COLORADO DISCHARGE PERMIT SYSTEM (CDPS)
FACT SHEET FOR PERMIT NUMBER CO0041530
CITY OF GUNNISON, GUNNISON WWTF
GUNNISON COUNTY

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I. TYPE OF PERMIT

A. Permit Type: Domestic - Major Municipal, Mechanical Plant, Forth Renewal

B. Discharge To: Surface Water

II. FACILITY INFORMATION

A. SIC Code: 4952 Sewerage Systems

B. Facility Classification: Class A per Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements

C. Facility Location: Latitude: 38° 31' 40" N, Longitude: 106° 59' 31" W

D. Permitted Feature: 001A, following disinfection and prior to mixing with the receiving stream. 38° 31.11' N, 106° 59.47' W

The location provided above will serve as the point of compliance for this permit and it is appropriate as it is located after all treatment and prior to discharge to the receiving water.

E. Facility Flows: **4.2 MGD**

F. Major Changes From Last Renewal:

- Compliance schedule for mixing zone study
- Compliance schedule for total recoverable arsenic and mercury
- Monitoring for molybdenum and nonylphenol
- Monitoring for total inorganic nitrogen

III. RECEIVING STREAM

A. Waterbody Identification: *COGUUG14, Gunnison River*

B. Water Quality Assessment:

An assessment of the stream standards, low flow data, and ambient stream data has been performed to determine the assimilative capacities for *Gunnison River* for potential pollutants of concern. This information, which is contained in the Water Quality Assessment (WQA) for this receiving stream(s), also includes an antidegradation review, where appropriate. The Division's Permits Section has reviewed the assimilative capacities to determine the appropriate water quality-based effluent limitations as well as potential limits based on the antidegradation evaluation, where applicable. The limitations based on the assessment and other evaluations conducted as part of this fact sheet can be found in Part I.A of the permit.

Permitted Feature *001A* will continue to be the authorized discharge point to the receiving stream.

IV. FACILITY DESCRIPTION

A. Infiltration/Inflow (I/I)

As with the previous permit, infiltration and inflow is still a concern during the runoff months. The facility has ongoing sewer system maintenance, repair and rehabilitation program and have made progress in mitigating I/I issues during runoff. The City of Gunnison plans to slip line approximately 1800 feet of sewer main yearly in an effort to reduce the I/I problems. In 2011, the City slip lined 8,800 feet of sewer main and ten manholes were rehabilitated. The highest daily maximum flow reported is 2.6 MGD. Because the facility can accommodate the I/I and effort is being made to reduce the I/I issues, no additional conditions are being included in this permit for the control of I/I at this time.

B. Lift Stations

Table IV-1 summarizes the information provided in the renewal application for the lift stations in the service area.

Table IV-1 – Lift Station Summary

Station Name/#	Firm Pump Capacity (gpm)	Peak Flows (gpd)*	% Capacity (based on peak flow)
Dos Rios	Two 6.2 hp @ 880	72000	2.8
Antelope Hills	Two 15hp @ 100	23000	8.0
North Valley	Two @ 45	unknown	NA
Tomichi Village	Two @ 125	Unknown	NA

C. Chemical Usage

The permittee did not specify any chemicals for use in waters that may be discharged. On this basis, no chemicals are approved under this permit. Prior to use of any applicable chemical, the permittee must submit a request for approval that includes the most current Material Safety Data Sheet (MSDS) for that chemical. Until approved, use of any chemical in waters that may be discharged could result in a discharge of pollutants not authorized under the permit. Also see Part II.A.1. of the permit.

Chemicals deemed acceptable for use in waters that will or may be discharged to waters of the State are acceptable only when used in accordance with all state and federal regulations, and in strict accordance with the manufacturer's site-specific instructions.

D. Treatment Facility, Facility Modifications and Capacities

The facility consists of a headworks with two screw pumps, a mechanical bar screen, an aerated grit chamber, and an influent Parshall flume with a flow proportioned composite sampler followed by three oxidation ditches, two secondary clarifiers, and a UV light disinfection system prior to discharge through an effluent weir to the Gunnison River. The permittee has not performed any construction at this facility that would change the hydraulic capacity of 4.2 MGD or the organic capacity of 5800 lbs BOD_5/day, which were specified in Site Approval 3695. That document should be referred to for any additional information.

Pursuant to Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements, this facility will require a Class A certified operator.

