

NPDES PERMIT NO. NM0030694 FACT SHEET

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

APPLICANT

Four Corners Water Reclamation Facility
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ISSUING OFFICE

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DATE PREPARED

April 19, 2011

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued June 30, 2005, with an effective date of August 1, 2005, and an expiration date of July 31, 2010.

RECEIVING WATER – BASIN

Arroyo Seco – Rio Grande Basin

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
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
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
F&WS	United States Fish and Wildlife Service
mg/l	Milligrams per liter (one part per million)
ug/l	Micrograms per liter (one part per billion)
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
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
UV	Ultraviolet light
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Service
WLA	Wasteload allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

As used in this document, references to State shall mean either State of New Mexico and/or Tribes.

I. CHANGES FROM THE PREVIOUS PERMIT

There are changes from the permit previously issued June 30, 2005, with an effective date of August 1, 2005, and an expiration date of July 31, 2010:

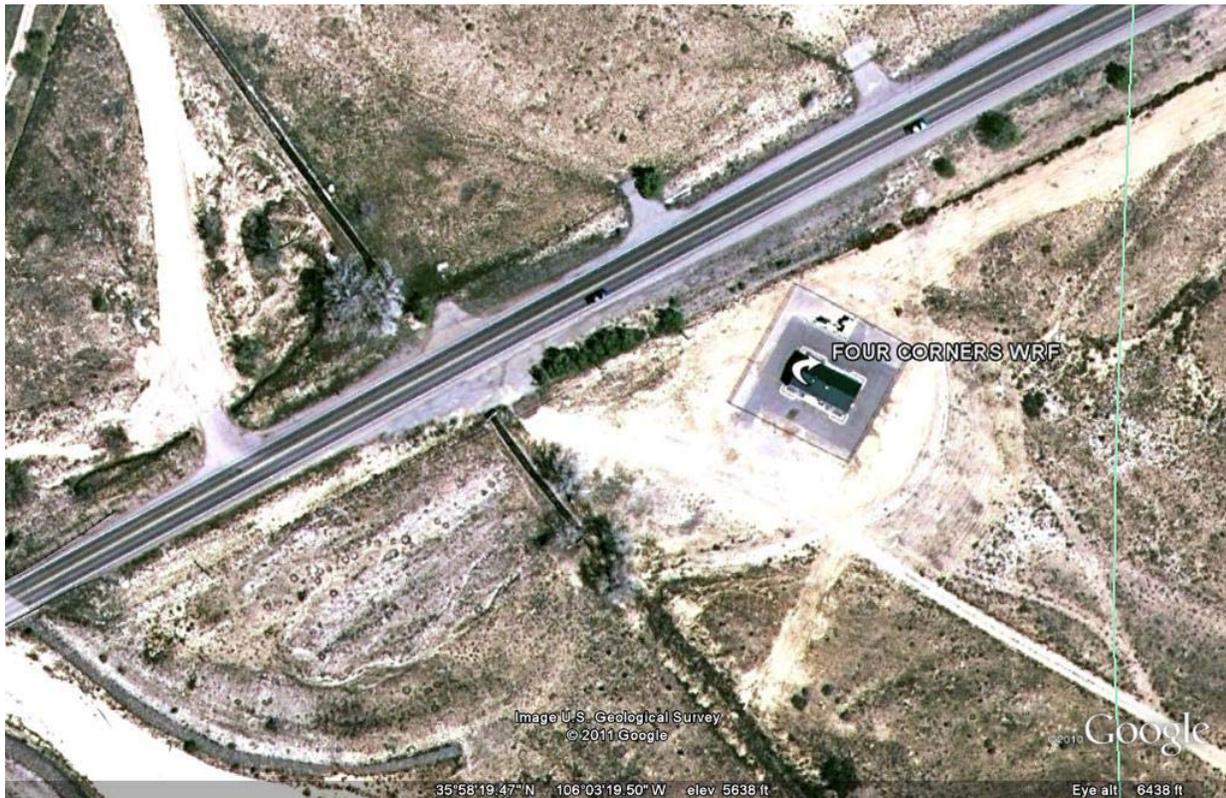
- A. FCB has been eliminated and replaced with E. coli bacteria.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility is located at 99 State Road 399 Espanola, on Santa Clara Indian Pueblo land, Rio Arriba County, New Mexico.

Under the Standard Industrial Classification Code 4952, the applicant operates a POTW with a design flow of 0.08 MGD for Tribal retail development.

PLAT OF FOUR CORNERS WRF



Influent wastewater comes into the treatment plant at the entrance works, where it is screened and travels to one of two, 38,000 gallon sequential batch reactors (SBR's). Each SBR has a design retention time of 23-hours. Effluent from the SBR's then enters an 8,600 gallon surge tank, then enters pressure sand filters, thence to the ultraviolet (UV) disinfection chamber, after which it is discharged through the outfall.

