

**NPDES PERMIT NO. NM0028886
FACT SHEET**

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

APPLICANT

Sacramento Methodist Assembly
P.O. Box 8
Sacramento, NM 88347

ISSUING OFFICE

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

PREPARED BY

Suzanna M. Perea
Environmental Scientist
NPDES Permits & Technical Section (6WQ-PP)
Water Quality Protection Division
VOICE: 214-665-7217
FAX: 214-665-2191
EMAIL: perea.suzanna@epa.gov

DATE PREPARED

January 7, 2013

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued November 15, 2006, with an effective date of January 1, 2007, and an expiration date of December 30, 2011.

RECEIVING WATER – BASIN

Agua Chiquita Creek – Pecos River 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
CBOD	Carbonaceous biochemical oxygen demand (five-day unless noted otherwise)
CD	Critical dilution
CFR	Code of Federal Regulations
Cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitations 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
µg/L	Micrograms per liter
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
PCB	Polychlorinated Biphenyl
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
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

In this document, references to State WQS and/or rules shall collectively mean the State of New Mexico.

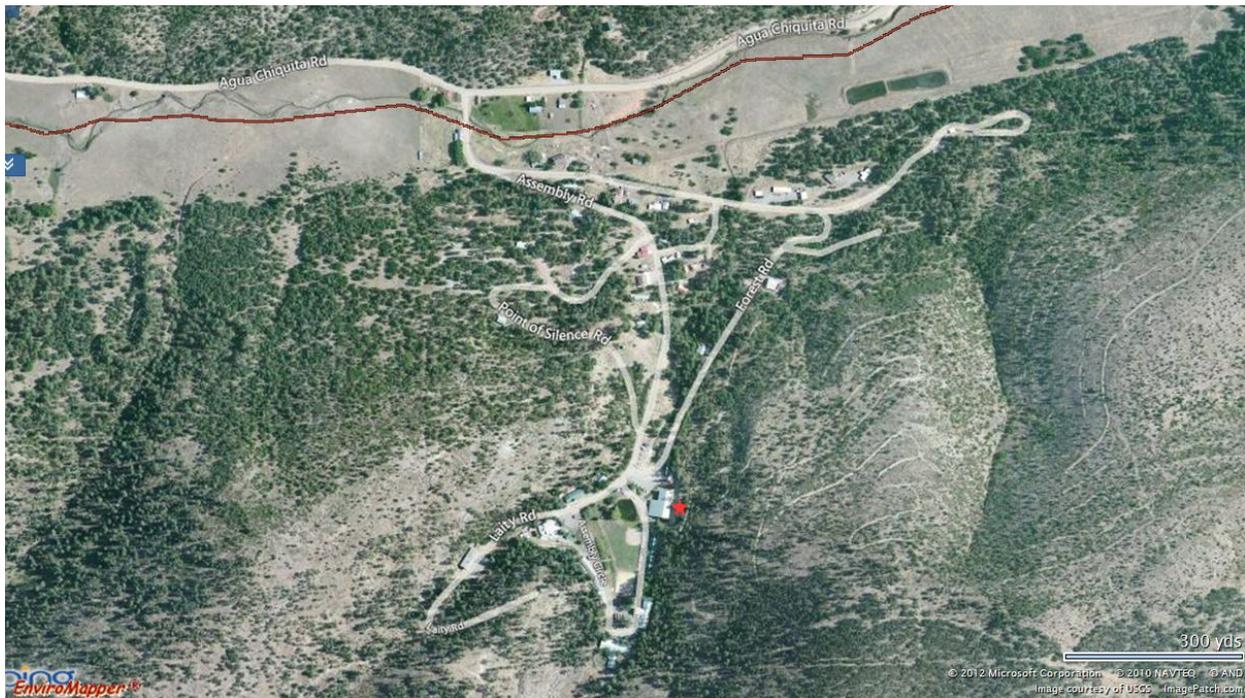
I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued November 15, 2006, with an effective date of January 1, 2007, and an expiration date of December 30, 2011, are:

1. The maximum pH limit has been modified from 8.8 s.u. to 9.0 s.u.
2. Fecal Coliform bacteria limits have been eliminated.
3. *E. coli* bacteria reporting requirements have been eliminated.
4. *E. coli* bacteria limits have been modified from a monthly geometric mean of 126 cfu/100ml to 206 cfu/100ml, and a single sample of 400 cfu/100ml to 940 cfu/100ml.
5. TSS and BOD minimum percent removal limits have been added.