E. Biosolids Treatment and Disposal

The sludge generated at this facility is dewatered by injection of polymer and then combined with wood chips and grass clippings to form a compost mixture. The treated biosolids (compost) is sold to the public and commercial companies as a soil amendment.

1. EPA General Permit

   EPA Region 8 issued a General Permit (effective October 19, 2007) for Colorado facilities whose operations generate, treat, and/or use/dispose of sewage sludge by means of land application, landfill, and surface disposal under the National Pollutant Discharge Elimination System. All Colorado facilities are required to apply for and to obtain coverage under the EPA General Permit.

2. Biosolids Regulation (Regulation No. 64, Colorado Water Quality Control Commission)

While the EPA is now the issuing agency for biosolids permits, Colorado facilities that land apply biosolids must comply with requirements of Regulation No. 64, such as the submission of annual reports as discussed later in this rationale.

V. PERFORMANCE HISTORY

A. Monitoring Data

1. Discharge Monitoring Reports – The following tables summarize the effluent data reported on the Discharge Monitoring Reports (DMRs) for the previous permit term, from period of DMR review from January 2007 through September 2012.

Table V-1 – Summary of DMR Data for Permitted Feature 001A

Parameter	*# Samples or Reporting Periods*	*Reported Average Concentrations Avg/Min/Max*	*Reported Maximum Concentrations Avg/Min/Max*	*AD 2-Year Average Avg/Min/Max*	*Previous Avg/Max/AD Permit Limit*	*Number of Limit Excursions*
Effluent Flow (MGD)	*69*	*1.1/0.4/2.4*	*1.3/0.48/2.6*		*4.2/Report*	
Temp (°C)	*60*	*12/7.3/17*	*13/7.3/19*		*Report/Report*	
pH (su)	*69*	*7/6.5/7.5*	*7.5/7.1/7.7*		*6.5 - 9*	
Fecal Coliform (#/100 ml)	*9*	*3.1/1/27*	*6.9/1/70*	*NA/NA/NA*	*NA/NA*	
E. coli (#/100 ml)	*60*	*1.7/1/32*	*3.1/1/1326*	*NA/NA/NA*	*3780/7560*	
TRC (mg/l)	*1*	*0/0/0*	*0/0/0*	*NA/NA/NA*	*0.06/0.43*	
NH3 as N, Tot (mg/l) Jan	*6*	*0.17/0.1/0.43*	*0.32/0.1/0.87*	*0.19/0.1/0.46*	*Report/Report/7*	
NH3 as N, Tot (mg/l) Feb	*6*	*0.21/0.1/0.45*	*0.34/0.1/0.85*	*0.18/0.1/0.35*	*Report/Report/10*	
NH3 as N, Tot (mg/l) Mar	*6*	*0.15/0/0.53*	*0.2/0/0.85*	*0.14/0.09/0.33*	*Report/Report/7*	
NH3 as N, Tot (mg/l) Apr	*6*	*0.13/0/0.35*	*0.26/0/0.74*	*0.23/0.1/0.57*	*28.8/Report/7*	
NH3 as N, Tot (mg/l) May	*6*	*0.14/0.1/0.31*	*0.24/0.1/0.93*	*0.096/0.08/0.1*	*Report/Report/14*	
NH3 as N, Tot (mg/l) Jun	*6*	*0.1/0/0.21*	*0.12/0/0.31*	*0.12/0.1/0.22*	*Report/Report/14*	
NH3 as N, Tot (mg/l) Jul	*6*	*0.083/0/0.1*	*0.083/0/0.1*	*0.1/0.1/0.1*	*Report/Report/10*	
NH3 as N, Tot (mg/l) Aug	*6*	*0.17/0.1/0.32*	*0.29/0.1/0.76*	*0.15/0.1/0.32*	*24.9/Report/7*	
NH3 as N, Tot (mg/l) Sep	*6*	*0.17/0/0.37*	*0.29/0/0.94*	*0.21/0.1/0.44*	*25.6/Report/7*	
NH3 as N, Tot (mg/l) Oct	*5*	*0.17/0.1/0.44*	*0.24/0.1/0.78*	*0.18/0.1/0.48*	*20.9/Report/7*	
NH3 as N, Tot (mg/l) Nov	*5*	*0.1/0/0.22*	*0.17/0/0.54*	*0.1/0/0.21*	*Report/Report/10*	
NH3 as N, Tot (mg/l) Dec	*5*	*0.23/0/0.83*	*0.88/0/4.1*	*0.15/0/0.47*	*Report/Report/10*	
BOD5, effluent (mg/l)	*69*	*4.7/2/8.5*	*6.4/2.9/11*		*30/45/*	
BOD5 (% removal)	*60*	*97/93/99*	*NA/NA/NA*		*85/NA/*	
TSS, effluent (mg/l)	*69*	*6.2/3/17*	*9.9/3/33*		*30/45/*	
TSS (% removal)	*60*	*98/92/99*	*NA/NA/NA*		*85/NA/*	
Oil and Grease (mg/l)	*69*	*NA/NA/NA*	*0.16/0.1/1.3*		*NA/10/*	
TDS (mg/l)		*//*	*//*		*NA/NA/*	
PWS intake (mg/l)	*63*	*237/193/275*	*237/193/275*	*NA/NA/NA*	*Report*	

