

NPDES PERMIT NO. NM0020672

FACT SHEET

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

APPLICANT

City of Gallup WWTP
P.O. Box 1270
Gallup, NM 87305

ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
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PREPARED BY

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DATE PREPARED

May 4, 2011

PERMIT ACTION

Proposed revocation and reissuance of the current permit issued May 30, 2006, with an effective date of July 1, 2006, and an expiration date of June 30, 2011.

RECEIVING WATER – BASIN

Rio Puerco of the West– Lower Colorado 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 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
ug/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
SQL	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
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

I. CHANGES FROM THE PREVIOUS PERMIT

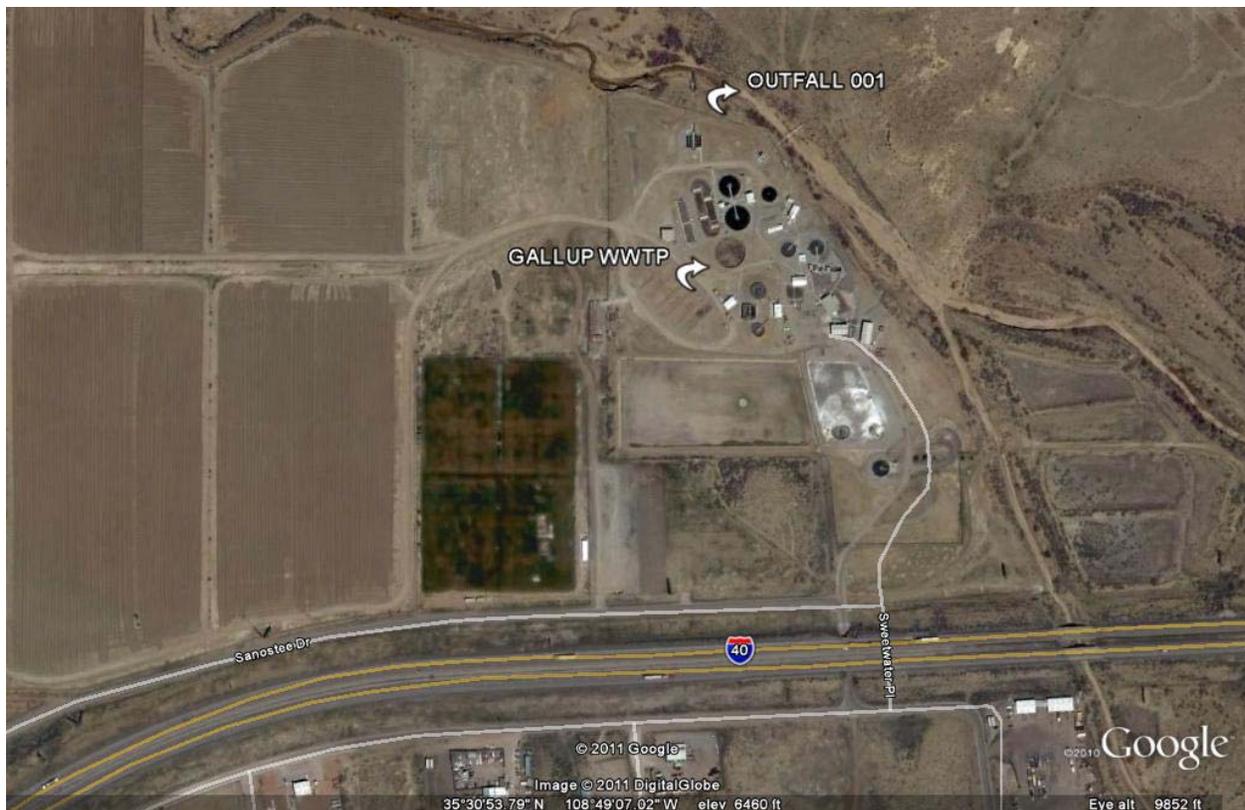
Changes from the permit previously issued May 30, 2006, with an effective date of July 1, 2006, and an expiration date of June 30, 2011, are:

- A. Fecal coliform bacteria limits have been eliminated.
- B. Copper limits have been made more stringent. A compliance schedule has been provided.
- C. Limits for pH have been made more restrictive.
- D. Monitoring frequencies have decreased for BOD, TSS and E. coli.
- E. Monitoring frequencies have increased for pH and TRC.
- F. Limits for minimum percent removal have been added for TSS and BOD.
- G. WET limits for the species *Pimephales promelas* have been added. A compliance schedule has been provided.
- H. The facility is required to submit an Industrial Waste Survey of its industrial users.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility is located at 800 Sweetwater Place, City of Gallup, McKinley County, New Mexico. Under the Standard Industrial Classification Code 4952, the facility is a POTW with a design flow of 3.5 MGD serving a population of 22,827.

PLAT OF FACILITY



PROCESS DESCRIPTION:

There are five lift stations that direct flow to the Gallup WWTP from the city. The influent flow enters through a 27-inch diameter interceptor that is metered through a 12-inch Parshall flume. The flow then enters the headwork's wet well where it is lifted approximately 23 feet by three screw pumps. The influent then flows by gravity through two band screens. Flow then enters a grit detritor and grit trap. Influent screenings and grit are emptied into waiting receptacles and taken to the landfill.

Flow from the head works is then directed to three primary clarifiers. A fourth primary clarifier is available for increased flows. Sludge and scum are removed and sent to the digesters. Flow is then recombined and sent to aeration basin #1.

Aeration basin #1 consists of four aeration zones which provide oxygen via fine bubble diffusers. Flow is then sent to aeration basin #2 which is an oxidation ditch equipped with four brush aerators. Flow is split at the end of the oxidation ditch and sent to three secondary clarifiers. All three clarifiers then introduce the return activated sludge (RAS) to the front of aeration basin #1 where it combines with the flow from the primary clarifiers. Waste activated sludge (WAS) and scum are removed and sent to the digesters.

Effluent from the secondary clarifiers, if necessary, can be split into lines that feed two disc filters. The filter effluent channel, filtered or bypassed, feeds the process water system providing the facility with its non-potable water supply. Effluent is then sent to the chlorine contact basin where it is disinfected with gas chlorine. Dechlorination is accomplished with sulfur dioxide. Effluent then flows to the outfall where it is metered through an 18" Parshall flume, or to the reuse wet well for pumping to the reuse system; golf course and sports complex.

WAS and primary sludge are pumped to the digestion process which includes a primary digester, mechanical (rotary) sludge thickener, secondary digester and a gravity thickener. Digested sludge can then be processed through the use of a two meter belt filter press or liquid hauled to the City owned sludge disposal site. The sludge may also be sent to four drying beds for added flexibility. The plant also has a sludge drying system capable of producing Class A biosolids.

The discharge from the POTW is to the Rio Puerco of the West; an intermittent stream that flows into Arizona and the Lower Colorado River Basin. The discharge is located at Latitude 35° 31' 03" North, Longitude 108° 49' 02" West.

III. EFFLUENT CHARACTERISTICS

The City was provided a list of the current MQLs to be used in pollutant testing for the application. A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received March 14, 2011, and additional data supplied March 11, 2011, are presented below:

POLLUTANT TABLE – 1

Parameter	Max	Avg
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	4.78	2.13
Temperature, winter	15.1°C	16.15°C
Temperature, summer	26.6°C	25.6°C
pH, minimum, standard units (su)	7.0	N/A
pH, maximum, standard units (su)	8.15	N/A
Biochemical Oxygen Demand, 5-day (BOD ₅)	48.1	8.68
Fecal coliform (#bacteria/100 ml)	4839	325.8
Total Suspended Solids (TSS)	39.0	6.17
Ammonia (NH ₃)	1.01	0.89
Chlorine, Total Residual (TRC)	0.00	0.00
Dissolved Oxygen (DO)	6.84	5.65
Total Kjeldahl Nitrogen (TKN)	8.0	8.0
Nitrate plus Nitrite Nitrogen	4.1	3.7
Oil & Grease	8.6	6.0
Phosphorus	0.05	0.05
Total Dissolved Solids (TDS)	1096	1075