Sludge is extracted from the SBR's sent to a 15,000 gallon sludge storage tank. The sludge is pumped to a centrifuge where solids are removed and sent to a landfill. Typically, the treated effluent will be sent to holding ponds on Black Mesa Golf Course located south of the facility to be used for irrigation.

The facility and its discharge are within the boundaries of the Pueblo of Santa Clara. The discharge from Outfall 001 is to an unnamed ditch, thence to the ephemeral waterbody named Arroyo Seco, thence to the Rio Grande River in the Pueblo of Santa Clara. The discharge from Outfall 001 is located on the unnamed ditch at Latitude 35° 57' 56" North, Longitude 106° 03' 05" West.

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received August 1, 2010, are presented below:

POLLUTANT TABLE - 1

Parameter	Max	Avg
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	0.08	
Temperature, winter, °C	15	N/A
Temperature, summer, °C	20	N/A
pH, minimum, standard units (su)	6	
pH, maximum, standard units (su)	9	
Biochemical Oxygen Demand, 5-day (BOD ₅)	10.0	5.0
Fecal Coliform (#bacteria/100 ml)	5	2.2
Total Suspended Solids (TSS)	10	5

The facility has had no discharges since being built five-years ago. The facility may have discharges based on future development but at this time there is none planned. The discharge being permitted will be at times when either weather conditions and/or other factors require a discharge to Pueblo waters.

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.

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 July 31, 2010. The application was received on July 28, 2010. 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 TSS and BOD₅. Water quality-based effluent limitations are established in the proposed draft permit for E. coli bacteria, 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 and pH. BOD 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). 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 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:

$$\text{Loading in lbs/day} = \text{pollutant concentration in mg/l} * 8.345 \text{ lbs/gal} * \text{design flow in MGD}$$

$$30\text{-day average BOD/TSS loading} = 30 \text{ mg/l} * 8.345 \text{ lbs/gal} * 0.08 \text{ MGD}$$

$$30\text{-day average BOD/TSS loading} = 20 \text{ lbs}$$

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

Final Effluent Limits – 0.08 MGD design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/l (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD ₅	20	30	30	45
TSS	20	30	30	45
pH	N/A	N/A	6.0 – 9.0 standard units	

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 the “Water Quality Code of the Pueblo of Santa Clara” (PSCWQC), revised November 5, 2002, approved by EPA April 7, 2006. The designated uses of the receiving waters, the ephemeral waterbody named Arroyo Seco, are livestock and wildlife, groundwater recharge and primary contact.

The Pueblo of San Ildefonso currently does not have EPA approved water quality standards.

The State of New Mexico has designated the following uses for Stream Segment No. 20.6.4.114, the Rio Grande irrigation, livestock watering, wildlife habitat, marginal coldwater aquatic life, primary contact, and warmwater aquatic life.

In accordance with the PSCWQC, the permit must be developed to allow the maintenance and attainment of livestock and wildlife, groundwater recharge and primary contact. EPA also has considered the downstream effects of the discharge on the State of New Mexico designated uses for the Rio Grande in Waterbody Segment Code No. 20.6.4.114 of the Rio Grande Basin: irrigation, livestock watering, wildlife habitat, primary contact, marginal coldwater fishery, and warmwater fishery. For applicable State and Tribal protections above, design flow and permit application information consistent with other facilities that treat sanitary wastewater, the pollutants of concern are bacteria and pH.

The discharge travels approximately 1.6 miles from the outfall thru the unnamed drainage ditch, thence along the ephemeral stream named Arroyo Seco before it enters the Rio Grande on Pueblo of Santa Clara land. The length of stream travel from the confluence of the Arroyo Seco and the Rio Grande, downstream to the northern boundary of the San Ildefonso Reservation, downstream of the Pueblo of Santa Clara, is approximately 3.4 miles. The San Ildefonso Reservation does not have approved water quality standards. After an additional 6.5 miles inside the San Ildefonso Reservation, the Rio Grande reaches State waters. It is the permit writer's professional judgment that based on the low volume of discharge, 0.080 MGD, when the discharge would not be sent for reuse, the effluent will not enter any portion of the Rio Grande except under the influence of significant precipitation events.

Based on the above, the Agency has determined that no reasonable potential exists for this discharge to violate applicable State of New Mexico water quality standards nor will the discharge influence any waters contained within the San Ildefonso Reservation.