II. APPLICATION LOCATION and ACTIVITY

As described in the application, the plant is located at 106 Assembly Circle, in Sacramento, Otero County, New Mexico. The effluent from the treatment plant is discharged into an unnamed intermittent stream, thence Agua Chiquita Creek, thence to Rio Penasco. The discharge is located on that water at latitude 32° 47' 25" N and longitude 105° 33' 35" W, in Otero County, New Mexico.



Under the SIC Code 4952, the applicant's activities are domestic wastewater treatment operations.

As described in the Compliance Evaluation Inspection Report dated June 24, 2011, the treatment processes for the facility are as follows:

The Sacramento Methodist Assembly wastewater treatment plant is a complete mix, extended aeration package plant with chlorination/dechlorination disinfection with a 0.042 MGD design flow capacity. The plant consists of four reactor tanks that operate in series with four accessible surface ports per tank. The reactors include aeration diffusers and double-sided weirs. Two-thirds of the reactor is dedicated to aeration and the remaining portion functions as a clarifier. The blowers alternate on pre-programmed cycles. The plant has a two day detention time for a total volume capacity of 76,000 gallons. Peak flow periods typically occur in the morning from 7:30 to 9:30 AM.

Following treatment in the reactors, wastewater flows into a chlorine contact chamber with chlorine tablets situated in vertical canisters. Dechlorination occurs in a tank located below the chlorination chamber.

Sludge is removed directly from the treatment plant yearly by a private septage hauler for offsite disposal.

III. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC, amended through) November 20, 2012. The facility discharges into an unnamed intermittent stream, thence Agua Chiquita Creek, thence to Rio Penasco in Waterbody Segment No. 20.6.4.208 of the Pecos River Basin. The Pecos River Basin has designated uses of this receiving water are fish culture, irrigation, livestock watering, wildlife habitat, coldwater aquatic life and primary contact. However, EPA has determined that the designated uses and criteria of the unclassified intermittent stream shall be utilized to establish effluent limitations. The designated uses for the unclassified intermittent stream are livestock watering, wildlife habitat, marginal warmwater aquatic life, and primary contact.

IV. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received March 21, 2012 are presented below in Table 1:

POLLUTANT TABLE – 1

Parameter	Max Daily Value	Max 30 Day Value	Long Term Avg Value
	(mg/l unless noted)		
Flow, million gallons/day (MGD)	0.02	0.02	NA

pH, minimum, standard units (SU)	6.6 su	6.6 su	N/A
pH, maximum, standard units (SU)	8.8 su	8.8 su	N/A
Biochemical Oxygen Demand, 5-day (BOD ₅)	10.50	30	NDR
Fecal Coliform (FCB) (colonies/100mL)	400 cfu	200 cfu	NDR
Total Suspended Solids (TSS)	10.50	30	NDR
Total Residual Chlorine (TRC)			
Temperature, winter	40°F	40°F	NA
Temperature, summer	70°C	70°F	NA

NDR – no data received

ND – Not detected

A summary of the last 24 months of available pollutant data from April 2010 through March 2012, taken from DMRs, shows no exceedances of permit limits for pH, BOD₅, TSS or TRC. The 30 day average *E. coli* permit limit was reported as an exceeded for the June 30, 2010 (185 cfu/100ml), July 31, 2011(344.6 cfu/100ml), and February 29, 2012 (210.5 cfu/100ml) reporting periods.

V. 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 applicant submitted a complete permit application on March 21, 2012. It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The existing NPDES permit initially issued November 15, 2006, with an effective date of January 1, 2007, expired on December 30, 2011.

VI. 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 (ELGs), numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the draft permit for BOD₅, TSS and percent removal for both. 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 Sacramento Methodist Assembly is a privately owned facility which treats sanitary wastewater. Secondary treatment technology-based ELGs and percent removal for both BOD and TSS, and pH are established at 40 CFR §133.102 (a), 40 CFR §133.102 (b) and 40 CFR §133.102 (c), respectively. BOD and TSS ELGs are 30 mg/l for the 30-day average, 45 mg/l for the 7-day average and 85 percent removal (minimum). ELGs for pH are between 6-9 s.u. Additionally, regulations at 40 CFR §122.45 (f)(1) require all pollutants limited in permits to have limitations expressed in terms of mass, such as pounds per day. When determining mass limits for POTWs, 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 BOD₅/TSS loading = 30 mg/l * 8.345 lbs/gal * 0.042 MGD = 10.5 lbs/day
 7-day average BOD₅/TSS loading = 45 mg/l * 8.345 lbs/gal * 0.042 MGD = 15.8 lbs/day

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

Technology-Based Effluent Limits – 0.042 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	10.5	15.8	30	45
BOD ₅ , % removal, minimum	≥ 85% (*1)	---	---	---
TSS	10.5	15.8	30	45
TSS, % removal, minimum	≥ 85% (*1)	---	---	---
pH	NA	NA	6.0 - 9.0 s.u.	