WWTF effluent (mg/l)	*63*	*377/253/483*	*377/253/483*	*NA/NA/NA*	*Report*	
As, TR (µg/l)	*37*	*NA/NA/NA*	*0.72/0.1/1.5*	*NA/NA/NA*	*NA/Report*	
Cd, Dis (µg/l)	*14*	*0.24/0.1/1.4*	*0.24/0.1/1.4*	*NA/NA/NA*	*Report/Report*	
Cr, TR (µg/l)	*15*	*0.47/0.1/1.5*	*0.47/0.1/1.5*	*NA/NA/NA*	*Report/Report*	
Cu, Dis (µg/l)	*60*	*13/6.1/65*	*13/6.1/65*	*NA/NA/NA*	*Report/Report*	
CN, Tot (µg/l)	*3*	*10/4/15*	*NA/NA/NA*	*NA/NA/NA*	*Report*	
Fe, TR (µg/l)	*42*	*94/2/1160*	*NA/NA/NA*	*NA/NA/NA*	*Report/NA*	
Pb, Dis (µg/l)	*59*	*1.7/0.1/40*	*NA/NA/NA*	*NA/NA/NA*	*Report/NA*	
Mn, Dis (µg/l)	*21*	*12/5/48*	*NA/NA/NA*	*NA/NA/NA*	*Report/NA*	
Hg, Tot (µg/l)	*3*	*0.7/0.2/1.5*	*0.7/0.2/1.5*	*NA/NA/NA*	*Report/Report*	
Ni, Dis (µg/l)	*6*	*15/10/20*	*NA/NA/NA*	*NA/NA/NA*	*Report/NA*	
Se, TR (µg/l)	*48*	*NA/NA/NA*	*0.41/0.1/13*	*NA/NA/NA*	*Report*	
Ag, Dis (µg/l)	*1*	*0.13/0.13/0.13*	*0.13/0.13/0.13*	*NA/NA/NA*	*Report/Report*	
Zn, Dis (µg/l)	*59*	*41/10/110*	*41/10/110*	*NA/NA/NA*	*Report/Report*	
Wet, acute						
pimephales, LC50	*22*	*//*	*100/100/100*	*//*	*LC50>100*	
ceriodaphnia LC50	*22*	*//*	*100/100/100*	*//*		
**The pH data shows the minimum reported values in the "average" column, and the maximum reported values in the "maximum" column.*						

2. Additional Data –The following table summarizes additional effluent data submitted by the permittee with the permit application.

Table V-2 – Summary of Additional Data submitted by the permittee

Date	phosphate (Mg/l)	ortho dissolved (Mg/l)	NH3 as N 30-day (Mg/l)	NH3 as N daily max. (Mg/l)
Jan, 2010			0.15	0.34
Feb, 2010			0.1	0.1
Mar, 2010			0.1	0.1
Apr, 2010			0.15	0.51
May, 2010			0.1	0.1
Jun, 2010	4.34	1.4	0.1	0.1
Jul, 2010	4.03	1.3	0.1	0.1
Aug, 2010	2.39	0.77	0.1	0.1
Sep, 2010	4.84	1.56	0.1	0.1
Oct, 2010	4.68	1.51	0.1	0.1
Nov, 2010	5.55	1.79	0.1	0.1
Dec, 2010	5.58	1.8	0.1	0.1
Jan, 2011	5.27	1.7	0.16	0.34
Feb, 2011	6.51	2.1	0.43	0.85
Mar, 2011	6.51	2.1	0.02	0.06
Apr, 2011	7.13	2.3	0.1	0.1
May, 2011	5.58	1.8	0.1	0.1
Jun, 2011	2.17	0.7	0.1	0.1
Jul, 2011	0.58	0.19	0.1	0.1
Aug, 2011	4.96	1.6	0.31	0.6
Sep, 2011	5.58	1.8	0.33	0.94
Oct, 2011	4.96	1.6	0.44	0.78
Nov, 2011	8.06	2.6	0.22	0.54
Dec, 2011	6.51	2.1		

