NPDES PERMIT NO. NM0026395
FACT SHEET

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

APPLICANT

City of Carlsbad
Wastewater Treatment Plant
45 Tell Tale Lane
Carlsbad, NM 88220

ISSUING OFFICE

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Region 6
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PREPARED BY

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DATE PREPARED

March 11, 2019

PERMIT ACTION

Renewal of a permit previously issued on November 21, 2013, with an effective date of January 1, 2014, and an expiration date of December 31, 2018.

RECEIVING WATER – BASIN

Pecos River – Pecos River Basin

I. CHANGES FROM THE PREVIOUS PERMIT

- Sufficiently Sensitive Methods sampling requirements have been added;
- Limits for BOD_5 have been changed to 7/17 mg/L from 30/45 mg/L along with the mass loadings;
- Aluminum monitoring requirements have been removed; and,
- DMR electronic reporting requirements have been added.

II. APPLICATION LOCATION and ACTIVITY

As described in the application, the plant site is located at 45 Blackfoot Road, Eddy County, Road 606, New Mexico. Under the Standard Industrial Classification Code 4952, the facility is a POTW with a design flow of 5 MGD serving a population of 32,000. The effluent from the treatment plant is discharged to the segment 20.6.4.202 (State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC)) of the Pecos River Basin. The discharge is located at Latitude 32° 24' 28.12" North and Longitude 104° 10' 43.33" West.

As described in the application and the Compliance Evaluation Inspection on September 28, 2016, the WWTP was upgraded a few years ago. The WWTP is composed of head-works, an automatic bar screen, fine screen, aerated grit chamber, 2 primary clarifiers, aerobic digesters, reuse water storage tank, waste gas burners, aeration basins, secondary clarifiers, storm retention ponds, bacteria control, and discharge. There are approximately 21 lift stations within the entire collection system. All raw sewage from the City is lifted by the primary lift station located on the west side of the Pecos River to the WWTP located on the east side of the Pecos River. The primary lift station is at the City's former WWTP, it has 2 lift pumps and automatic back-up power, an alarm and callout system. Fifty-two manholes and the lift station were rehabbed.

The flow travels from the headwork to a splitter box, then to either of two primary clarifiers which are run in parallel. Gritt and screening are hauled to the landfill. The flow is divided between the two primary clarifiers, then recombines and is treated in four aeration basins. The basins have both anoxic and aeration zones for nitrogen removal. From the aeration basin, the wastewater flows into two second clarifiers. After solids are dropped out in the two secondary clarifiers effluent flows through a dual bank UV system for final disinfection. Some flow is stored for reuse on the city golf course and other facilities. The effluent flow is measured using an 18-inch Parshall flume with a secondary Drexelbrook flow totalizing meter. The final effluent is discharged to the Pecos River through an effluent pipeline above the river.

Sludge from two primary clarifiers is sent to the primary sludge digesters. The Return Activated Sludge (RAS) from the secondary clarifiers is pumped to the head of the activated sludge basins. The facility has solid bottom sludge beds with drains for decanting liquid. The decant water from the sludge beds is pumped back to the head of the WWTP, along with the decant water from the belt press. The sludge on the solid beds is mixed and turned to enhance drying using a front-end loader. It is then stockpiled and composted to meet Class A pathogen reduction requirements. The composted sludge is used on City properties and given away to the public.

III. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in "New Mexico State Standards for Interstate and Intrastate Surface Waters," (20.6.4 NMAC, effective August 11, 2017). The facility discharges to Pecos River in segment 20.6.4.202 (State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC)) of the Pecos River Basin. This segment includes the designated uses of industrial water supply, irrigation, livestock watering, wildlife habitat, warm-water aquatic life, and primary contact.

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 ephemeral 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).

IV. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A and addendum received on June 18, 2018 and November 14, 2018, respectively, are presented in Tables 1 and 2.

TABLE 1:

Parameter	Max	Avg
Flow, million gallons/day (MGD)	4.33	2.47
Temperature, winter, °C	17.9	15.2
Temperature, summer, °C	25.2	24.6
pH, minimum, standard units (SU)	6.78	---
pH, maximum, standard units (SU)	7.5	---
Biochemical Oxygen Demand, 5-day (BOD_5)	15.93 mg/l	5.21 mg/l
Fecal Coliform (cfu/100 ml)	69	2.96
Total Suspended Solids	31.2 mg/l	5.39 mg/l
Ammonia	0.57 mg/l	0.23 mg/l
Chlorine, Total Residual	N/A	N/A
Dissolved Oxygen	8.96 mg/l	8.62 mg/l
Total Kjeldahl Nitrogen	6.25 mg/l	1.86 mg/l
Nitrate plus Nitrite Nitrogen	11.85 mg/l	7.84 mg/l
Total Dissolved Solids	1920 mg/l	1,117.41 mg/l

The facility is required to sample and report all the priority pollutants identified in Part D, Expanded Effluent Testing Data of Form 2A. From that list, the pollutants in Table 2 were either tested above the minimum quantification levels (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. For toxics that were tested at the minimum quantification level and reported as less than the MQL, those pollutants are not shown.

TABLE 2:

Parameter	Maximum	Average
Hardness (as CaCO3)	520 mg/l	510 mg/l
Antimony	0.00052 mg/l	0.00052 mg/l
Arsenic	0.00058 mg/l	0.00058 mg/l
Aluminum	0.021 mg/l	
Mercury	0.00012 mg/l	0.000061 mg/l
Copper	0.0038 mg/l	0.00305 mg/l
Nickel	0.0026 mg/l	0.0026 mg/l
Selenium	0.0013 mg/l	0.0013 mg/l
Zinc	0.037 mg/l	0.03 mg/l
Beryllium	0.00086 mg/l	0.00086 mg/l
Bis(2-ethylhexyl)phthalate	0.0007 mg/l	0.0007 mg/l
Toluene	0.00011 mg/l	0.00011 mg/l
1,2-Dichloroethane	0.00038 mg/l	0.00038 mg/l
Lead	0.00066 mg/l	0.00066 mg/l
Silver	0.000024 mg/l	0.000024 mg/l
Thallium	0.000042 mg/l	0.000042 mg/l

EPA reviewed the facility's DMR pollutant data collected from January 2014 through January 2017 and found the facility did not exceed any of the permit effluent limits.

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.

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 21, 2013, with an effective date of January 1, 2014, and an expiration date of December 31, 2018 is administratively continued until this permit is reissued.

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 ELGs, 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 BOD_5, 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_5, 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. POTWs have technology-based ELGs established at 40 CFR 133, Secondary Treatment Regulation. Pollutants with ELGs established in this Chapter are BOD_5, TSS and pH. BOD_5 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). ELGs for pH are between 6-9 standard units (su) 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 POTWs or WWTPs, the plant's design flow is used to establish the mass load. Mass limits in Table 3 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 TSS loading = 30 mg/l * 8.345 lbs/gal * 5.0 MGD
30-day average TSS loading = 1252 lbs

7-day average TSS loading = 45 mg/l * 8.345 lbs/gal * 5.0 MGD
7-day average TSS loading = 1878 lbs

30-day average BOD_5 loading = 30 mg/l * 8.345 lbs/gal * 5.0 MGD
30-day average BOD_5 loading = 1252 lbs

7-day average BOD_5 loading = 45 mg/l * 8.345 lbs/gal * 5.0 MGD
7-day average BOD_5 loading = 1878 lbs

Technology-Based Effluent Limits – 5.0 MGD design flow.

TABLE 3:

EFFLUENT CHARACTERISTICS - Parameters	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD_5	1252 lbs/day	1878 lbs/day	30 mg/L	45 mg/L
BOD_5, % removal, minimum [*1]	≥ 85%	---	---	---
TSS	1252 lbs/day	1878 lbs/day	30 mg/L	45 mg/L
TSS, % removal, minimum [*1]	≥ 85%	---	---	---
pH	N/A	N/A	6.0 – 9.0 standard units	

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

The facility will be required to maintain a log and kept at the facility showing the influent of BOD_5 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.

I. 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, state or tribal WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with State water quality standards and the applicable water quality management plan.