POLLUTANT TABLE – 2 – Expanded Pollutant List

The facility has to sample and report all the priority pollutants identified in Part D, Expanded Effluent Testing Data of Form 2A. From that list, the following pollutants were either tested above MQLs or were tested at levels above EPA MQL and reported as being non detect. When a pollutant was tested at a detection level that was greater than the EPA MQL then for screening purposes that pollutant was assumed to have a concentration at that detection level.

Parameter (Pollutants Greater than MQL)	Max	Avg
	(ug/l unless noted)	
Hardness (As CaCO ₃)	90	84.7
Arsenic	2 ^{*1}	N/A
Beryllium	2 ^{*1}	N/A
Cadmium	2 ^{*1}	N/A
Copper	24	18
Aluminum, total	9	7
Aluminum, dissolved	5	5
Zinc	138	131

Footnote:

*1: Tested and reported as not detected at a detection limit greater than EPA MQL. Reported value is the detection level.

A summary of the last 24-months of available DMR pollutant data; September 2008, through August 2010, was reviewed. The DMR data shows that there were no exceedances for BOD, TSS, pH and copper. TRC had three reported daily maximum exceedances; April and June 2009, and April 2010. E. coli had three reported monthly average exceedances reported; January 2008, January 2009, and May 2010. TRC had two daily maximum exceedances reported: April 2009, and March 2010.

IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water,” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

The facility submitted a complete permit application March 14, 2011. It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a).

V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 require that NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the proposed draft permit for BOD, TSS and percent removal for both. Water quality-based effluent limitations are established in the proposed draft permit for copper, E. coli bacteria, pH, TDS, and TRC.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

The facility is a POTW treating sanitary wastewater. POTW's have technology-based ELG's established at 40 CFR Part 133, Secondary Treatment Regulation. Pollutants with ELG's established in this Chapter are BOD, 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). 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:

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

The loading limits are calculated as follows:

$$\begin{aligned} \text{30-day average TSS/BOD loading} &= 30 \text{ mg/l} * 8.345 \text{ lbs/gal} * 3.5 \text{ MGD} \\ \text{30-day average TSS/BOD loading} &= 876 \text{ lbs} \end{aligned}$$

Based on 40 CFR §122.45(f), all pollutants limited in permits shall have limitations expressed in terms of mass. Limits are established in the draft permit for the 7-day average limits for BOD and TSS as follows:

$$\begin{aligned} \text{7-day average BOD loading} &= 45 \text{ mg/l} * 8.345 \text{ lbs/gal} * 3.5 \text{ MGD} \\ \text{7-day average BOD loading} &= 1314 \text{ lbs} \end{aligned}$$

Technology-Based Effluent Limits – 3.5 MGD 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	876	1314	30	45
BOD, % removal, minimum (*1)	85%	---	---	---
TSS	876	1314	30	45
TSS, % removal, minimum (*1)	85%	---	---	---
pH	N/A	N/A	6.0 – 9.0 standard units	

FOOTNOTE:

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

The facility will be required to maintain a log and kept at the facility showing the influent of BOD and TSS on a once per week frequency to be used to determine the removal percentage. This 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 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 August 1, 2007). The facility discharges into the Rio Puerco of the West, an intermittent, unclassified water.