FOOTNOTE:

*1 Percent removal is calculated using the following equation: [(influent concentration – effluent concentration) ÷ influent concentration] x 100.

The facility will be required to maintain a log kept at the facility showing the influent of BOD₅ and TSS on a once per month frequency to be used to determine the removal percentage. The influent data is not required to be submitted but must be made available to EPA or its agents upon request.

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 the State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained. Permit limits will ensure downstream WQS will be met in accordance with 40 CFR §122.4(d).

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 November 20, 2012). The facility discharges into an unnamed intermittent stream, thence Agua Chiquita Creek, thence to Rio Penasco in Waterbody Segment No. 20.6.4.208 of the Pecos River Basin. The Pecos River Basin designated uses are fish culture, irrigation, livestock watering, wildlife habitat, coldwater aquatic life and primary contact. However, EPA has determined that the designated uses and criteria of the unclassified intermittent stream shall be utilized to establish effluent limitations. The designated uses for the unclassified intermittent stream are livestock watering, wildlife habitat, marginal warmwater aquatic life, 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 ELGs (technology based). State WQS that are more stringent than ELGs are as follows:

a. pH

The State of New Mexico WQS criteria applicable to the marginal warmwater aquatic life designated use require pH to be between 6.6 and 9.0 s.u. This is more limiting than the technology-based limit presented above. Therefore, the draft permit will maintain a limit of 6.6 to 9.0 s.u.

b. Bacteria

The NMWQS criteria require an *E. coli* bacteria of 206 cfu/100 mL monthly geometric mean and single sample of 940 cfu/100 mL end-of-pipe to protect the primary contact designated use. These values were modified from the previous permit because EPA determined the designated uses and criteria of segment 98 were to be used..

c. Total Residual Chlorine

The WQS for TRC is 11 µg/l for both chronic aquatic life and wildlife habitat, and 19 µg/l for acute aquatic life. State implementation procedures allow for a mixing zone to be used for chronic standards, while acute standards must be met at end-of-pipe. The NM Implementation Plan strategy for TRC requires the most limiting of the critical dilution/chronic criteria concentration of 11 µg/l or end-of-use/acute criteria concentration of 19 µg/l be used in determining the limit. The unclassified intermittent stream has a 4Q3 of 0 MGD; therefore, the critical dilution is 100%. The 11 µg/l would be the most limiting and will be the TRC limit proposed in the draft permit.

d. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality 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 and 2S, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to Publicly Owned Treatment Works (POTWs), but also to facilities that are similar to POTWS, but which do not meet the regulatory definition of “publicly owned treatment works” (i.e., 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. No additional considerations are required for these pollutants.

5. 303(d) List Impacts

Although the unnamed intermittent stream has not been identified as impaired in the “2012-2014 State of New Mexico Integrated Clean Water Act Section 303(d) / 305(b) Report,” the Rio Penasco from El Paso to Las Cruces has been identified as impaired for *E. coli* bacteria. End-of-pipe effluent limitations for *E. coli* bacteria have been established in this proposed permit. EPA has determined the established limitations do not cause or contribute to further impairment. The unclassified intermittent stream has designated uses of livestock watering, wildlife habitat, marginal warmwater aquatic life, and primary contact. The Rio Penasco is classified as Category 5/5C with irrigation, livestock watering, and wildlife habitat as fully supporting; coldwater aquatic life as not supporting; and, fish culture and primary contact have not been assessed. The monitoring schedule is set for 2012. The standard reopener language in the permit allows additional permit conditions if a future TMDL is established.

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). Technology based pollutants, BOD₅ and TSS, are proposed to be monitored one (1) time per month. Flow is proposed to be monitored five (5) times per week. These

frequencies are consistent with the current permit. The sample type for BOD₅ and TSS shall be by grab, also consistent with the current permit.