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 Numerical Standards

a. GENERAL COMMENTS

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC, approved by EPA on June 8, 2017). The facility discharges into the Pecos River in segment number 20.6.4.202, which has designated uses industrial water supply, irrigation, livestock watering, wildlife habitat, warm-water aquatic life, and primary contact.

b. 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). The State WQS that are more stringent than effluent limitation guidelines are as follows:

i. pH

The State of New Mexico stream segment specific WQS require pH to be between 6.6 and 9.0. These limits are more restrictive than the technology-based limits presented earlier. The pH limits of 6.6 to 9.0 in the previous permit will be remained in the draft permit.

ii. Bacteria

The E. coli bacteria limits applicable to 20.6.4.202 NMAC receiving water are 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml single maximum. The E. coli bacteria limits of 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml single maximum in the previous permit will be remained in the draft permit.

iii. Total Residual Chlorine

The facility uses UV system for bacteria control. The limit will be maintained in the permit, but its testing shall only be done when chlorine is used for bacteria control or major cleaning of treatment equipment. The draft permit will maintain TRC limit of 11 ug/l from the previous permit.

iv. Dissolved Oxygen

The State of New Mexico WQS criterion applicable to the warm-water aquatic life designated use is at least 5 mg/L for dissolved oxygen. As a part of the permitting process, EPA used a steady-state model LA-QUAL to evaluate the impact of facility effluent on the receiving water

dissolved oxygen. A complete characterization of the receiving water body was not available. EPA used default values to estimate the various unavailable hydrodynamic and water quality parameters. EPA used adjusted 4Q3 of 10.074 cfs (see Section 4a below) for receiving stream flow and facility effluent data provided in the permittee's application. The model results show an excursion of the receiving stream DO standard of 5 mg/L when the BOD_5 limits of 30 mg/l for monthly average and 45 mg/l for 7-day maxima were applied (see graph with 30/45 mg/L BOD_5 in Appendix 1; other detail information is available upon request). Various BOD_5 factors were considered and simulated to achieve the DO criterion; EPA believes the optimal levels of BOD_5 are 7/17 (see attached graph with 7/17 BOD_5 in Appendix 2). The reported effluent BOD_5 in form 2A are 5.21 mg/L (avg.) and 15.93 mg/L (max.); which are below the 7/17 levels. EPA establishes the water-based limits for BOD_5 of 7 mg/L (for monthly average) and 17 mg/L (for 7-day maxima) in the draft permit; mass loadings are calculated with the same method for TSS above. Compliance schedule is not needed because the effluent has met this newly-established limits. This BOD_5 limitation may be re-evaluated against the WQS in the next permit renewal process.

v. Toxics

The Clean Water Act 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 criterion, the permit must contain an effluent limit for that pollutant.

All applicable facilities are required to fill out appropriate sections of the Form 2A, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to Publicly Owned Treatment Works (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 classified as a "major" discharger with a design flow more than 1.0 MGD, and must complete Part D, "Expanded Effluent Testing Data" of form 2A. This data was included above in Section X "Effluent Characteristics." The "Pollutant Table" above submitted by the applicant showed pollutants at concentrations above minimum quantification levels (MQL).

The facility is designated as a major and supplied the Form 2A expanded pollutant testing list in their June 9, 2016 application. However, some of the pollutant testing data in the submitted Form 2A were found erroneously reported. On May 31, 2017, the facility submitted the revised data presented in Part III of this Fact Sheet.

Antimony, Arsenic, Aluminum, Mercury, Copper, Lead, Nickel, Selenium, Bis(2-Ethylhexyl) Phthalate, Thallium, Silver, Toluene, Beryllium, 1,2-Dichloroethane and Zinc were found to be above minimum MQL. All of these pollutants will be evaluated for RP to cause or contribute to

WQS exceedances. If RP exists, the screen would also calculate the appropriate permit limit needed to be protective of such designated uses. The EPA conducted the RP screening analysis which is based on the NMIP as of March 15, 2012. The results of the RP screening (see Appendix 3) demonstrate no RP to exceed the State water quality standards consistent with the designated uses for the receiving water. No RP existed for Aluminum, and DMR shows the Aluminum's levels in the effluent are very minimal to none. In addition, the State had a change in Water Quality Standards for Aluminum from Dissolved Aluminum to Total Recoverable Aluminum since the last permit was issued. A monitoring requirement for Aluminum will not be carried forward in the draft permit as consistent with 40 CFR 122.44(l)(i)(B)(l).

4. Whole Effluent Toxicity Limitations

a. GENERAL COMMENTS

The State has established narrative criteria, which in part state that:

"...surface waters of the state shall be free of toxic pollutants from other than natural causes in amounts, concentrations or combinations that affect the propagation of fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or that will or can reasonably be expected to bioaccumulate in tissues of fish, shellfish and other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors or health risks to human consumers of aquatic organisms...." (NM WQS Section 20.6.4.13.F.)

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. Table 11 (page 42) of the NMIP outlines the type of WET testing for different types of discharges. Analysis of the facility past WET data to determine RP was conducted and shown in the Appendix 4. The results show no reasonable potential. EPA concludes that based on the passed WET tests and the Reasonable Potential Analyzer, reasonable potential to cause toxicity does not exist. The draft permit will not propose any WET limits. However, continuation of WET monitoring is proposed in the draft permit. The WET test requirement in the previous permit will be continued in the draft permit. The permittee shall continue to conduct a 7-day chronic test using a once per quarter frequency for *Ceriodaphnia dubia* and a once per quarter frequency for the entire permit term for *Pimephales promelas*. If during the first year all four tests pass both the lethal and sub-lethal test end points then the permit may allow a frequency reduction of once per six-months for *Ceriodaphnia dubia* only. Any failure shall re-establish all tests for the *Ceriodaphnia dubia* test species to once per three-month for the remainder of the permit. The *Ceriodaphnia dubia* test species shall resume monitoring at a once per quarter frequency on the last day of the permit.

The NMED provided the data obtained from a USGS Station (USGS08406500) in Pecos River near Malaga, NM. The calculated low flow or 4Q3 (based on the period of record from April 1, 1914 through March 20, 2018) is 13.896 cubic feet per second (8.891 MGD). Since the USGS Station is downstream of the facility, the low flow will be adjusted by subtracting the facilities long term average flow of 3.822 cfs (2.47 MGD) resulting in an adjusted low flow of 10.074 cfs (6.511 MGD). Long-term harmonic mean low flow used for human health calculations is 37.046 cfs (23.943 MGD). CD is calculated as follows:

CD = Qe / [Qe + Qa]

Where: Qa = 6.511 MGD
Qe = 5 MGD

CD = 5 / [5 + 6.511] CD = 0.434 or 43.4%

The critical condition is 43%. The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 1 dilution series. These additional effluent concentrations shall be 18%, 24%, 32%, 43%, and 57%.

The permittee shall conduct separate whole effluent toxicity tests in accordance with the Table 4.

Table 4

WHOLE EFFLUENT TOXICITY (7-day Static renewal) *1/	**NOEC**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Pimephales promelas	Report	Once/Quarter	24-Hr Composite
Ceriodaphnia dubia	Report	Once/Quarter	24-Hr Composite

FOOTNOTE:
*1/ Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

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 March 2012, NMIP. The monitoring frequencies for TSS, BOD_5, E. coli, TRC, pH and flow are consistent with the previous permit. Flow is proposed to be monitored continuously using a totalizing meter. BOD_5, pH, E. coli and TSS, are proposed to be monitored once per week. Sample type for BOD_5 and TSS is 24-hr composite sample. E. coli and pH shall be by grab. TRC shall be monitored daily during periods when chlorine is used in the treatment process or is used to disinfect treatment equipment.

E. SEWAGE SLUDGE PRACTICES

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.

F. 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.

G. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The treatment plant has no non-categorical Significant Industrial User (SIU) and no Categorical Industrial User (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 Section 307(b) of the CWA and 40 CFR Part 403.

H. 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. Reporting requirements and the requirement of using EPA-approved test procedures (methods) for the analysis and quantification of pollutants or pollutant parameters are contained in 40 CFR 122.41(l) and 40 CFR 122.21 (e), respectively. As required by 40 CFR 127.16, all Discharge Monitoring Reports (DMRs) shall be electronically reported. The monitoring results will be available to the public.

XII. 303(d) LIST/TMDL REQUIREMENTS

Pecos River (Six Mile Dam Lake to Lower Tansil Lake) is listed on the "2014-2016 State of New Mexico Integrated Clean Water Act Section 303(d) / 305(b) Report." Pecos River waterbody is impaired for PCB in Fish Tissue. There is no TMDL in place. Once the TMDL(s) is developed and approved, 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.

The standard reopener language in the permit allows additional permit conditions if warranted by new or revised TMDLs.

XIII. 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.

XIV. 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. Besides maintaining the effluent limitation requirements of the previous permit for TSS, pH and E. coli, the proposed permit includes the more restrictive effluent limitation for BOD_5. Aluminum monitoring requirements will not be carried over into the proposed permit due to minimal detection to none in the effluent and no existed RP for Aluminum. All of the changes represent permit requirements that are consistent with the WQS and with WQMP.

