BOD₅), or 5-day carbonaceous biochemical oxygen demand, (CBOD₅), and total suspended solids, (TSS), are in accordance with “secondary treatment requirements” established at 40 CFR 133.102 (a) and 133.102 (b). Limitations on maximum and minimum pH are in accordance with 40 CFR 133.102(c).

The following equation is used to calculate the mass load:

Loading in lbs/day = pollutant concentration in mg/l * 8.345 lbs/gal * design flow in MGD

The design flow is 0.15 MGD. So the daily maximum and monthly average of BOD₅ or TSS load are calculated as below:

| | |
|----------------------|--|
| Daily Maximum Load | $45 \text{ mg/l} \times 0.15 \text{ MGD} \times 8.345 = 56.3 \text{ lb/day}$, and |
| Monthly Average Load | $30 \text{ mg/l} \times 0.15 \text{ MGD} \times 8.345 = 37.6 \text{ lb/day}$. |

Effluent loads for both BOD₅ and TSS increase a little due to the change of design capacity from 0.142 MGD to 0.150 MGD. In accordance with the effluent guidelines provision at 40 CFR 133.102 (a)(3) and (b)(3), 30-day average percent removals for BOD₅ and TSS are added to the proposed permit.

d. Water Quality Based Limitations

The NM WQCC adopted new WQS for the State of New Mexico. The revised WQS as amended through January 14, 2011, are available on the NMED's website at <http://www.nmenv.state.nm.us/swq/b/Standards/>. The WQS have been approved by EPA in accordance with Section 303 of the CWA.

e. 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.

f. Reasonable Potential

All applicable facilities are required to fill out appropriate sections of the Form 2A, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to Publicly Owned Treatment Works (POTW's), but also to facilities that are similar to POTW's, but which do not meet the regulatory definition of "publicly owned treatment works" (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to "make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities," per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL.

The amount of information required for minor facilities was limited to specific sections of these forms, 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 from 1990 to present, an evaluation of minor POTW data provided by the State agencies, and on-site monitoring for selected toxics at 86 minor facilities across the nation.

Due to the limited information required by the application, the Agency has determined that no reasonable potential exists for this discharge to violate applicable NM WQS for the protection of domestic water supply, fish culture, high quality coldwater 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.

g. Final Effluent Limitations

Technology-based effluent limitations are established in the proposed permit for the following pollutants; BOD₅, and TSS. Water quality-based effluent limitations are established in the proposed permit for the following pollutants: E. coli, pH, and TRC. The more stringent water segment specific pH criteria (6.6 – 8.8 su) are established to replace the technology-based pH limitations. Water segment specific single sample and average E. coli criteria (126/239 colonial/100 ml) also apply at the end-of-pipe. The facility uses UV to disinfect the treated wastewater prior to discharging. But, the proposed permit includes the TRC limit in the permit in case chlorine content chemicals are used for system disinfection or any other purpose.

h. Monitoring Frequency

Regulations require that permits establish monitoring requirements to yield data representative of the monitored activity (40 CFR 122.48(b)) and to assure compliance with permit limitations (40 CFR 122.44(i)(1)). The monitoring frequencies are based on BPJ, taking into account the nature of the facility and its design flow and the previous permit. Monitoring frequencies in the current permit are retained.

i. Whole Effluent Toxicity (WET) Limit

The existing permit has a 48-hour acute WET limit for tests of *Daphnia pulex* and *Pimephales promelas* and a 14% critical dilution. Stream flow statistic information indicates that the new 4Q3 flow is 15.4 cfs which equals 9.94 MGD. So, the calculated CD is 1.5% ($0.15 \div (0.15+9.94) = 0.0148$). After applying the 10:1 acute to chronic ratio, the new CD becomes 15%. 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), 6%, 8%, 11%, 15%, and 20%.

As noted in the response to comments document prepared for the draft NPDES permit publicly noticed on February 24, 2007, WET limits were added to the permit in lieu of ammonia limits.

Upgrades to the facility came online in July 2010. Section 4.14 of the National Whole Effluent Toxicity (WET) Implementation Guidance Under the NPDES Program (November 2004) provides that the “effluent data used as the basis for effluent characterization should be representative of the monitored activity...[meaning]...the discharge under current conditions with current treatment and management practices at the plant.” This EPA guidance document goes on to explain that WET data may not be representative if such data was obtained prior to “significant treatment, pretreatment, or pollution prevention modifications.” When the WET data is no longer representative, the aforementioned EPA guidance document provides that the permitting authority may “exclude such data in the [reasonable potential] determination...because the data pre-date current operating conditions and treatment at the facility.” See also EPA Region 6, WET Permitting Strategy, May 2005. Therefore, the EPA is only evaluating the WET data from July 2010 to present.