The CWA sections 101(a)(2) and 303(c) require water quality standards to provide, wherever attainable, water quality for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water, functions commonly referred to as “fishable/swimmable” uses. EPA's current water quality regulation effectively establishes a rebuttable presumption that “fishable/swimmable” uses are attainable and therefore should apply to a water body unless it can be demonstrated that such uses are not attainable. EPA does not expect the State to adopt uses for intermittent waters that cannot be attained, but in those instances, the State must submit a UAA to support an aquatic life designation that does not meet the CWA §101(a)(2) objective as required by 40 CFR 131.10(j)(1).

The designated uses of the receiving water are warmwater aquatic life, livestock watering, wildlife habitat, and primary contact.

The discharge into the Rio Puerco of the West starts from New Mexico state land and travels approximately 23.2 stream miles to the Arizona –New Mexico border. When the discharge reaches the Arizona border, the water (Puerco River within Navajo Nation) enters Navajo Nation (NN) land. Based on the permit writer’s judgment, the discharge from the facility will not have an impact on NN waters except during significant precipitation events. The Navajo Nation Surface Water Quality Standards (NNSWQS) have designated uses for the Puerco River (the Arizona segment name of the Rio Puerco of the West) as adopted pursuant to §104(b) and §201 of the Navajo Nation Clean Water Act. Designated uses for the Puerco River within Navajo Nation land are fish consumption, secondary human contact, aquatic & wildlife habitat and livestock watering. As the draft permit develops limitations and conditions below, appropriate sections of the NNSWQS will be identified.

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

Lacking stream segment specific limitations for bacteria, 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. WQS for E. coli bacteria is 126 cfu/100 ml daily monthly geometric mean and 410 cfu/100 ml daily maximum. The previous permit limited fecal coliform bacteria (FCB). The WQS have been changed to E. coli and will be proposed in the draft permit. FCB limits will no longer be required. The E. coli limits proposed in the draft permit are more stringent than those of the previous permit but a compliance period is not given for this parameter since there is no equipment change required. The new limits will be achieved by chlorine dosing changes. The elimination of FCB does not constitute antibacksliding as E. coli has replaced FCB as the indicator bacteria for the protection of primary contact beneficial uses.

NNSWQS for E. coli bacteria for the protection secondary human contact is less stringent; 126 cfu/100 ml daily monthly geometric mean and 575 cfu/100 ml daily maximum than the NMWQS. Additional limitations are not required for protection of NNSWQS.

b. pH

Limits for pH are also based on 20.6.4.900 NMAC and for both primary contact and warmwater aquatic protection the pH shall be 6.6 to 9.0 su. These limits are more restrictive than the previous permit and are also more restrictive than the technology-based limits presented earlier and the draft permit will propose these water quality limits in the draft permit.

NNSWQS for pH for secondary human contact and livestock watering; 6.5 to 9.0, are less stringent than NMWQS and additional limitations are not required to protect the beneficial uses.

c. Total Dissolved Solids – Colorado River Salinity Control Program

The discharge to the Rio Puerco of the West is part of the Colorado River Basin where a basin wide Colorado River Salinity Control Program (CRSCP) was established by EPA in December 1974. The objective of the CRSCP, as provided in Sections I.A. and I.B., is to achieve "no salt return" whenever practicable for industrial discharges and an incremental increase in salinity over the supply water for municipal discharges. For municipal dischargers, the CRSCP states that "[T]he incremental increase in salinity shall be 400 mg/l or less, which is considered to be a reasonable incremental increase above the flow weighted average salinity of the intake water supply." Additionally a municipal discharger may be granted an exception from limits when the total mass load from the facility is less than one ton (2000 lbs) per day. Data from the permit application shows that the facility discharges approximately 18,445 lbs/day TDS, well above the 2000 lbs/day. Based on data supplied by the applicant in the permit application package, the net TDS increase between drinking water intake and the WWTP discharge is approximately 300 mg/l. The facility demonstrates that it can meet the CRSCP net TDS incremental increase of 400 mg/l.