XV. 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/EndangeredSpecies/lists/, fourteen species in Eddy County are listed as endangered (E), or threatened (T). Two of the species are fishes and include the Pecos gambusia (E) (*Gambusia nobilis*), Pecos bluntnose shiner (T) (*Notropis simus pecosensis*). Five of the species are avian and include the Mexican spotted owl (T) (*Strix occidentalis lucida*), Yellow-billed Cuckoo (*Coccyzus americanus*) (T), Piping Plover (T) (*Charadrius melodus*), Least tern (E) (*Sterna antillarum*), and Southwestern willow flycatcher (E) (*Empidonax traillii extimus*). Four of the species are flowering plants and include Lee pincushion cactus (T) (*Coryphantha sneedii var. leei*), Sneed pincushion cactus (E) (*Coryphantha sneedii var. sneedii*), Kuenzler's hedgehog cactus (T) (*Echinocereus fendleri var. kuenzleri*), and Gypsum wild-buckwheat (T) (*Eriogonum gypsophilum*). The rest of the species are clams and crustaceans. They are Texas Hornshell (E) (*Popenaias popeii*) and Diminutive Amphipod (E) (*Gammarus hyalleloides*), respectively.

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.

The yellow-billed cuckoo (not mentioned in the previous permit's fact sheet) has been listed as threatened. The primary cause of loss and degradation of Yellow-billed cuckoo is the loss and degradation of riparian breeding habitat, which is believed to have caused the declines in the distribution and abundance of the species Conversion to agriculture and other land uses, urbanization, dams and river flow management, stream channelization and bank stabilization, and livestock grazing are the causes of riparian habitat losses. The permit does not authorize

activities that may cause destruction of the yellow-billed cuckoo habitat, and issuance of the permit will have no effect on this species.

Piping Plover (not mentioned in the previous permit's fact sheet) has been listed as threatened. They breed and raise young on sparsely vegetated sandbars and reservoir shorelines on river systems as well as on the shorelines of alkaline lakes. Changes in the quality and quantity of riverine habitat due primarily to damming and water withdrawals are a primary threat to the species. On the wintering grounds, piping plovers forage and roost along barrier and mainland beaches, sand, mud, and algal flats, washover passes, salt marshes, and coastal lagoons. Habitat destruction and degradation are pervasive and have reduced suitable habitat. Human disturbance, predation, and invasive plants further reduce breeding and wintering habitat quality and affect survival. The permit does not authorize activities that may cause destruction of the Piping Plover habitat, and reissuance of the permit will have no effect on this species.

Mexican spotted owl (not mentioned in the previous permit's fact sheet) has been listed as threatened**.** The Mexican spotted owl currently occupies a broad geographic area, but often occurs in isolated mountain systems and canyons. Riparian communities and previously occupied localities in the Southwest and southern Mexico have undergone significant habitat alteration since the historical sightings. The largest concentration of Mexican spotted owls in New Mexico occurs in the Mogollon and Sacramento Mountain ranges. The Mexican spotted owl has been recorded in all the forested areas of New Mexico at elevations of 3,700 to 10,000 feet. Habitat consists of caves, cliff ledges, and stick nests of other species in mature and old growth forest associated with steep canyons. The preferred vegetation type is mixed conifer; however, they can be found in pinyon-juniper, pine-oak, and ponderosa pine. The Mexican spotted owl has been in Santa Fe National Forest to the west and other forested lands. However, as the Mora Valley was harvested of old growth trees in the 1930's and most of the forest remaining in the project area is new growth Ponderosa pine. The proposed permit does not authorize activities that may cause destruction of the Mexican spotted owl habitat, and reissuance of the permit will have no effect on this species.

Texas Hornshell (not mentioned in the previous permit's fact sheet) has been listed as endangered. Fine sediments, impairment of water quality and loss of flowing water pose the largest risk to future viability of the species. These risks are primarily related to habitat changes and are exacerbated by climate change. Ammonia is of particular concern below water treatment plants because freshwater mussels are particular sensitive to increase ammonia levels. Studies speculated that the absence of Texas Hornshell downstream from wastewater treatment plants may be attributed to the effects of WWTP effluent. In addition, high salinity concentrations appear to limit Texas Hornshell's presence and abundance in some river segments. In particular, the Pecos River population is affected by current salinity levels that regularly exceed the Texas Hornshell's known tolerance limit of 2.0 parts per thousand. The Pecos River once harbored a robust population; however, after exhaustive surveys effort only 3 live individuals and lots of long dead shell were found. This extirpation event appears to coincide with increases in salinity levels and concomitant decreases in flow. As indicated in Table 1, facility's ammonia levels (i.e., daily maximum concentration of 0.57 mg/L and average daily discharge of 0.23 mg/L) are well below both the State of New Mexico ammonia criteria of approximately 2.08 mg/L (at pH of 7.5 and temperature of 26 degree Celsius) and EPA's protecting mussels acute and chronic

ambient water quality ammonia criteria of 17 mg/L and 1.9 mg/L (total ammonia nitrogen at pH 7.0 and temperature 20 degree Celsius), respectively. In addition, the RP analysis of facility past WET data shows reasonable potential to cause toxicity does not exist. EPA do not believe the facility's ammonia plays a role in the decline of this species. Facility TDS levels (i.e., daily maximum concentration of 1920 mg/L and average daily discharge of 1117.41 mg/L) are just below Hornshell's known tolerance limit of 2.0 parts per thousand. Because of the role of salinity has an effect on the Texas Hornshell population in the Pecos River, EPA is in a process of consultation with the Fish and Wildlife Service on the permit reissuance, however, EPA believes that reissuance of the permit will have no effect on this species.

Diminutive Amphipod (not mentioned in the previous permit's fact sheet) has been listed as endangered. They are small freshwater inland crustaceans sometimes referred to as freshwater shrimp. They commonly inhabit shallow, cool, well-oxygenated waters of streams, ponds, ditches, slogs and springs. Abundant food, consisting of algae, bacteria, decaying organic material, and submergent vegetation that contributes the necessary nutrients, detritus, and bacteria on which these species forage. Diminutive Amphipods generally do not tolerate habitat desiccation (drying), standing water, sedimentation, or other adverse environmental conditions. Diminutive Amphipod faces significant threats from the current and future loss of habitat associated with declining spring flows. Another potential factor that could impact habitat of Diminutive amphipod is the potential degradation of water quality from point and nonpoint pollutant sources. Permit limitations have only been made more restrictive from the previously issued permit. For instance, EPA imposes restrictive water-based BOD limits of 7 mg/L (for monthly average) and 17 mg/L (for 7-day maxima) in the draft permit to ensure facility effluent will not degrade the dissolved oxygen levels of receiving water. The steady facility effluent whose maximum and average flows are 4.33 and 2.47 MGD, respectively, is preventing the receiving stream from drying and stagnation. The proposed permit is consistent with the State WQS and does not authorize activities that may cause destruction of the Diminutive Amphipod habitat, and reissuance of the permit will have no effect on this species.

When EPA reissued the permit for the City of Carlsbad in 2005, EPA conducted effect analyses and determined that the action had no effect on other species (i.e., Least Tern, Pecos gambusia, Black-footed ferret, Kuenzler's hedgehog cactus, Pecos bluntnose shiner, Gypsum wild-buckwheat, and Lee pincushion cactus). The Sneed pincushion cactus was not evaluated in 2000 and 2002. After reviewing the Federal Register (Vol. 44, No. 217, Nov. 7, 1979) EPA determines that this permitting action will have no effect on the species. The nature and characteristics of the authorized discharge have not been changed since 2000. EPA will not issue the final permit until meeting consultation obligations under section 7(a)(2) of the Endangered Species Act with regard to effects on the endangered Texas Hornshell.

XVI. 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.

XVII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of New Mexico's Water Quality Standards for Interstate and Intrastate Streams are revised or remanded by the New Mexico Water Quality Control Commission. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the Water Quality Standards are either revised or promulgated by the New Mexico Environment Department. Should the State adopt a State water quality standard, 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].

XVIII. VARIANCE REQUESTS

No variance requests have been received.

XIX. 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.

XX. FINAL DETERMINATION

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

XXI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Form 2A and addendum were received on June 18, 2018 and November 14, 2018, respectively.

B. 40 CFR CITATIONS

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, effective August 11, 2017.

Region 6 Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Stream, May 1995.