3. Additional Data –The following table summarizes additional effluent data collected by the State during a routine inspection on June 3, 2009.

Table V-3 – Summary of Additional Data collected by the State during a routine inspection.

Parameter	06/03/2009	Date
Flow, MGD	*2.1*	
BOD_5, mg/l	*<1.0*	
TSS, mg/l	*<<10*	
TRC, mg/	*0.00*	
Oil and Grease, mg/	*<10*	
pH, s.u.	*6.6*	
Ammonia, Total, mg/ as N	*0.031*	
Temperature, ^oC	*10*	

B. Compliance With Terms and Conditions of Previous Permit

1. Effluent Limitations – The data shown in the preceding table(s) indicates compliance with the numeric limitations of the previous permit.

   In accordance with 40 CFR Part 122.41(a), any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

VI. DISCUSSION OF EFFLUENT LIMITATIONS

A. Regulatory Basis for Limitations

1. Technology Based Limitations

   a. Federal Effluent Limitation Guidelines – The Federal Effluent Limitation Guidelines for domestic wastewater treatment facilities are the secondary treatment standards. These standards have been adopted into, and are applied out of, Regulation 62, the Regulations for Effluent Limitations.

   b. Regulation 62: Regulations for Effluent Limitations – These Regulations include effluent limitations that apply to all discharges of wastewater to State waters and are shown in Section VIII of the WQA. These regulations are applicable to the discharge from the City of Gunnison WWTF.

2. Numeric Water Quality Standards - The WQA contains the evaluation of pollutants limited by water quality standards. The mass balance equation shown in Section VI of the WQA was used for most pollutants to calculate the potential water quality based effluent limitations (WQBELs), M_2, that could be discharged without causing the water quality standard to be violated. For ammonia, the AMMTOX Model was used to determine the maximum assimilative capacity of the receiving stream. A detailed discussion of the calculations for the maximum allowable concentrations for the relevant parameters of concern is provided in Section V of the Water Quality Assessment developed for this permitting action.

   The maximum allowable effluent pollutant concentrations determined as part of these calculations represent the calculated effluent limits that would be protective of water quality. These are also known as the water quality-based effluent limits (WQBELs). Both acute and chronic WQBELs may be calculated based on acute and chronic standards, and these may be applied as daily maximum (acute) or 30-day average (chronic) limits.

3. Narrative Water Quality Standards - Section 31.11(1)(a)(iv) of The Basic Standards and Methodologies for Surface Waters (Regulation No. 31) includes the narrative standard that State surface waters shall be free of substances that are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.

   a. Whole Effluent Toxicity - The Water Quality Control Division has established the use of WET testing as a method for identifying and controlling toxic discharges from wastewater treatment

facilities. WET testing is being utilized as a means to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life" as required by Section 31.11 (1) of the Basic Standards and Methodologies for Surface Waters. The requirements for WET testing are being implemented in accordance with Division policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010). Note that this policy has recently been updated and the permittee should refer to this document for additional information regarding WET.

4. Water Quality Regulations, Policies, and Guidance Documents

a. Antidegradation - Since the receiving water is Undesignated, an antidegradation review is required pursuant to Section 31.8 of The Basic Standards and Methodologies for Surface Water. As set forth in Section VII of the WQA, an antidegradation evaluation was conducted for pollutants when water quality impacts occurred and when the impacts were significant. Based on the antidegradation requirements and the reasonable potential analysis discussed above, antidegradation-based average concentrations (ADBACs) may be applied.

According to Division procedures, the facility has three options related to antidegradation-based effluent limits: (1) the facility may accept ADBACs as permit limits (see Section VII of the WQA); (2) the facility may select permit limits based on their non-impact limit (NIL), which would result in the facility not being subject to an antidegradation review and thus the antidegradation-based average concentrations would not apply (the NILs are also contained in Section VII of the WQA); or (3) the facility may complete an alternatives analysis as set forth in Section 31.8(3)(d) of the regulations which would result in alternative antidegradation-based effluent limitations.