The draft permit will maintain the TDS report requirements established in the previous permits but will require reporting changes that will enable the impacts of TDS discharges on the receiving water to be seen directly in DMR data. The permit will require TDS concentration report requirements for the drinking water intake plant on a monthly flow-weighted basis. The permit will continue the TDS effluent reporting but will require concentration reporting in addition to the current loading monthly values. Lastly, the draft permit will establish a separate report requirement showing the net difference between the WWTP discharge and the drinking water influent. This will allow for direct net increase impacts that the CRSCP regulations require. These permit report requirements are consistent with recently issued and renewed NPDES permits that discharge into the Colorado River Basin from New Mexico facilities. The CRSCP requirements provide that TDS analysis may use either direct TDS measurements or electrical conductivity where a satisfactory correlation with TDS has been established. The correlation should be based on a minimum of five different samples.

NNSWQS have the same CRSCP as these described above and no additional limitations are required for the protection of CRSCP beneficial uses.

d. 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 and 2S, 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 a major POTW for permitting purposes and must supply the expanded pollutant testing list described in EPA Application Form 2A as presented above in Part III of this Fact Sheet.

Based on the pollutant data in Part III of this Fact Sheet, a water quality screen has been run to determine if discharged pollutant concentrations demonstrate RP to exceed WQS for the various designated uses. If RP exists, the screen would also calculate the appropriate permit limit needed to be protective of such designated uses. The screen is based on the NMIP as of May 3, 2011. The application Form 2A provided the hardness; 90 mg/l, expressed as CaCO₃, for those hardness dependent WQS. The 4Q3 is zero (0); the receiving water is an intermittent waterbody. When the 4Q3 is zero, the discharge must meet end-of-pipe criteria and the CD is 100%. The RP screen is attached as **Appendix 1** of the Fact Sheet. As shown in **Appendix 1** of the Fact Sheet, copper appears to demonstrate RP to violate WQS consistent with the designated uses for the receiving water. Copper was limited in the previous permit and will be continued in the draft permit. The permit limits are slightly more stringent in this draft permit than the previous permit limits since the hardness based criteria has changed slightly between the 2002 WQS in effect when the previous permit was developed and the current 2007 WQS. The differences are as follows:

	<u>2002 WQS</u>	<u>2007 WQS</u>
Acute criteria:	$e^{(0.9422 [\ln(\text{hardness})] - 1.7408)}$	$0.960 e^{(0.9422 [\ln(\text{hardness})] - 1.700)}$
Chronic criteria:	$e^{(0.8545 [\ln(\text{hardness})] - 1.7428)}$	$0.960 e^{(0.8545 [\ln(\text{hardness})] - 1.702)}$

The draft permit will propose a daily maximum limit of 21.8 ug/l and a monthly average limit of 14.5 ug/l. These values are more restrictive than the previous limits of 29.3 ug/l and 19.6 ug/l respectively. Since changes in the WQS between the previous permits 2002 WQS and the current 2007 WQS lead to the criteria changes, the draft permit will grant a twelve (12) month compliance schedule to achieve the updated limits. During the 12-month compliance period, the permit will limit copper to the previous permit limit; daily maximum of 29.3 ug/l and monthly average of 19.6 ug/l.

NNSWQS for aluminum and arsenic are identical or less stringent than the NMWQS. The NNSWQS hardness based criteria for cadmium, copper and zinc are identical as the NMWQS. No additional permit limits are required to protect for NNSWQS and the beneficial uses of the receiving water.

iii. TRC

The previous permit established a TRC limit 11 ug/l and this will be continued in the draft permit.

NNSWQS are identical with NMWQS and no additional considerations are required for this pollutant.