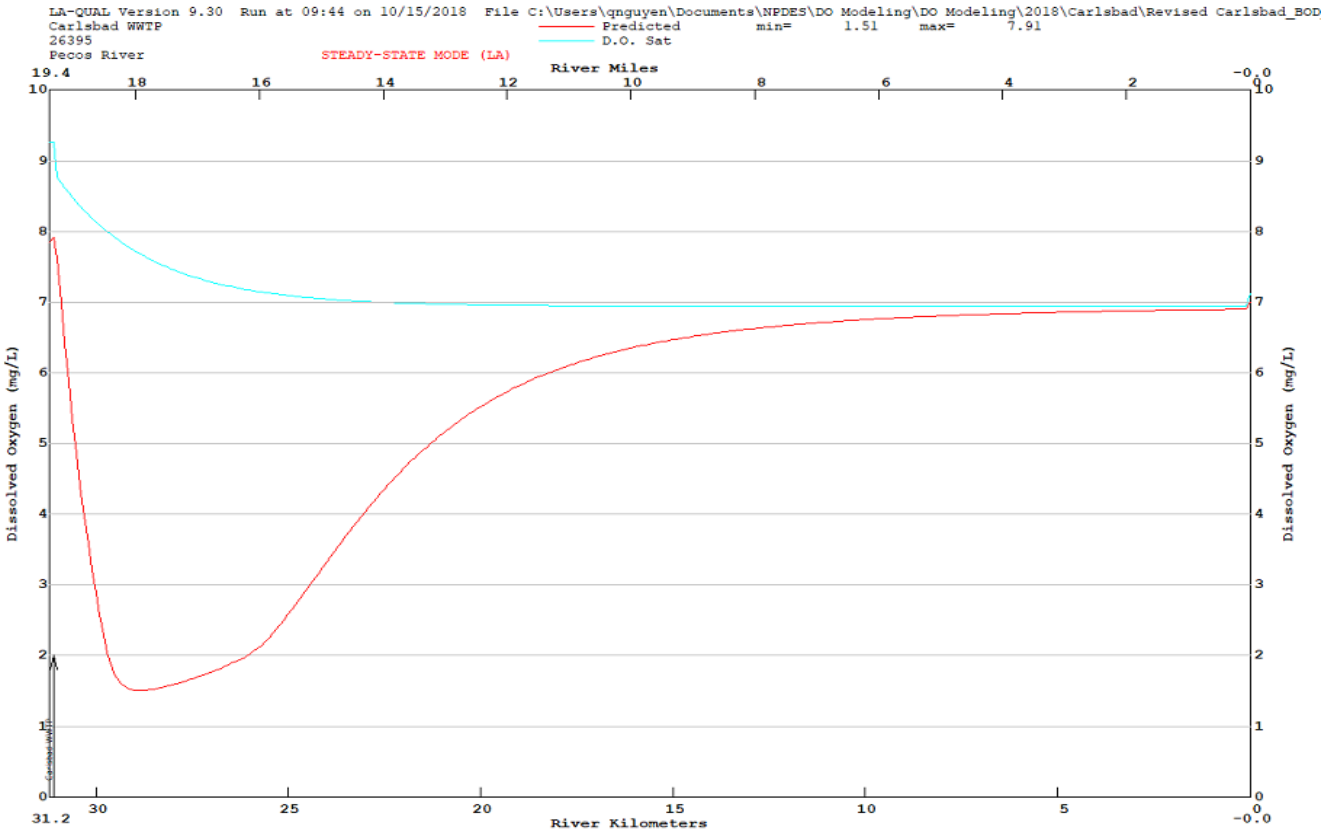
Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2014 -2016.

D. MISCELLANEOUS REFERENCES

EPA Region 6 "Policy for Post Third Round NPDES Permitting" and "Post Third Round NPDES Permit Implementation Strategy," October 1, 1992.

Appendix 1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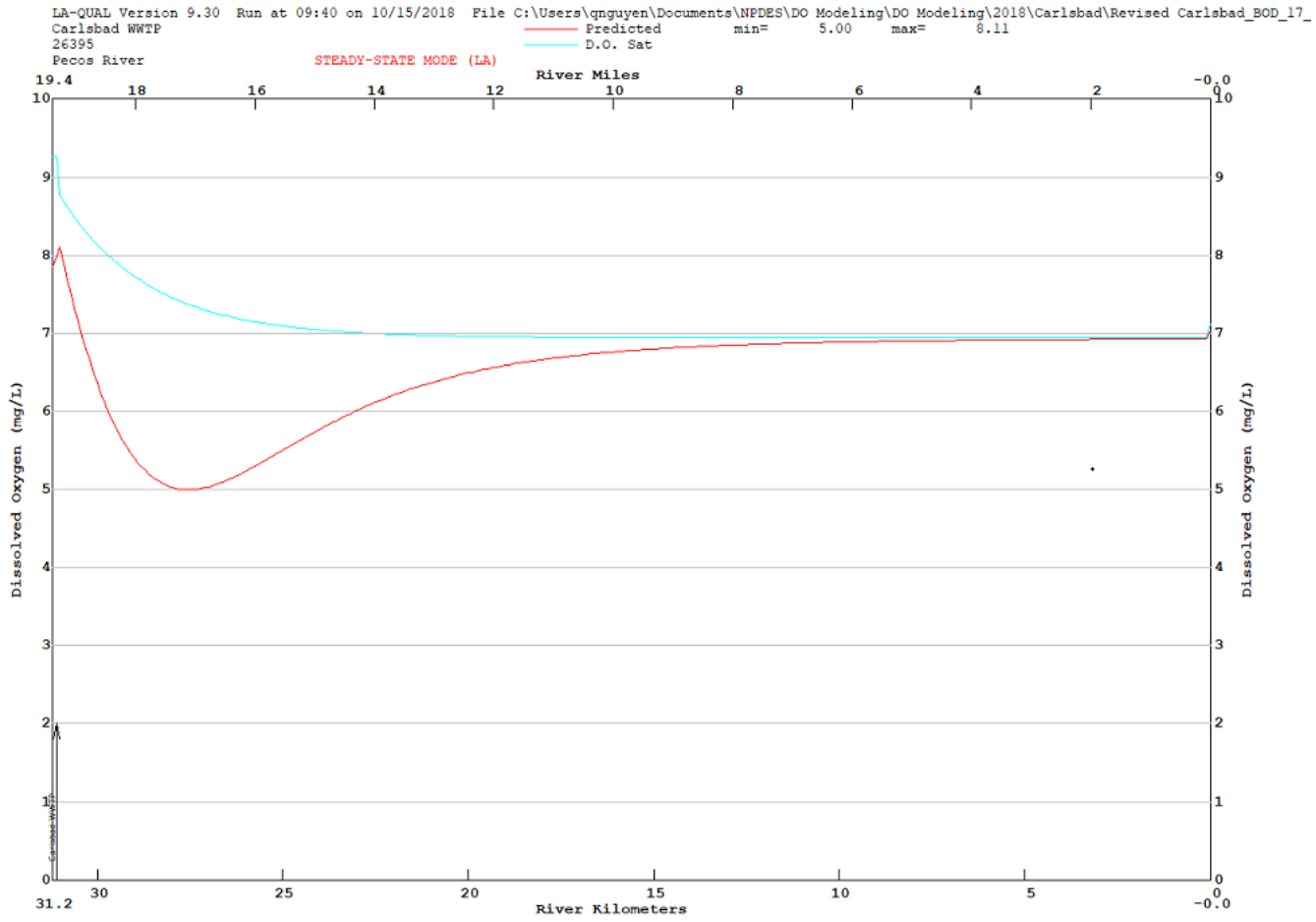
Carlsbad WWTP
26395
Pecos River
STEADY-STATE MODE (LA)
Predicted min= 1.51 max= 7.91
D.O. Sat
River Miles
19.4
18
16
14
12
10
8
6
4
2
-0.0
Dissolved Oxygen (mg/L)
0
1
2
3
4
5
6
7
8
9
10
31.2
30
25
20
15
10
5
-0.0
River Kilometers

Appendix 2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Carlsbad WWTP
26395
Pecos River
STEADY-STATE MODE (LA)
Predicted min= 5.00 max= 8.11
D.O. Sat
River Miles
19.4
18
16
14
12
10
8
6
4
2
-0.0
Dissolved Oxygen (mg/L)
31.2
30
25
20
15
10
5
0.0
River Kilometers