Water quality-based pollutant monitoring frequency for *E. coli* shall be monitored one (1) time per month by grab sample. TRC shall be monitored five (5) times per week by instantaneous grab sample. The pH shall be monitored one (1) time per month by grab sample, consistent with the previous permit. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection.

E. WHOLE EFFLUENT TOXICITY REQUIREMENTS

In Section V.C.4.c.ii.(b) above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 100%. Based on the nature of the discharge; drinking water treatment plant, the production flow; 0.118 MGD, the nature of the receiving water; intermittent, and the critical dilution; 100%, the Table 2 of the NMIP directs the WET test to be a 7 day chronic test using *Ceriodaphnia dubia* and *Pimephales promelas* at a once per permit term frequency for the permit term. According to the NMIP, when a test frequency is 1 time a year or less, the test should occur in winter or springtime when most sensitive juvenile life forms are likely to be present in receiving water and colder ambient temperatures might adversely affect treatment processes. This will generally be defined as between November 1 and April 30.

The draft 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.

DMR reports reveal one (1) passing test for the *Daphnia pulex* species during the last permit term. The EPA Reasonable Potential Analyzer (See Appendix A) indicates that RP exists. However, EPA is overruling this finding because Sacramento Methodist Assembly has not failed a WET test during their last permit term and is conducting tests at the maximum critical dilution. Reasonable potential for an excursion of the narrative criterion to protect the aquatic life against toxicity does not exist because lethal (acute test) toxic events were not demonstrated from the WET test submitted with the permit application. EPA concludes that this effluent does not cause or contribute to an exceedance of the State water quality standards. Therefore WET limits will not be established 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 unclassified intermittent stream in segment number 98. Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC

DISCHARGE MONITORING

30-DAY AVG MINIMUM

7-DAY MINIMUM

cfu/100mL to 940 cfu/100 mL, and pH from 6.6 to 8.8 s.u. to 6.6 to 9.0 s.u. See Part VI.C.3 above. The permit writer has determined that this change meets the exception to the antibacksliding provisions established at 40 CFR 122.44(l)(i)(B)(1).

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, <http://www.fws.gov/southwest/es/NewMexico/SBC.cfm>, eight species in Otero County are listed as endangered (E) or threatened (T). Three species are avian and include the Least Tern (*Sterna antillarum*) (E), the Southwestern willow flycatcher (*Empidonax traillii extimus*) (E), and the Mexican spotted owl (*Strix occidentalis lucida*) (T). Four of the species are flowering plants and include the Kuenzler's hedgehog cactus (*Echinocereus fendleri var. kuenzleri*) (E), the Sacramento prickly poppy (*Argemone pleiacantha* spp. *pinnatisecta*) (E), the Todsens's pennyroyal (*Hedeoma todsenii*) (E), and the Sacramento Mountains thistle (*Cirsium vinaceum*) (T). The lone mammalian species is the black-footed ferret (*Mustela nigripes*) (E). The American bald eagle (*Haliaeetus leucocephalus*) was previously listed in Otero County; 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, the 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. The EPA makes this determination based on the following:

1. The EPA determined that the previous permit, issued on November 15, 2006, would have "no effect" on listed threatened and endangered species nor will adversely modify designated critical habitat.
2. Except for the removal of the bald eagle in 2007, no changes 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. The EPA has received no additional information since November 15, 2006, which would lead to the revision of its determination.
4. EPA determines that Items 1, 2, and 3 result in no change to the environmental baseline established by the previous permit. Therefore, the EPA concludes that the reissuance of this permit will have "no effect" on listed threatened and endangered species nor will adversely modify designated critical habitat.

XI. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of this permit should have no impacts on historical properties since no construction activities are proposed during its reissuance.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of the State WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the State Water Quality Standards are either revised or promulgated. Should the State adopt a new WQS, and/or develop or amend a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with 40 CFR 122.44(d). 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 of New Mexico 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 draft permit:

A. APPLICATION(S)

EPA Application Form 2A received March 21, 2012.

B. 40 CFR CITATIONS

Citations to 40 CFR as of January 3, 2013.

Sections 122, 124, 125, 133, 136

C. STATE WATER QUALITY REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through November 20, 2012.

Procedures for Implementing NPDES Permits in New Mexico, March 15, 2012.

Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2012-2014.

D. OTHER

Compliance Evaluation Inspection of the Sacramento Methodist Assembly Wastewater Treatment Plant NPDES Permit No. NM0028886, June 11, 2011.