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 May 2011, NMIP. Flow is proposed to be monitored continuously by totalizing meter. E. coli bacteria, BOD, and TSS shall be sampled once per week. TDS sampling from the drinking water source and the discharge effluent shall be sampled once per month consistent with the CRSCP guidelines. TRC and pH shall be sampled daily using instantaneous grab samples. Regulations at 40 CFR §136 define instantaneous grab as being analyzed within 15-minutes of collection. Copper shall be sampled once per month. Monitoring frequencies have decreased for BOD, TSS and E. coli and have increased for pH and TRC. Sample type is the same as the previous permit. Grab samples shall be used for E. coli, pH and TRC. BOD, copper, TDS and TSS shall use 6-hour composite samples. The new parameters TSS and BOD percent removal calculations shall be required once per week.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP, May 3, 2011. Table 11 of Section V of the NMIP outlines the type of WET testing for different types of discharges. Analysis of past WET data to determine RP is shown on **Appendix 2** of the Fact Sheet.

OUTFALL 001 (For *Daphnia pulex* only)

Based on the nature of the discharge; POTW, the design flow, the nature of the receiving water and the critical dilution; 100%, the NMIP directs the WET test to be a 48 hour acute test using *Daphnia pulex* at a once per three-month frequency starting with the first year of the permit consistent with the NMIP. If all these four tests pass the lethal test endpoints then the permit may allow a frequency reduction to once per six-months for *Daphnia pulex*. Any failure shall re-establish all tests to once per three-month for the remainder of the permit. Based on the WET Recommendation shown in **Appendix 2**, no WET limits will be established in the proposed permit for *Daphnia pulex*.

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 Rio Puerco of the West. Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC

DISCHARGE MONITORING

30-DAY AVG MINIMUM

7-DAY MINIMUM

Whole Effluent Toxicity Testing
(48 Hr. Static Renewal) (*1)

Daphnia pulex

REPORT

REPORT

EFFLUENT CHARACTERISTIC

MONITORING REQUIREMENTS

FREQUENCY

TYPE

Whole Effluent Toxicity Testing
(48 Hr. Static Renewal) (*1)

Daphnia pulex

Once/Quarter (*2)

24 Hr. Composite

FOOTNOTES:

*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 Monitoring frequency reduction available. See Part II, Whole Effluent Toxicity Testing Requirements for details.

The CD is 100%. In addition to the CD, the permittee is required to perform four other dilutions in addition to a control consistent with the NMIP. The other dilutions are 32%, 42%, 56% and 75%.

OUTFALL 001 (For *Pimephales Promelas* only)

Out of eight (8) tests performed during the last permit term the effluent exhibited two failures at the lethal endpoint for the test species *Pimephales promelas*. The facility has demonstrated exceedances of the state WQS. EPA finds that since 25% of WET tests failed at a dilution point below the critical dilution of 100%, WET limits for toxicity are warranted for this test species. The previous permit did not require testing for *Pimephales promelas*. However, testing was still performed for this test species. According to 40 CFR 122.41 (l) (4) (ii), “if the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR 40 part 136... the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR... specified by the Director.” Therefore, EPA will take this data into account when making their biomonitoring determination. EPA then finds that WET limits for toxicity will be included in this permit for the *Pimephales promelas* test species.

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 Rio Puerco of the West. Discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>	
	<u>30-DAY AVG MINIMUM</u>	<u>7-DAY MINIMUM</u>
Whole Effluent Toxicity Limit (PCS 22414) (7-Day NOEC) <u>1/</u>	100%	100%
<i>Pimephales promelas</i>	REPORT	REPORT

<u>EFFLUENT CHARACTERISTIC</u>	<u>MONITORING REQUIREMENTS</u>	
	<u>FREQUENCY</u>	<u>TYPE</u>
Whole Effluent Toxicity (7-Day NOEC) <u>1/</u>		
<i>Pimephales promelas</i>	1/3 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 on three (3) years after the permit effective date. See PART I, Compliance Schedules, and PART II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