	CALCULATIONS OF NEW MEXICO WATER QUALITY-BASED EFFLUENT LIMITATIONS		
NMAC 20.6.4.	(EPA approved site-specific criteria for aluminum, cadmium, and zinc on April 30, 2012)		
Calculations Specifications:	Excel **Revised as of July 10, 2012**		
Prepared By:	Quang Nguyen		
STEP 1:	REFERENCE IMPLEMENTATION PROCEDURES	**Appendix 3**	
	INPUT FACILITY AND RECEIVING STREAM DATA		
	LIST SOURCE OF DATA INPUT		
IMPLEMENTATION PROCEDURES			
The State of New Mexico Standards for Interstate and Intrastate Surface Waters are implemented in this spread sheet			
by using procedures established in the current "Procedures for Implementing NPDES Permits in New Mexico"			
FACILTY		DATA INPUT	
Permittee		City of Carlsbad	
NPDES Permit No.		NM0026395	
Outfall No.(s)		1	
Plant Effluent Flow (MGD)		5	For industrial and federal facility, use the highest monthly average flow
Plant Effluent Flow (cfs)		7.75	for the past 24 months. For POTWs, use the design flow.
RECEIVING STREAM		DATA INPUT	
Receiving Stream Name		Pecos River	
Basin Name		Pecos River Basin	
Waterbody Segment Code No.		20.6.4.202	
Is a publicly owned lake or reservoir (enter "1" if it's a lake, "0" if not)		0	
Are acute aquatic life criteria considered (1= yes, 0= no)	(MUST enter "1" for 2005 Standards)	1	
Are chronic aquatic life criteria considered (1= yes, 0=no)		1	
Are domestic water supply criteria considered (1= yes, 0=no)		0	
Are irrigation water supply criteria considered (1= yes, 0=no)		1	
Livestock watering and wildlife habitat criteria applied to all streams			
USGS Flow Station		USGS	
WQ Monitoring Station No.		SJR	
Receiving Stream TSS (mg/l)		21.7	For intermittent stream, enter effluent TSS
Receiving Stream Hardness (mg/l as CaCOs)	RANGE: 0 - 400	20	For intermittent stream, enter effluent Hardness (If no data, 20 mg/l is used)
Receiving Stream Critical Low Flow (4Q3) (cfs)		10.074	Enter "0" for intermittent stream and lake.
Receiving Stream Harmonic Mean Flow (cfs)		37.046	Enter harmonic mean or modified harmonic mean flow data or 0.001 if no data is available
Avg. Receiving Water Temperature (C)		19.08	
pH (Avg), Receiving Stream		8.08	
Fraction of stream allowed for mixing (F)		1	Enter 1, if stream morphology data is not available or for intermittent streams.
Fraction of Critical Low Flow		10.074	

STEP 2: INPUT AMBIENT AND EFFLUENT DATA

CALCULATE IN-STREAM WASTE CONCENTRATIONS

DATA INPUT

Input pollutant geometric mean concentration as micro-gram per liter (ug/l or ppb)

unless other unit is specified for the parameter.

Effluent value reported as "< detection level" (DL) but the DL is greater than MQL, input "1/2 DL" for calculation.

Effluent value reported as "< detection level" (DL) and the DL is smaller than MQL, no data is inputted.

If a less than MQL vakue is reported, input either the reported value or "0" for calculation.

The following formular is used to calculate the Instream Waste Concentration (Cd)

See the current "Procedures for Implementing NPDES Permits in New Mexico"

Cd = [(F*Qa*Ca) + (Qe*2.13*Ce)] / (F*Qa + Qe)

Where:

Cd = Instream Waste Concentration

F = Fraction of stream allowed for mixing (see "Procedures for Implementing NPDES Permits in New Mexico")

Ce = Reported concentration in effluent

Ca = Ambient stream concentration upstream of discharge

Qe = Plant effluent flow

Qa = Critical low flow of stream at discharge point expressed as the 4Q3 or harmonic mean flow for human health criteria

The following formular convert metals reported in total form to dissolved form if criteria are in dissolved form

See the current "Procedures for Implementing NPDES Permits in New Mexico"

Kp = Kpo * (TSS**a) Kp = Linear partition coefficient; Kpo and a can be found in table below

C/Ct = 1/ (1 + Kp*TSS* 10^-6) TSS = Total suspended solids concentration found in receiving stream (or in effluent for intermittent stream)

Total Metal Criteria (Ct) = Cr / (C/Ct) C/Ct = Fraction of metal dissolved; and Cr = Dissolved criteria value

		Stream Linear Partition Coefficient					Lake Linear Partition Coefficient				
Total Metals	Total Value	Kpo	alpha (a)	Kp	C/Ct	Dissolved Value in Stream	Kpo	alpha (a)	Kp	C/Ct	Dissolved Value in Lake
Arsenic	0.58	480000	-0.73	50772.15903	0.475792657	0.27595974	480000	-0.73	50772.15903	0.475792657	0.2759597
Chromium III		3360000	-0.93	192057.7006	0.193511479	0	2170000	-0.27	945400.0169	0.046478811	0
Copper	3.8	1040000	-0.74	106672.6628	0.301677619	1.14637495	2850000	-0.9	178661.5509	0.205045949	0.7791746
Lead	0.66	2800000	-0.8	238775.7645	0.161774757	0.10677134	2040000	-0.53	399306.6183	0.103466611	0.068288
Nickel	2.6	490000	-0.57	84803.54978	0.352083291	0.91541656	2210000	-0.76	213148.7921	0.177767387	0.4621952
Silver	0.024	2390000	-1.03	100425.5861	0.314541055	0.00754899	2390000	-1.03	100425.5861	0.314541055	0.007549
Zinc	37	1250000	-0.7	145006.7435	0.241158739	8.92287334	3340000	-0.68	412053.7281	0.100587776	3.7217477

The following formular is used to calculate hardness dependent criteria

(Please refer to State Water Quality Standards for details)

			Dissolved WQC (ug/l)	
Aluminum (T)	Acute	e(1.3695[ln(hardness)]+1.8308)	377.4565069	If Stream pH < 6.5, enter 750 in cell O113
	Chronic	e(1.3695[ln(hardness)]+0.9161)	151.2229667	If Stream pH < 6.5, enter 87 in cell P113
Cadmium (D)	Acute	e(0.8968[ln(hardness)]-3.5699)*CF1	0.418091688	CF1 = 1.136672 - 0.041838*ln(hardness)
	Chronic	e(0.7647[ln(hardness)]-4.2180)*CF2	0.142116028	CF2 = 1.101672 - 0.041838*ln(hardness)

										Dissolved						
										WQC (ug/l)						
Chromium III (D)			Acute			0.316 e(0.819[ln(hardness)]+3.7256)				152.4888787						
			Chronic			0.860 e(0.819[ln(hardness)]+0.6848)				19.8356702						
Copper (D)			Acute			0.960 e(0.9422[ln(hardness)]-1.700)				2.949857764						
			Chronic			0.960 e(0.8545[ln(hardness)]-1.702)				2.263769249						
Lead (D)			Acute			e(1.273[ln(hardness)]-1.46)*CF3				10.79154489		CF3 = 1.46203 - 0.145712*ln(hardness)				
			Chronic			e(1.273[ln(hardness)]-4.705)*CF4				0.420531012		CF4 = 1.46203 - 0.145712*ln(hardness)				
Manganese (D)			Acute			e(0.3331[ln(hardness)]+6.4676)				1746.691001						
			Chronic			e(0.3331[ln(hardness)]+5.8743)				965.048559						
Nickel (D)			Acute			0.998 e(0.846[ln(hardness)]+2.255)				119.9874916						
			Chronic			0.997 e(0.846[ln(hardness)]+0.0584)				13.32690594						
Silver (D)			Acute			0.85 e(1.72[ln(hardness)]-6.59)				0.201924903						
Zinc (D)			Acute			0.978 e(0.9094[ln(hardness)]+0.9095)				37.02425804						
			Chronic			0.986 e(0.90947[ln(hardness)]+0.6235)				28.04834719						
						Instream Waste Concentration						Livestock&	Acute	Chronic	Human	Need
POLLUTANTS				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health	TMDL
				Conc.	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	
		CAS No.	MQL	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Radioactivity, Nutrients, and Chlorine																
Aluminum, total		7429-90-5	2.5		21	44.73	19.4489172	19.4489172	7.73858157	1E+100	5000	1E+100	377.4565069	151.22297	1E+100	N/A
Barium, dissolved		7440-39-3	100			#VALUE!	#VALUE!	#VALUE!	#VALUE!	2000	1E+100	1E+100	1E+100	1E+100	1E+100	Need TMDL
Boron, dissolved		7440-42-8	100			0	0	0	0	1E+100	750	5000	1E+100	1E+100	1E+100	N/A
Cobalt, dissolved		7440-48-4	50			0	0	0	0	1E+100	50	1000	1E+100	1E+100	1E+100	N/A
Uranium, dissolved		7440-61-1	0.1			#VALUE!	#VALUE!	#VALUE!	#VALUE!	30	1E+100	1E+100	1E+100	1E+100	1E+100	Need TMDL
Vanadium, dissolved		7440-62-2	50			0	0	0	0	1E+100	100	100	1E+100	1E+100	1E+100	N/A
Ra-226 and Ra-228 (pCi/l)						0	0	0	0	5	1E+100	30	1E+100	1E+100	1E+100	N/A
Strontium (pCi/l)						#VALUE!	#VALUE!	#VALUE!	#VALUE!	8	1E+100	1E+100	1E+100	1E+100	1E+100	Need TMDL
Tritium (pCi/l)						0	0	0	0	20000	1E+100	20000	1E+100	1E+100	1E+100	N/A
Gross Alpha (pCi/l)						0	0	0	0	15	1E+100	15	1E+100	1E+100	1E+100	N/A
Asbestos (fibers/l)						0	0	0	0	7000000	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Total Residual Chlorine		7782-50-5	33			0	0	0	0	1E+100	1E+100	11	19	11	1E+100	N/A
Nitrate as N (mg/l)						0	0	0	0	10	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Nitrite + Nitrate (mg/l)					11.85	25.2405	#VALUE!	#VALUE!	#VALUE!	1E+100	1E+100	132	1E+100	1E+100	1E+100	Need TMDL
METALS AND CYANIDE																
Antimony, dissolved (P)		7440-36-0	60		0.52	1.1076	0.48159224	0.48159224	0.19162202	6	1E+100	1E+100	1E+100	1E+100	640	N/A
Arsenic, dissolved (P)		7440-38-2	0.5		0.275959741	0.587794248	0.25557705	0.25557705	0.10169224	10	100	200	340	150	9	N/A
Beryllium, dissolved		7440-41-7	0.5		0.86	1.8318	#VALUE!	#VALUE!	#VALUE!	4	1E+100	1E+100	1E+100	1E+100	1E+100	Need TMDL
Cadmium, dissolved		7440-43-9	1			0	0	0	0	5	10	50	0.418091688	0.142116	1E+100	N/A
Chromium (III), dissolved		16065-83-1	10			0	0	0	0	1E+100	1E+100	1E+100	152.4888787	19.83567	1E+100	N/A
Chromium (VI), dissolved		18540-29-9	10			0	0	0	0	1E+100	1E+100	1E+100	16	11	1E+100	N/A
Chromium, dissolved		7440-47-3				0	0	0	0	100	100	1000	1E+100	1E+100	1E+100	N/A
Copper, dissolved		7440-50-8	0.5		1.146374951	2.441778646	#VALUE!	#VALUE!	#VALUE!	1300	200	500	2.949857764	2.2637692	1E+100	Need TMDL
Lead, dissolved		7439-92-1	0.5		0.10677134	0.227422954	#VALUE!	#VALUE!	#VALUE!	15	5000	100	10.79154489	0.420531	1E+100	Need TMDL
Manganese, dissolved		7439-96-5				0	0	0	0	1E+100	1E+100	1E+100	1746.691001	965.04856	1E+100	N/A