The effluent must not cause or contribute to an exceedance of a water quality standard and therefore the WQBEL must be selected if it is lower than the NIL. Where the WQBEL is not the most restrictive, the discharger may choose between the NIL or the ADBAC: the NIL results in no increased water quality impact; the ADBAC results in an “insignificant” increase in water quality impact. The ADBAC limits are imposed as two-year average limits.

b. Antibacksliding – As the receiving water is designated Reviewable, and the Division has performed an antidegradation evaluation, in accordance with the Antidegradation Guidance, the antibacksliding requirements in Regulation 61.10 have been met.

c. Determination of Total Maximum Daily Loads (TMDLs) – This stream segment is not on the State’s 303(d) list, and therefore TMDLs do not apply.

d. Colorado Mixing Zone Regulations – Pursuant to section 31.10 of The Basic Standards and Methodologies for Surface Water, a mixing zone determination is required for this permitting action. The Colorado Mixing Zone Implementation Guidance, dated April 2002, identifies the process for determining the meaningful limit on the area impacted by a discharge to surface water where standards may be exceeded (i.e., regulatory mixing zone). This guidance document provides for certain exclusions from further analysis under the regulation, based on site-specific conditions.

The guidance document provides a mandatory, stepwise decision-making process for

determining if the permit limits will not be affected by this regulation. Exclusion, based on Extreme Mixing Ratios, may be granted if the ratio of the facility design flow to the chronic low flow (30E3) is greater than 2:1. Since the ratio of the design flow to the chronic low flow is 0.04:1, the permittee must perform additional studies to determine if further requirements apply.

The remaining threshold tests require site-specific information that is currently not available and thus a determination cannot be made about how the regulation may affect the setting of effluent limits in this permit. Therefore, a compliance schedule is necessary for acquisition of this information, which will be used to complete the testing of exclusion thresholds before the next permit renewal.

e. Salinity Regulations – In compliance with the Colorado River Salinity Standards and the Colorado Discharge Permit System Regulations, the permittee shall monitor for total dissolved solids on a **Monthly** basis. Samples shall be taken at Permitted Feature 001A.

An evaluation of the discharge of total dissolved solids indicates that the City of Gunnison facility exceeds the threshold of 1 ton/day or 350 tons/year of salinity. To determine the TDS loading from this facility, the average reported TDS values were multiplied by the average flow, then by 8.34. The average was determined to be 1.76 tons/day, however the net increase is 140 mg/l, which is less than 400 mg/l, and therefore the facility is exempt from further requirements other than monitoring for TDS.

f. Reasonable Potential Analysis – Using the assimilative capacities contained in the WQA, an analysis must be performed to determine whether to include the calculated assimilative capacities as WQBELs in the permit. This reasonable potential (RP) analysis is based on the Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, dated December, 2002. This guidance document utilizes both quantitative and qualitative approaches to establish RP depending on the amount of available data.

A qualitative determination of RP may be made where ancillary and/or additional treatment technologies are employed to reduce the concentrations of certain pollutants. Because it may be anticipated that the limits for a parameter could not be met without treatment, and the treatment is not coincidental to the movement of water through the facility, limits may be included to assure that treatment is maintained.

A qualitative RP determination may also be made where a federal ELG exists for a parameter, and where the results of a quantitative analysis results in no RP. As the federal ELG is typically less stringent than a limitation based on the WQBELs, if the discharge was to contain concentrations at the ELG (above the WQBEL), the discharge may cause or contribute to an exceedance of a water quality standard.

To conduct a quantitative RP analysis, a minimum of 10 effluent data points from the previous 5 years, should be used. The equations set out in the guidance for normal and lognormal distribution, where applicable, are used to calculate the maximum estimated pollutant concentration (MEPC). For data sets with non-detect values, and where at least 30% of the data set was greater than the detection level, MDLWIN software is used consistent with Division guidance to generate the mean and standard deviation, which are then used to establish the multipliers used to calculate the MEPC. If the MDLWIN program cannot be used the Division's guidance prescribes the use of best professional judgment.

