NPDES PERMIT NO. NM0023370 FACT SHEET

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

APPLICANT

Village of Cloudcroft Wastewater Treatment Facility PO Box 317 Cloudcroft, NM 88317

ISSUING OFFICE

U.S. Environmental Protection Agency Region 6 1445 Ross Avenue Dallas, Texas 75202-2733

PREPARED BY

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DATE PREPARED

December 23, 2012

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued August 10, 2006, with an effective date of September 1, 2006, and an expiration date of August 31, 2011.

RECEIVING WATER – BASIN

Dry Canyon – Closed Basin

DOCUMENT ABBREVIATIONS

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

Lowest four-day average flow rate expected to occur once every three-years
Best available technology economically achievable
Best conventional pollutant control technology
Best practicable control technology currently available
Best management plan
Biochemical oxygen demand (five-day unless noted otherwise)
Best professional judgment
Critical dilution
Code of Federal Regulations
Cubic feet per second
Chemical oxygen demand
United States Corp of Engineers
Clean Water Act
Discharge monitoring report
Effluent limitation guidelines
United States Environmental Protection Agency
Endangered Species Act
Fecal coliform bacteria
United States Fish and Wildlife Service
Milligrams per liter (one part per million)
Micrograms per litter (one part per billion)
Million gallons per day
New Mexico Administrative Code
New Mexico Environment Department
New Mexico NPDES Permit Implementation Procedures
New Mexico State Standards for Interstate and Intrastate Surface Waters
National Pollutant Discharge Elimination System
Minimum quantification level
Oil and grease
Publically owned treatment works
Reasonable potential
Standard industrial classification
Standard units (for parameter pH)
Surface Water Quality Bureau
Total dissolved solids
Total maximum daily load
Total residual chlorine
Total suspended solids
Use attainability analysis
Ultraviolet light
United States Fish & Wildlife Service
United States Geological Service
Wasteload allocation
Whole effluent toxicity
New Mexico Water Quality Control Commission
Water Quality Management Plan
Wastewater treatment plant

I. CHANGES FROM THE PREVIOUS PERMIT

The changes made to the draft permit from the permit previously issued January 30, 2006, with an effective date of March 1, 2006, and an expiration date of February 28, 2011 are:

A. Limits for minimum percent removal have been added for TSS and BOD.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility is located at 1560 James Canyon Highway 82, Village of Cloudcroft, Otero County, New Mexico.

Under the Standard Industrial Classification Code 4952, the applicant operates a POTW with a design flow of 0.5 MGD for a population of 1500 residents.



PLAT OF VILLAGE of CLOUDCROFT WWTP

The Cloudcroft WWTP consists of headwork's, a combined clarifier/digester (clarigester), trickling filter, secondary clarifier, chlorine contact chamber, and dechlorination system. A new membrane bioreactor (MBR) facility has been constructed at the site to replace the aging facility. There are now a total of four lift stations in use. Bio Blocks are suspended in the waste stream at some of the lift stations to constantly introduce bacteria in order to control fats, grease, and oils. Influent enters the headwork's, which consist of a strainer, which has a heating element to

prevent freezing during the winter. Solids removed are transferred into plastic bags that are then sealed. Following the strainer is an aerated grit chamber which removes grit periodically during the day via a grit auger to plastic bags. The grit is transported off-site to a local trash transfer station. Influent is measured with an ultrasonic flow meter with a 6" Parshall flume. This information can be displayed as well as the outflow discharge to recorders in the WWTP office.

The equalization (EQ) basin at this facility is not being used for treatment at this time. However, all flow entering the treatment plant passes through this basin with no retention before entering the circular clarigester for primary settling. The flow is directed through a valve box and then to a covered trickling filter with a rock media. Following the trickling filter, wastewater is sent to a circular secondary clarifier. Wasted sludge from the secondary clarifier is pumped back to the clarigester. After the water passes through the circular clarifier, it is sent through a serpentine chlorine contact chamber and is disinfected with liquid sodium hypochlorite. It is then sent through a 6" Parshall flume for measurement with a totalizer meter. After traveling through the flume, effluent is then dechlorinated with liquid sodium bisulfate and sent to the outfall.

Waste sludge from the clarigester gravity flows into a sludge drain line and pit. Via pump the solids are pumped through this station to a loading area located at the top of the hill. The Village located the loading station at the higher elevation so that the trucks would not have to go onto the plant grounds and possibly get stuck in the mud during the winter months. The sludge is pumped periodically by SW Envirotech in Las Cruces and the solids are placed on a permitted land application site on the west mesa near Las Cruces.