					Instream Waste Concentration				Livestock&	Acute	Chronic	Human	Need		
			Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health	TMDL
POLLUTANTS			Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	
	CAS No.	MQL	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Mercury, dissolved	7439-97-6	0.005			0	0	0	0	1E+100	1E+100	1E+100	1.4	0.77	1E+100	N/A
Mercury, total	7439-97-6	0.005		0.12	0.2556	#VALUE!	#VALUE!	#VALUE!	2	1E+100	0.77	1E+100	1E+100	1E+100	Need TMDL
Molybdenum, dissolved	7439-98-7				0	0	0	0	1E+100	1000	1E+100	1E+100	1E+100	1E+100	N/A
Molybdenum, total recoverable	7439-98-7				0	0	0	0	1E+100	1E+100	1E+100	7920	1895	1E+100	N/A
Nickel, dissolved (P)	7440-02-0	0.5		0.915416556	1.949837264	0.84780289	0.84780289	0.33733456	700	1E+100	1E+100	119.9874916	13.326906	4600	N/A
Selenium, dissolved (P)	7782-49-2	5		1.3	2.769	1.20398059	1.20398059	0.47905505	50	130	50	1E+100	1E+100	4200	N/A
Selenium, dis (SO4 >500 mg/l)		5			0	0	0	0	50	250	50	1E+100	1E+100	4200	N/A
Selenium, total recoverable	7782-49-2	5			0	0	0	0	1E+100	1E+100	5	20	5	1E+100	N/A
Silver, dissolved	7440-22-4	0.5		0.007548985	0.016079339	0.00699141	0.00699141	0.00278183	1E+100	1E+100	1E+100	0.201924903	1E+100	1E+100	N/A
Thalllium, dissolved (P)	7440-28-0	0.5		0.042	0.08946	0.03889783	0.03889783	0.01547716	2	1E+100	1E+100	1E+100	1E+100	0.47	N/A
Zinc, dissolved	7440-66-6	20		8.922873336	19.00572021	#VALUE!	#VALUE!	#VALUE!	10500	2000	25000	37.02425804	28.048347	26000	Need TMDL
Cyanide, total recoverable	57-12-5	10			0	0	0	0	200	1E+100	5.2	22	5.2	140	N/A
Dioxin	1764-01-6	0.00001			0	0	0	0	3.00E-05	1E+100	1E+100	1E+100	1E+100	5.1E-08	N/A
VOLATILE COMPOUNDS															
Acrolein	107-02-8	50			0	0	0	0	18	1E+100	1E+100	1E+100	1E+100	9	N/A
Acrylonitrile	107-13-0	20			0	0	0	0	0.65	1E+100	1E+100	1E+100	1E+100	2.5	N/A
Benzene	71-43-2	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	510	N/A
Bromoform	75-25-2	10			0	0	0	0	44	1E+100	1E+100	1E+100	1E+100	1400	N/A
Carbon Tetrachloride	56-23-5	2			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	16	N/A
Chlorobenzene	108-90-7	10			0	0	0	0	100	1E+100	1E+100	1E+100	1E+100	1600	N/A
Clorodibromomethane	124-48-1	10			0	0	0	0	4.2	1E+100	1E+100	1E+100	1E+100	130	N/A
Chloroform	67-66-3	50			0	0	0	0	57	1E+100	1E+100	1E+100	1E+100	4700	N/A
Dichlorobromomethane	75-27-4	10			0	0	0	0	5.6	1E+100	1E+100	1E+100	1E+100	170	N/A
1,2-Dichloroethane	107-06-2	10		0.38	0.8094	0.35193279	0.35193279	0.14003148	5	1E+100	1E+100	1E+100	1E+100	370	N/A
1,1-Dichloroethylene	75-35-4	10			0	0	0	0	7	1E+100	1E+100	1E+100	1E+100	7100	N/A
1,2-Dichloropropane	78-87-5	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	150	N/A
1,3-Dichloropropylene	542-75-6	10			0	0	0	0	3.5	1E+100	1E+100	1E+100	1E+100	210	N/A
Ethylbenzene	100-41-4	10			0	0	0	0	700	1E+100	1E+100	1E+100	1E+100	2100	N/A
Methyl Bromide	74-83-9	50			0	0	0	0	49	1E+100	1E+100	1E+100	1E+100	1500	N/A
Methylene Chloride	75-09-2	20			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	5900	N/A
1,1,2,2-Tetrachloroethane	79-34-5	10			0	0	0	0	1.8	1E+100	1E+100	1E+100	1E+100	40	N/A
Tetrachloroethylene	127-18-4	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	33	N/A
Tolune	108-88-3	10			0	0	0	0	1000	1E+100	1E+100	1E+100	1E+100	15000	N/A
1,2-trans-Dichloroethylene	156-60-5	10			0	0	0	0	100	1E+100	1E+100	1E+100	1E+100	10000	N/A
1,1,1-Trichloroethane	71-55-6				0	0	0	0	200	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
1,1,2-Trichloroethane	79-00-5	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	160	N/A
Trichloroethylene	79-01-6	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	300	N/A
Vinyl Chloride	75-01-4	10			0	0	0	0	2	1E+100	1E+100	1E+100	1E+100	24	N/A
ACID COMPOUNDS															
2-Chlorophenol	95-57-8	10			0	0	0	0	175	1E+100	1E+100	1E+100	1E+100	150	N/A
2,4-Dichlorophenol	120-83-2	10			0	0	0	0	105	1E+100	1E+100	1E+100	1E+100	290	N/A
2,4-Dimethylphenol	105-67-9	10			0	0	0	0	700	1E+100	1E+100	1E+100	1E+100	850	N/A
4,6-Dinitro-o-Cresol	534-52-1	50			0	0	0	0	14	1E+100	1E+100	1E+100	1E+100	280	N/A