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:

The receiving water, Arroyo Seco, is not listed in the Tribal inventory as a perennial waterbody. However, in Section V, Stream Use Designations, of the PSCWQC, there are standards that apply to all intermittent or ephemeral waterbodies located in the Pueblo. Specifically, livestock and wildlife, groundwater and recharge, and primary contact.

a. BACTERIA

Standards for primary contact limit E. coli to a monthly geometric mean of 126 colonies/100 ml, and a single sample maximum of 235 colonies/100 ml. These criteria will be used to establish

bacteria limits in the draft permit. The previous permit had limits for FCB but since the previous permit was issued, bacteria limitations for human health protection have recommended the use of E. coli bacteria as the indicator parameter. Since the PSCWQC have criteria for both E. coli and FCB, the draft permit will replace FCB and replace it with E. coli. The removal of FCB does not constitute antibacksliding as required in 40 CFR §122.44(l) since FCB has been replaced by E. coli as an indicator pollutant to assess compliance with the protection of primary body contact.

b. pH

For the protection of primary contact designated uses, PSCWQC requires the pH to be between 6.6 to 8.8 su's for any single sample. These limits are more stringent than technology-based limitations shown above but 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.

ii. TRC

The facility uses ultraviolet to disinfect the treated wastewater, therefore the facility has no reasonable potential to contribute total residual chlorine to Tribal waters.

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). The discharge is on Tribal land, however EPA has adopted a common guideline of monitoring frequency for both Tribal and State facilities. The policy is contained in

the NMIP. Technology based pollutants; BOD and TSS are proposed to be monitored one time per month. These frequencies are less frequent than the current permit. Flow is proposed to be monitored daily when discharging by totalizing meter. Sample type for BOD and TSS are by "SBR sample" defined as a minimum of three (3) aliquots collected from the discharge of an SBR reactor. The first aliquot must be collected no later than 1/4 time, the second approximately 1/2 time, and the third no earlier than 3/4 time from the initiation of a discharge cycle to the stoppage of the discharge cycle. This sample requirement is the same as the previous permit.

Water quality-based pollutant monitoring frequency for E. coli shall be once per month by grab sample which is less frequent than the previous permit. The pollutant pH shall be monitored two times per month when discharging using grab samples, which is the same as the previous permit.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

Biomonitoring of the discharge will not be placed in the permit based on the low flow, and nature of the receiving waterbodies. Based on the technology-based and water quality-based limitations discussed above, and the nature of the discharge, the discharge does not have potential to exceed either numerical or narrative standards established by the PSCWQC.

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

As of this time, Tribes are not required to maintain a 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs). A reopener clause however is included in the permit allowing the incorporation of more stringent requirements of a TMDL established for the receiving stream. Modification or revocation and reissuance of the permit shall follow regulations listed at 40 CFR Part 124.5.

VIII. ANTIDegradation

The PSCWQC, Subpart A of Section II, Antidegradation Policy and Implementation Plan, sets forth the requirements to protect designated uses through implementation of the Pueblo water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the Pueblo 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 limits are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water, per PSCWQC.

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 pollutant pH is identical with the previous permit. Limits for E. coli bacteria have replaced FCB based on changes in policy but are consistent with PSCWQC. The removal of FCB and its change to E. coli does not constitute antibacksliding since only the indicator bacteria have changed.

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at USFWS, Southwest Region 2 website, <http://ifw2es.fws.gov/EndangeredSpecies/lists/>, five species in Rio Arriba County are listed as endangered (E) or threatened (T). They are the Black-footed ferret (E) (*Mustela nigripes*), the Interior least tern (E) (*Sterna antillarum*), the Southwestern willow flycatcher (E) (*Empidonax traillii extimus*), the Rio Grande silvery minnow (E) (*Hybognathus amarus*) and the Mexican spotted owl (T) (*Strix occidentalis lucida*). The American bald eagle (*Haliaeetus leucocephalus*) was previously listed as endangered; however, the USFWS removed the American bald eagle in

the lower 48 states from the Federal List of Endangered and Threatened Wildlife Federal Register, July 9, 2007, (Volume 72, Number 130).

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 permit issued June 30, 2005, 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.
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 Tribal agency following regulations promulgated at 40 CFR124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers and to the Regional Director of the U.S. Fish and Wildlife Service prior to the publication of that notice. In addition the draft permit will also be sent to New Mexico and the Pueblo of San Ildefonso as downstream states for their review.

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 July 28, 2010.

B. 40 CFR CITATIONS

Citations to 40 CFR are as of April 15, 2011.
Sections 122, 124, 125, 133, 136

C. PUEBLO OF SANTA CLARA REFERENCES

Water Quality Code of the Pueblo of Santa Clara” (PSCWQC), revised November 5, 2002, approved by EPA April 7, 2006.

D. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through August 1, 2007.

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico, November 2009.