F. EFFLUENT TESTING FOR APPLICATION RENEWAL

In addition to the parameters identified in this fact sheet, EPA designated major POTW's are required to sample and report other parameters listed in tables of the EPA Form 2A and WET testing for its permit renewal. The minimum pollutant testing for NPDES permit renewals specified in Form 2A requires three samples for each of the parameters being tested. Current practice is to obtain the three samples over a short time frame, sometimes within two weeks during the permit renewal testing process. In order to obtain a meaningful snapshot of pollutant testing for permit renewal purposes, the draft permit shall require that the testing for Tables A.12, B.6, and Part D of EPA Form 2A, or its equivalent if modified in the future, during the second, third and fourth years after the permit effective date. This testing shall coincide with any required WET testing event for that year. The permittee shall report the results as a separate attachment in tabular form sent to the Permits and Technical Assistance Section Chief of the Water Quality Protection Division within 60 days of receipt of the lab analysis and shall also be reported on the NPDES permit renewal application Form 2A or its equivalent/replacement.

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." The specific requirements in the permit apply as a result of the design flow of the facility, the type of waste discharged to the collection system, and the sewage sludge disposal or reuse practice utilized by the treatment works. The permittee shall submit an Annual Sludge Status report in accordance with the NPDES Permit NM0020672, Parts I and Parts IV.

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 applicant identified no non-categorical Significant Industrial User's (SIU) and no Categorical Industrial User's (CIU) in the permit application. The EPA has tentatively determined that the permittee will not be required to develop a full pretreatment program. However, the permit continues limits for copper from the previous permit. Pursuant to requirements contained in 40 CFR §403.8(f)(2), the permittee shall complete an Industrial Waste Survey (IWS) based on qualitative analysis of pollutants being contributed by all industrial sources in its entire system. The IWS shall be due by twelve (12) months from the permit effective date. The goal of the Gallup IWS is to identify possible sources of copper into the collection system. The IWS does not require any sampling at the source.

D. OPERATION AND REPORTING

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

VII. 303(d) LIST

The Rio Puerco of the West is not listed as being impaired on the recent State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2010 – 2012. No additional pollutant limitations are required based on this list. The standard reopener language in the permit allows additional permit conditions if warranted by future changes and/or new TMDLs.

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 and concentration requirements of the previous permit except for copper and FCB. The removal of FCB is consistent with the change in criteria established in the NMWQS and was discussed above. The change of the copper limits is also based on changes of NMWQS discussed above and is consistent with permit procedures.

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at USFWS, Southwest Region 2 website, <http://ifw2es.fws.gov/EndangeredSpecies/lists/>, four species in McKinley County are listed as endangered (E) or threatened (T). The Black-footed ferret (E, EXPN) Experimental Population Non-Essential (EXPN) (*Mustela nigripes*), the Southwestern willow flycatcher (E) (*Empidonax traillii extimus*), the Zuni fleabane (T) (*Erigeron rhizomatus*) 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. When the EPA previously issued the permit for this facility in 2006, it determined that issuance of the permit would have “no effect” on any listed or proposed threatened or endangered species or their critical habitat. Review of available material reveals that the primary cause for population declines leading to threatened or endangered status for all four species to be destruction of 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 identical to the previous permit except for the removal of FCB and a slightly more stringent copper limit both of which are consistent with the States WQS.
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. A copy of the proposed permit will be sent to the Navajo Nation as a downstream state for comment on the permit.

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 2A received March 14, 2011.

B. 40 CFR CITATIONS

Citations to 40 CFR are as of April 8, 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, 2011.

Statewide Water Quality Management Plan, December 17, 2002.

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

D. NAVAJO NATION REFERENCES

Navajo Nation Surface Water Quality Standards 2007, as amended through May 13, 2008.

E. CORRESPONDENCE

E-mails, from Dennis Wing, Severn Trent Services, to Larry Giglio, EPA, January 11, 14, March 7, April 11 and 12, 2011, additional information regarding the application.