					Instream Waste Concentration										
				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Livestock& Wildlife	Acute Aquatic	Chronic Aquatic	Human Health	Need TMDL
POLLUTANTS				Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	
		CAS No.	MQL	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
2,4-Dinitrophenol		51-28-5	50			0	0	0	0	70	1E+100	1E+100	1E+100	1E+100	5300	N/A
Pentachlorophenol		87-86-5	50			0	0	0	0	1	1E+100	1E+100	19	15	30	N/A
Phenol		108-95-2	10			0	0	0	0	10500	1E+100	1E+100	1E+100	1E+100	860000	N/A
2,4,6-Trichlorophenol		88-06-2	10			0	0	0	0	32	1E+100	1E+100	1E+100	1E+100	24	N/A
BASE/NEUTRAL																
Acenaphthene		83-32-9	10			0	0	0	0	2100	1E+100	1E+100	1E+100	1E+100	990	N/A
Anthracene		120-12-7	10			0	0	0	0	10500	1E+100	1E+100	1E+100	1E+100	40000	N/A
Benzidine		92-87-5	50			0	0	0	0	0.0015	1E+100	1E+100	1E+100	1E+100	0.002	N/A
Benzo(a)anthracene		56-55-3	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Benzo(a)pyrene		50-32-8	5			0	0	0	0	0.2	1E+100	1E+100	1E+100	1E+100	0.18	N/A
3,4-Benzofluoranthene		205-99-2	10			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Benzo(k)fluoranthene		207-08-9	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Bis(2-chloroethyl)Ether		111-44-4	10			0	0	0	0	0.3	1E+100	1E+100	1E+100	1E+100	5.3	N/A
Bis(2-chloroisopropyl)Ether		108-60-1	10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	65000	N/A
Bis(2-ethylhexyl)Phthalate		117-81-7	10		0.7	1.491	0.64829724	0.64829724	0.25795272	6	1E+100	1E+100	1E+100	1E+100	22	N/A
Butyl Benzyl Phthalate		85-68-7	10			0	0	0	0	7000	1E+100	1E+100	1E+100	1E+100	1900	N/A
2-Chloronapthalene		91-58-7	10			#VALUE!	#VALUE!	#VALUE!	#VALUE!	2800	1E+100	1E+100	1E+100	1E+100	1600	N/A
Chrysene		218-01-9	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Dibenzo(a,h)anthracene		53-70-3	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
1,2-Dichlorobenzene		95-50-1	10			0	0	0	0	600	1E+100	1E+100	1E+100	1E+100	1300	N/A
1,3-Dichlorobenzene		541-73-1	10			0	0	0	0	469	1E+100	1E+100	1E+100	1E+100	960	N/A
1,4-Dichlorobenzene		106-46-7	10			0	0	0	0	75	1E+100	1E+100	1E+100	1E+100	190	N/A
3,3'-Dichlorobenzidine		91-94-1	5			0	0	0	0	0.78	1E+100	1E+100	1E+100	1E+100	0.28	N/A
Diethyl Phthalate		84-66-2	10			0	0	0	0	28000	1E+100	1E+100	1E+100	1E+100	44000	N/A
Dimethyl Phthalate		131-11-3	10			0	0	0	0	350000	1E+100	1E+100	1E+100	1E+100	1100000	N/A
Di-n-Butyl Phthalate		84-74-2	10			0	0	0	0	3500	1E+100	1E+100	1E+100	1E+100	4500	N/A
2,4-Dinitrotoluene		121-14-2	10			0	0	0	0	1.1	1E+100	1E+100	1E+100	1E+100	34	N/A
1,2-Diphenylhydrazine		122-66-7	20			0	0	0	0	0.44	1E+100	1E+100	1E+100	1E+100	2	N/A
Fluoranthene		206-44-0	10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	140	N/A
Fluorene		86-73-7	10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	5300	N/A
Hexachlorobenzene		118-74-1	5			0	0	0	0	1	1E+100	1E+100	1E+100	1E+100	0.0029	N/A
Hexachlorobutadiene		87-68-3	10			0	0	0	0	4.5	1E+100	1E+100	1E+100	1E+100	180	N/A
Hexachlorocyclopentadiene		77-47-4	10			0	0	0	0	50	1E+100	1E+100	1E+100	1E+100	1100	N/A
Hexachloroethane		67-72-1	20			0	0	0	0	25	1E+100	1E+100	1E+100	1E+100	33	N/A
Indeno(1,2,3-cd)Pyrene		193-39-5	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Isophorone		78-59-1	10			0	0	0	0	368	1E+100	1E+100	1E+100	1E+100	9600	N/A
Nitrobenzene		98-95-3	10			0	0	0	0	18	1E+100	1E+100	1E+100	1E+100	690	N/A
n-Nitrosodimethylamine		62-75-9	50			0	0	0	0	0.0069	1E+100	1E+100	1E+100	1E+100	30	N/A
n-Nitrosodi-n-Propylamine		621-64-7	20			0	0	0	0	0.05	1E+100	1E+100	1E+100	1E+100	5.1	N/A
n-Nitrosodiphenylamine		86-30-6	20			0	0	0	0	71	1E+100	1E+100	1E+100	1E+100	60	N/A
Nonylphenol		84852-15-3				0	0	0	0	1E+100	1E+100	1E+100	28	6.6	1E+100	N/A
Pyrene		129-00-0	10			0	0	0	0	1050	1E+100	1E+100	1E+100	1E+100	4000	N/A
1,2,4-Trichlorobenzene		120-82-1	10			0	0	0	0	70	1E+100	1E+100	1E+100	1E+100	70	N/A

						Instream Waste Concentration						Livestock&	Acute	Chronic	Human	Need
				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health	TMDL
POLLUTANTS				Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	
		CAS No.	MQL	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
PESTICIDES AND PCBS																
Aldrin		309-00-2	0.01			0	0	0	0	0.021	1E+100	1E+100	3	1E+100	0.0005	N/A
Alpha-BHC		319-84-6	0.05			0	0	0	0	0.056	1E+100	1E+100	1E+100	1E+100	0.049	N/A
Beta-BHC		319-85-7	0.05			0	0	0	0	0.091	1E+100	1E+100	1E+100	1E+100	0.17	N/A
Gamma-BHC		58-89-9	0.05			0	0	0	0	0.2	1E+100	1E+100	0.95	1E+100	1.8	N/A
Chlordane		57-74-9	0.2			0	0	0	0	2	1E+100	1E+100	2.4	0.0043	0.0081	N/A
4,4'-DDT and derivatives		50-29-3	0.02			0	0	0	0	1	1E+100	0.001	1.1	0.001	0.0022	N/A
Dieldrin		60-57-1	0.02			0	0	0	0	0.022	1E+100	1E+100	0.24	0.056	0.00054	N/A
Diazinon		333-41-5				0	0	0	0	1E+100	1E+100	1E+100	0.17	0.17	1E+100	N/A
Alpha-Endosulfan		959-98-8	0.01			0	0	0	0	62	1E+100	1E+100	0.22	0.056	89	N/A
Beta-Endosulfan		33213-65-9	0.02			0	0	0	0	62	1E+100	1E+100	0.22	0.056	89	N/A
Endosulfan sulfate		1031-7-8	0.1			0	0	0	0	62	1E+100	1E+100	1E+100	1E+100	89	N/A
Endrin		72-20-8	0.02			0	0	0	0	2	1E+100	1E+100	0.086	0.036	0.06	N/A
Endrin Aldehyde		7421-93-4	0.1			0	0	0	0	10.5	1E+100	1E+100	1E+100	1E+100	0.3	N/A
Heptachlor		76-44-8	0.01			0	0	0	0	0.4	1E+100	1E+100	0.52	0.0038	0.00079	N/A
Heptachlor Epoixde		1024-57-3	0.01			0	0	0	0	0.2	1E+100	1E+100	0.52	0.0038	0.00039	N/A
PCBs		1336-36-3	0.2			0	0	0	0	0.5	1E+100	0.014	2	0.014	0.00064	N/A
Toxaphene		8001-35-2	0.3			0	0	0	0	3	1E+100	1E+100	0.73	0.0002	0.0028	N/A

STEP 3: SCAN POTENTIAL INSTREAM WASTE CONCENTRATIONS AGAINST WATER QUALITY CRITERIA
AND ESTABLISH EFFLUENT LIMITATIONS FOR ALL APPLICABLE PARAMETERS

No limits are established if the receiving stream is not designated for the particular uses.
No limits are established if the potential instream waste concentrations are less than the chronic water quality criteria.
The most applicable stringent criteria are used to establish effluent limitations for a given parameter.
Water quality criteria apply at the end-of-pipe for acute aquatic life criteria and discharges to public lakes.
If background concentration exceeds the water quality criteria, water quality criteria apply. And "Need TMDL" shown to the next column of Avg. Mass
Monthly avg concentration = daily max. / 1.5.