For some parameters, recent effluent data or an appropriate number of data points may not be available, or collected data may be in the wrong form (dissolved vs. total) and therefore may not be available for use in conducting an RP analysis. Thus, consistent with Division procedures, monitoring will be required to collect samples to support a RP analysis and subsequent decisions for a numeric limit. A compliance schedule may be added to the permit to require the request of an RP analysis once the appropriate data have been collected.

For other parameters, effluent data may be available to conduct a quantitative analysis, and therefore an RP analysis will be conducted to determine if there is RP for the effluent discharge to cause or contribute to exceedances of ambient water quality standards. The guidance specifies that if the MEPC exceeds the maximum allowable pollutant concentration (MAPC), limits must be established and where the MEPC is greater than half the MAPC (but less than the MAPC), monitoring must be established. Table VI-1 contains the calculated MEPC compared to the corresponding MAPC, and the results of the reasonable potential evaluation, for those parameters that met the data requirements. The RP determination is discussed for each parameter in the text below.

Table VI-1 – Reasonable Potential Analysis

Parameter	30-Day Average			7-Day Ave or Daily Max			Antideg (2 Year Roll. Ave)		
	MEPC	WQBEL (MAPC)	Reasonable Potential	MEPC	WQBEL (MAPC)	Reasonable Potential	MEPC	ADBAC (MAPC)	Reasonable Potential
E. coli (#/100 ml)	1326	1920	Yes (Qual)	31	3840	Yes (Qual)	NA	NA	NA
TRC (mg/l)	0	0.06	Yes (Qual)	0	0.33	Yes (Qual)	NA	NA	NA
Nitrate as N (mg/l)	NA		NA	NA	175	Monitor	NA	35	Monitor
Nitrite as N (mg/l)	NA		NA	NA	0.87	Monitor	NA	0.13	Monitor
Total Inorganic Nitrogen (mg/l)	NA		NA	NA	175	Monitor	NA	NA	Monitor
NH3 as N, Tot (mg/l) Jan	0.43	4	Yes (Qual)	0.87	34	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Feb	0.45	6.4	Yes (Qual)	0.85	31	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Mar	0.53	13	Yes (Qual)	0.85	27	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Apr	0.35	16	Yes (Qual)	0.74	39	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) May	0.31	20	Yes (Qual)	0.93	49	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Jun	0.21	9.8	Yes (Qual)	0.31	50	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Jul	0.1	7.7	Yes (Qual)	0.1	44	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Aug	0.32	6.2	Yes (Qual)	0.76	27	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Sep	0.37	5.4	Yes (Qual)	0.94	25	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Oct	0.44	4.6	Yes (Qual)	0.78	27	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Nov	0.22	14	Yes (Qual)	0.54	30	Yes (Qual)	NA	NA	Yes (Qual)
NH3 as N, Tot (mg/l) Dec	0.83	20	Yes (Qual)	4.1	30	Yes (Qual)	NA	NA	Yes (Qual)
As, TR (µg/l)	1.6	0.57	Yes	1.6	NA	NA	NA	NA	NA
As, Dis (µg/l)	NA	5937	No (Qual)	NA	5937	No (Qual)	NA	891	No(Qual)
Cd, Dis (µg/l)	2.7	13	No	2.7	33	No	0.27	2	No
Cr, TR (µg/l)	2.3	873	No	2.3	873	No	1	131	No
Cr+3, TR (µg/l)	NA	873	No (Qual)	NA	873	No (Qual)	NA	131	No(Qual)
Cr+3, Dis (µg/l)	NA	2340	No (Qual)	NA	NA	NA	NA	342	No(Qual)
Cr+6, Dis (µg/l)	NA	314	No (Qual)	NA	279	No (Qual)	NA	49	No(Qual)
Cu, Dis (µg/l)	107	283	No	107	262	No	19	108	No
CN, Free (µg/l)				NA	87	No (Qual)	NA	13	No(Qual)
Fe, Dis (µg/l)	NA	6386	No (Qual)				NA	1021	No(Qual)
Fe, TR (µg/l)	5012	24132	No				387	7238	No
Pb, Dis (µg/l)	168	40	Yes	NA	1292	No (Qual)	NA	NA	NA
Mn, Dis (µg/l)	65	48	Yes	NA	53894	No (Qual)	NA	NA	NA
Mo, TR (µg/l)	NA	4566	Monitor	NA	NA	NA	NA	NA	NA
Hg, Tot (µg/l)	1.5	0.29	Yes (Qual)	NA	NA	NA	NA	NA	NA
Ni, Dis (µg/l)	20	1655	No (Qual)	NA	9063	No (Qual)	20	248	No(Qual)
Se, Dis (µg/l)	NA	131	No (Qual)	NA	321	No (Qual)	NA	20	No(Qual)
Ag, Dis (µg/l)	0.13	2.7	No (Qual)	0.13	44	No (Qual)	0.13	0.4	No(Qual)