The effluent from the treatment plant is discharged from Outfall 001 to a dry canyon thence to Fresnal Canyon at Latitude: 32° 57' 45.67" North, Longitude: 105° 44' 46" West.

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received October 12, 2011, are presented below:

Parameter	Max	Avg
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	0.119	0.110
Temperature, winter, °C	10.2	8
Temperature, summer, °C	18	16.6
pH, minimum, standard units (su)	7.0	N/A
pH, maximum, standard units (su)	7.5	N/A
Biochemical Oxygen Demand, 5-day (BOD ₅)	22.9	18.5
Fecal Coliform (#bacteria/100 ml)	<1	<1
Total Suspended Solids (TSS)	32.0	22.8
Ammonia (NH ₃)	56.1	31.0

POLLUTANT TABLE - 1

A summary of the last 2-years of pollutant data taken from DMRs indicates two monthly average exceedances for BOD limits and two months for both daily maximum and monthly average TSS limit exceedances.

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 technologybased 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.

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The previous permit expired August 31, 2011. The application was received on October 12, 2011.

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 TSS and BOD₅. Water quality-based effluent limitations are established in the proposed draft permit for E. coli bacteria, TRC and pH.

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, 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's that has technology-based ELG's established at 40 CFR Part 133, Secondary Treatment Regulation. Pollutants with ELG's established in this Chapter are BOD, TSS, percent removal for each and pH. BOD limits of 30 mg/l for the 30-day average, 45 mg/l for the 7-day average and 85% percent (minimum) removal are found at 40 CFR §133.102(a). TSS limits of 30 mg/l for the 30-day average, 45 mg/l for the 7-day average and 85% percent (minimum) removal are found at 40 CFR §133.102(b). ELG's for pH are between 6-9 s.u. and are found at 40 CFR §133.102(c). 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 30-day average BOD/TSS loading = 30 mg/l * 8.345 lbs/gal * 0.50 MGD 30-day average BOD/TSS loading = 125 lbs

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

Final Effluent Limits – 0.50 MGD design flow.

EFFLUENT	DISCHARGE LIMITATIONS			
CHARACTERISTICS				
	lbs/Day		mg/l (unl	less noted)
Parameter	30-Day	7-Day Avg.	30-Day Avg.	7-Day Avg.
	Avg.			
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD ₅	125	187	30	45
BOD, % removal, minimum (*1)	85%			
TSS	125	187	30	45
TSS, % removal, minimum (*1)	85%			

FOOTNOTE:

*1 Percent removal is calculated using the following equation: (average monthly influent concentration – average monthly effluent concentration) \div average monthly influent concentration.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on

federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

2. Implementation

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

3. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC amended through January 14, 2011). The wastewater flows from the outfall to dry canyon thence to Fresnal Canyon in Segment No. 20.6.4.801 of the Closed Basins. The designated uses of Segment 20.6.4.801 are coldwater aquatic life, fish culture, irrigation, livestock watering, wildlife habitat, municipal and industrial water supply, and primary contact.

4. Permit Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

a. BACTERIA

Stream segment specific limitations for bacteria established at 20.6.4.801 establish E. coli bacteria at 126 cfu/100 ml daily monthly geometric mean and 235 cfu/100 ml daily maximum. These limitations are identical to the previous permit.

b. pH

Lacking stream segment specific limitations for pH, WQS established at 20.6.4.900, "Criteria Applicable to Attainable or Designated Uses Unless Otherwise Specified in 20.6.4.97 through 20.6.4.899 NMAC" apply. Limits for pH based on 20.6.4.900 for coldwater aquatic are more restrictive than the other designated uses requiring pH criteria. For coldwater aquatic life the pH shall be 6.6 to 8.8 su. These limits are identical to the previous 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 a water quality criteria, the permit must contain an effluent limit for that pollutant.

All applicable facilities are required to fill out appropriate sections of the Form 2A, 2S or 2E, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to POTWs, but also to facilities that are similar to POTWs, but which do not meet the regulatory definition of "publicly owned treatment works" (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to "make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities," per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL. The facility is designated as a minor, and does not need to fill out the expanded pollutant testing section Part D of Form 2A. There are no toxics that need to be placed in the draft permit except for those presented below.

ii. TRC

The facility uses chlorine to control bacteria. The previous permit had an 11 ug/l TRC limit that will be continued in the draft permit.