APPLICABLE WATER QUALITY-BASED LIMITS

The following formular is used to calculate the allowable daily maximum effluent cincentration — See the current "Procedures for Implementing NPDES Permits in New Mexico"

Daily Max. Conc. = Cs + (Cs - Ca)(F*Qa/Qe) — Monthly Avg. Conc. = Daily Max. Conc. / 1.5

Where:
Cs = Applicable water quality standard
Ca = Ambient stream concentration
F = Fraction of stream allowed for mixing (1.0 is assigned to domestic water supply and human health uses)
Qe = Plant effluent flow
Qa = Criteria Low flow (4Q3) or Harmonic Mean flow for Human Health Criteria

POLLUTANTS	CAS No.	STORET	Domestic Limits	Irrigation Limits	Livestock or Wildlife Limits	Acute Aquatic Limits	Chronic Aquatic Limits	Human Health Limits	Daily Max Conc ug/l	Monthly Avg Conc ug/l	Daily Max Total ug/l	Mon. Avg Total ug/l	Daily Max Load lb/day	Monthly Avg Load lb/day
Radioactivity, Nutrients, and Chlorine, as Total														
Aluminum, Total	7429-90-5	01105	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Barium, Total	7440-39-3	01007	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Boron, Total	7440-42-8	01022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt, Total	7440-48-4	01037	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Uranium, Total	7440-61-1	22706	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Vanadium, Total	7440-62-2	01087	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ra-226 and Ra-228 (pCi/l)		11503	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Strontium (pCi/l)		13501	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Tritium (pCi/l)		04124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gross Alpha (pCi/l)		80029	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Asbestos (fibers/l)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Residual Chlorine	7782-50-5	50060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrate as N (mg/l)		00620	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrite + Nitrate (mg/l)		00630	N/A	#VALUE!	#VALUE!	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
METALS AND CYANIDE, as Total														
Antimony, Total (P)	7440-36-0	01097	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic, Total (P)	7440-38-2	1002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium, Total	7440-41-7	01012	N/A	#VALUE!	#VALUE!	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Cadmium, Total	7440-43-9	01027	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (III), dissolved	16065-83-1	01033	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (VI), dissolved	18540-29-9	01034	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium, Total	7440-47-3	01034	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper, Total	7440-50-8	01042	N/A	#VALUE!	#VALUE!	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Lead, Total	7439-92-1	01051	N/A	#VALUE!	#VALUE!	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Manganese, dissovled	7439-96-5	01056	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury, Total	7439-97-6	71900	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury, Total	7439-97-6	71900	N/A	#VALUE!	#VALUE!	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Molybdenum, dissolved	7439-98-7	1060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Molybdenum, total recoverable	7439-98-7	01062	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel, Total (P)	7440-02-0	01067	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, Total (P)	7782-49-2	01147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, Total (SO4 >500 mg/l)		01147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, Total recoverable	7782-49-2	01147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silver, Total	7440-22-4	01077	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thalllium, Total (P)	7440-28-0	01059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Zinc, Total	7440-66-6	1092	N/A	#VALUE!	#VALUE!	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Cyanide, total recoverable	57-12-5	00720	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DIOXIN														0
2,3,7,8-TCDD	1764-01-6	34675	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILE COMPOUNDS														
Acrolein	107-02-8	34210	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acrylonitrile	107-13-0	34215	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	71-43-2	34030	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bromoform	75-25-2	32104	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	56-23-5	32102	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

POLLUTANTS	CAS No.	STORET	Domestic Limits	Irrigation Limits	Livestock or Wildlife Limits	Acute Aquatic Limits	Chronic Aquatic Limits	Human Health Limits	Daily Max Conc ug/l	Monthly Avg Conc ug/l	Daily Max Total ug/l	Mon. Avg Total ug/l	Daily Max Load lb/day	Monthly Avg Load lb/day
Chlorobenzene	108-90-7	34301	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Clorodibromomethane	124-48-1	32105	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	67-66-3	32106	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dichlorobromomethane	75-27-4	32101	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	107-06-2	34531	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethylene	75-35-4	34501	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	78-87-5	34541	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichloropropylene	542-75-6	34561	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	100-41-4	34371	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Bromide	74-83-9	34413	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	75-09-2	34423	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane	79-34-5	34516	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethylene	127-18-4	34475	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tolune	108-88-3	34010	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-trans-Dichloroethylene	156-60-5	34546	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	71-55-6		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane	79-00-5	34511	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethylene	79-01-6	39180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	75-01-4	39175	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ACID COMPOUNDS														
2-Chlorophenol	95-57-8	34586	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dichlorophenol	120-83-2	34601	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	105-67-9	34606	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4,6-Dinitro-o-Cresol	534-52-1	34657	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dinitrophenol	51-28-5	34616	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	87-86-5	39032	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenol	108-95-2	34694	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4,6-Trichlorophenol	88-06-2	34621	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BASE/NEUTRAL														
Acenaphthene	83-32-9	34205	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	120-12-7	34220	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzidine	92-87-5	39120	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)anthracene	56-55-3	34526	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	50-32-8	34247	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3,4-Benzofluoranthene	205-99-2	34230	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	207-08-9	34242	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-chloroethyl)Ether	111-44-4	34273	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-chloroisopropyl)Ether	108-60-1	34283	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-ethylhexyl)Phthalate	117-81-7	39100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Butyl Benzyl Phthalate	85-68-7	34292	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Chloronapthalene	91-58-7	34581	N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Chrysene	218-01-9	34320	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenzo(a,h)anthracene	53-70-3	34556	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	95-50-1	34536	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

POLLUTANTS	CAS No.	STORET	Domestic Limits	Irrigation Limits	Livestock or Wildlife Limits	Acute Aquatic Limits	Chronic Aquatic Limits	Human Health Limits	Daily Max Conc ug/l	Monthly Avg Conc ug/l	Daily Max Total ug/l	Mon. Avg Total ug/l	Daily Max Load lb/day	Daily Avg Load lb/day
1,3-Dichlorobenzene	541-73-1	34566	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	106-46-7	34571	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	91-94-1	34631	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diethyl Phthalate	84-66-2	34336	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dimethyl Phthalate	131-11-3	34341	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Di-n-Butyl Phthalate	84-74-2	39110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dinitrotoluene	121-14-2	34611	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Diphenylhydrazine	122-66-7	34346	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	206-44-0	34376	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluorene	86-73-7	34381	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobenzene	118-74-1	39700	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobutadiene	87-68-3	34391	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorocyclopentadiene	77-47-4	34386	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	67-72-1	34396	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)Pyrene	193-39-5	34403	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Isophorone	78-59-1	34408	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	98-95-3	34447	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n-Nitrosodimethylamine	62-75-9	34438	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n-Nitrosodi-n-Propylamine	621-64-7	34428	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n-Nitrosodiphenylamine	86-30-6	34433	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nonylphenol	84852-15-3		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	129-00-0	34469	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	120-82-1	34551	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDES AND PCBS														
Aldrin	309-00-2	39330	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alpha-BHC	319-84-6	39337	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beta-BHC	319-85-7	39338	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma-BHC	58-89-9	39340	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlordane	57-74-9	39350	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDT and derivatives	50-29-3	39300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	60-57-1	39380	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diazinon	333-41-5	39570	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alpha-Endosulfan	959-98-8	34361	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beta-Endosulfan	33213-65-9	34356	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan sulfate	1031-7-8	34351	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin	72-20-8	39390	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin Aldehyde	7421-93-4	34366	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	76-44-8	39410	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor Epoixde	1024-57-3	39420	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCBs	1336-36-3	39516	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toxaphene	8001-35-2	39400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix 4

Facility Name	City of Carlsbad							
NPDES Permit Number	NM0026395					Outfall Number		
Proposed Critical Dilution*	43.4							
			*Critical Dilution in draft permit, do not use % sign.					
			Enter data in yellow shaded cells only. Fifty percent should be entered as 50, not 50%.					
Test Data								
		VERTEBRATE				INVERTEBRATE		
Date (mm/yyyy)	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU
Mar-16	94	94	1.06	1.06	94	94	1.06	1.06
Jun-16	76	76	1.32	1.32	76	76	1.32	1.32
Sep-16	76	76	1.32	1.32	76	76	1.32	1.32
Dec-16	76	76	1.32	1.32	76	76	1.32	1.32
Apr-17	76	76	1.32	1.32	76	76	1.32	1.32
Jun-17	76	76	1.32	1.32	76	76	1.32	1.32
Sep-17	76	76	1.32	1.32	76	76	1.32	1.32
Dec-17	76	76	1.32	1.32	76	76	1.32	1.32
Mar-18	76	76	1.32	1.32	76	76	1.32	1.32
Jun-18	76	76	1.32	1.32	76	76	1.32	1.32
Sep-18	76	76	1.32	1.32	76	76	1.32	1.32
Dec-18	76	76	1.32	1.32	76	76	1.32	1.32
	76	76	1.32	1.32	76	76	1.32	1.32
Count			12	12			12	12
Mean			1.295	1.295			1.295	1.295
Std. Dev.			0.073	0.073			0.073	0.073
CV			0.1	0.1			0.1	0.1
RPMF			1.1	1.1			1.1	1.1

	2.304	Reasonable Potential Acceptance Criteria
Vertebrate Lethal	0.628	No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.
Vertebrate Sublethal	0.628	No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.
Invertebrate Lethal	0.628	No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.
Invertebrate Sublethal	0.628157895	No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.