Out of 3 tests performed during the last permit term the effluent exhibited no failures for the *Daphnia pulex* or *Pimephales promelas*. The EPA Reasonable Potential Analyzer (Appendix A) recommends biomonitoring for the *Daphnia pulex* and *Pimephales promelas* test species be added to the permit. However, the WET limit for *Daphnia pulex* and *Pimephales promelas* has been carried forward from the previous permit due to the limited size of testing data and the fact that WET limits were established in lieu of ammonia limits previously.

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 | DISCHARGE LIMITATIONS | |
|--|-----------------------|----------------|
| | 30-DAY AVG MINIMUM | 48-Hr. MINIMUM |
| Whole Effluent Lethality (PCS 22414) (48 Hr. NOEC) <u>1</u> / | 15% | 15% |
| <u>Daphnia pulex</u> | REPORT | REPORT |
| <u>Pimephales promelas</u> | REPORT | REPORT |

| EFFLUENT CHARACTERISTIC | MONITORING REQUIREMENTS | |
|---|-------------------------|------------------|
| | FREQUENCY | TYPE |
| Whole Effluent Lethality (48 Hr. NOEC) <u>1/</u> | | |
| <u>Daphnia pulex</u> | 1/6 Months | 24-Hr. Composite |
| <u>Pimephales promelas</u> | 1/6 Months | 24-Hr. Composite |

FOOTNOTES

1/ Monitoring and reporting requirements begin on the effective date of this permit. Compliance with the Whole Effluent Toxicity limitations is required as soon as the permit is made effective. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

j. Significant Changes from the Existing Permit

There are changes of permit conditions from the existing permit issued May 25, 2007, and expired June 30, 2012:

- A. Change BOD₅ and TSS effluent loads;
- B. Add percentage removal limitations for BOD₅ and TSS; and
- C. Change critical dilution for WET limit.

11. 303(d) Impaired Waterbody List

The revised Total Maximum Daily Load (TMDL) as of June 14, 2005 lists Pecos River Water Quality Segment 20.6.4.217 (NM-2214.A_003) as impaired for not supporting High Quality Coldwater Fishery because of water temperature and turbidity. The nature of the discharge will not increase the stream temperature. Turbidity exceedances only occurred in the spring and were likely due to snowmelt runoff. The proposed permit does not authorize discharges of additional load of solids. The facility has been upgraded and reduces more than 90% of suspended solids into the stream since July 2010. Therefore, no additional conditions are included in the proposed permit to address the impairments 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.

12. ANTIDegradation AND ANTIBACKSLIDING

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 facility has been upgraded and has decreased more than 90% of the wasteload of total suspended solids to the receiving stream.

There are no reductions of effluent limitations to violate antibacksliding policy.

13. ENDANGERED SPECIES CONSIDERATIONS

Five species in San Miguel County are listed as Endangered or Threatened, according to the U.S. Fish & Wildlife Service's (USFWS) website, http://www.fws.gov/southwest/es/NewMexico/SBC_view.cfm?spcnty=San%20Miguel. The lone aquatic species is the Arkansas River shiner. Two of the species are avian and include Mexican spotted owl and the southwestern willow flycatcher. Additionally, the black footed ferret and Holy Ghost ipomopsis are listed as endangered. EPA evaluated the effects of the permit reissuance action on the listed endangered and threatened species when EPA reissued the permit in 2007, and determined, based on the information available to EPA, that the reissuance of this permit would have *no effect* on these federally listed threatened or endangered species. Environmental baseline to support the 2007 determination included the U.S. Fish and Wildlife Service's concurrence with EPA's "no effect" determination in their letter (Cons.# 2-22-88-I-113 and [88-I-066]) dated August 17, 1988. The bald eagle was removed from the federal list on June 28, 2007, right after the permit was reissued in 2007.

EPA determines that this permitting action has *no effect* on federally listed endangered and threatened species based on the following facts: 1) there is no new species added into the federal list of endangered species since the issuance of the 2007 permit, 2) there is no significant change of the proposed permit from the 2007 issued permit, and 3) there is no new information available which warrants a change of EPA's previous determination.

14. HISTORICAL AND ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

There is no information on historical and/or archeological sites which may be affected by the reissuance of the permit.

15. 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.

16. FINAL DETERMINATION

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

17. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

a. Application(s)

EPA Application Form 2A received January 20, 2012.

b. State of New Mexico References

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through January 14, 2011.

Procedures For Implementing National Pollutant Discharge Elimination System Permits In New Mexico – NMIP, March 15, 2012