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 previous permit. Technology based pollutants; BOD and TSS are proposed to be monitored two times per month. Flow is proposed to be monitored five days per week using instantaneous readings. Sample type for BOD and TSS are grab which is consistent with the previous permit. Water quality-based pollutant monitoring frequency for pH and E. coli shall be two times per month by grab sample which is the same as the previous permit. TRC shall be monitored daily using instantaneous grab samples. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

The previous permit had biomonitoring requirements. The results of that testing have been analyzed to determine if RP exist for the discharge to exceed narrative criteria. The results are included as an Appendix to the Fact Sheet below. The dry canyon is described as an ephemeral

waterbody; flowing only under periods of rapid snowmelt or when rainfall of long enough duration and/or intensity occur. When a discharge enters into an ephemeral waterbody, the CD is 100. Based on the nature of the discharge, the design flow; more than 0.1 MGD but less than 1.0 MGD, and the critical dilution, the NMIP directs the WET test to be a 48 hour acute test using Daphnia pulex at a once per two years frequency for permit term. The first test shall be in the first-year of the permit after the permit effective date (PED) and the second test shall be in the third year after the PED. This type of test and frequency is identical to the existing permit. Additional retests after the third year shall be at once/two years until the permit is renewed or other changes required by EPA. The test species shall be *Daphnia pulex* at a 100% CD. Both tests shall occur during the period November 1 and April 30.

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 shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 100% effluent.

Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE MONITOR 30-DAY AVG MINIMUM	<u>LING</u> <u>48-HOUR MINIMUM</u>	
Whole Effluent Toxicity Testing (48-Hour Static Renewal) (*1)			
Daphnia pulex	REPORT	REPORT	
EFFLUENT CHARACTERISTIC	MONITORING REQUIREMENTS		
Whole Effluent Toxicity Testing (48-Hour Static Renewal) (*1)	<u>FREQUENCI</u>		
Daphnia pulex	1/2 years (*2)	24-Hr. Composite	

Footnote:

- *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.
- *2 The first test shall be in the first year after the permit effective date (PED) and the second test shall be taken during the third year after the PED. Each sample shall be taken during the period November 1 and April 30. Thereafter, until the permit is renewed, continued sampling shall be at two (2) year intervals between November 1 and April 30. If any test demonstrates significant toxic effects at the 100% critical dilution, testing for the affected species will continue at once/six (6) months until either the expiration date of the permit, its renewal, or otherwise directed by EPA.

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

VII. 303(d) LIST

Fresnal Canyon, from La Luz Creek to headwaters, is listed on the current "2004-2006 State of New Mexico 303(d) List for assessed Stream and River Reaches." The stream is shown to fully support coldwater fishery, fish culture, wildlife habitat, municipal and industrial water supply, and irrigation. The stream has not been assessed for livestock watering and secondary contact. There are no additional permit requirements to be placed in the permit at this time. The standard reopener language in the permit allows additional permit conditions if warranted by future changes to State waters.

VIII. 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 waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

IX. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet antibacksliding 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 mass loading requirements of the previous permit for BOD and TSS. The remaining pollutants concentration limits are as restrictive as the previous permit.

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at USFWS, Southwest Region 2 website, http://www.fws.gov/southwest/es/EndangeredSpecies/EndangeredSpecies_Lists/EndangeredSpecies_EndangeredSpec

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. In the previous permits issued August 10, 2006, EPA made a "no effect" determination for federally listed species. EPA has received no additional information since then which would lead to a revision of that "no effect" determination. EPA determines that this reissuance will not change the environmental baseline established by the previous permit, and therefore, EPA concludes that reissuance of this permit will have "no effect" on the listed species and designated critical habitat.
- 2. No additions have been made to the USFWS list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.

- 3. EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.
- 4. The draft permit is no less restrictive from the previous permit.
- 5. EPA determines that Items 1, thru 4 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.

XI. 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.

XII. 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.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. 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.

XV. FINAL DETERMINATION

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

XVI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Form 2E received October 12, 2011.

B. 40 CFR CITATIONS

Citations to 40 CFR are as of December 16, 2011. 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, as amended through January 14, 2011.

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico, May 3, 2011.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2010 - 2012.