Zn, Dis (µg/l)	157	3550	No	157	2945	No	45	724	No
Nonylphenol (µg/l)	NA	188	Monitor	NA	489	Monitor	NA	28	Monitor

B. Parameter Evaluation

BOD$_5$ - The BOD$_5$ concentrations in Reg 62 are the most stringent effluent limits and are therefore applied. The removal percentages for BOD$_5$ also apply based on the Regulations for Effluent Limitations. These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

Total Suspended Solids - The TSS concentrations in Reg 62 are the most stringent effluent limits and are therefore applied. The removal percentages for TSS also apply based on the Regulations for Effluent Limitations. These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

Oil and Grease – The oil and grease limitations from the Regulations for Effluent Limitations are applied as they are the most stringent limitations. This limitation is the same as those contained in the previous permit and is imposed upon the effective date of this permit.

pH - This parameter is limited by the water quality standards of 6.5-9.0 s.u., as this range is more stringent than other applicable standards. This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

E. Coli – The limitation for *E. Coli* is based upon the NIL as described in the WQA. A qualitative determination of RP has been made as the treatment facility has been designed to treat specifically for this parameter. Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore imposed upon the effective date of the permit.

Total Residual Chlorine (TRC) - The limitation for TRC is based upon the NIL as described in the WQA. A qualitative determination of RP has been made as chlorine may be used in the treatment process.

Previous monitoring show only one data point as below detection limit. This is likely due to recording error. It is possible that no sample was collected during the previous permit term because the facility uses UV for disinfection. Since this facility currently uses UV for disinfection, it is assumed that the limitations can be met and are imposed upon the effective date of the permit

Nitrate, Nitrite / Total Inorganic Nitrogen - A qualitative determination of RP has been made as the stream segment is classified for Water Supply use, and a water intake is located less than 6 miles downstream of the discharge location. There were no data to perform a quantitative RP analysis for these parameters; therefore monitoring has been added to this permit for the collection of data for future quantitative RP analysis.

Ammonia - The limitation for ammonia is based upon the NILs. A qualitative determination of RP has been made as ammonia is a parameter of concern for municipal wastewater treatment facilities.

Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore effective immediately.

Total Recoverable Arsenic - The RP analysis for total recoverable arsenic was based upon the WQBEL as described in the WQA. With the available data the log-normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was greater than the MAPC and therefore limitations are required. Therefore a, 0.57 µg/l (30-day maximum) requirement has been added to the permit. This limitation is more stringent than the previous limit and the permittee may not be able to consistently meet this limitation; therefore a compliance schedule has been added to the permit to give the permittee time to meet this limitation. The report-only limitation of the previous permit will continue as the interim limitation.

Potentially Dissolved Arsenic, Potentially Dissolved Trivalent Chromium, Dissolved Hexavalent Chromium, Free Cyanide, Potentially Dissolved Selenium – A qualitative no RP has been made based on comparison of effluent result in Table V-1 for As (TR), CN (Tot), Cr (Tot) and Se (TR) and the MAPC for these parameters. The MAPC is significantly higher than the effluent result for the corresponding total metal, therefore monitoring will not be required at this time.

Potentially Dissolved Cadmium – The RP analysis for potentially dissolved cadmium was based upon the ADBAC as calculated in the WQA. With the available data the log-normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was less than half of the MAPC and therefore limitations are not necessary at this time.

Total Recoverable Trivalent Chromium - The RP analysis for total recoverable trivalent chromium was based upon the ADBAC as calculated in the WQA. With the available total chromium data, the log-normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was less than half of the MAPC and therefore limitations are not necessary at this time.

Potentially Dissolved Copper – The RP analysis for potentially dissolved copper was based upon the ADBAC as calculated in the WQA. With the available data the normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was less than half of the MAPC and therefore limitations are not necessary at this time.

Total Recoverable Iron - The RP analysis for total recoverable iron was based upon the ADBAC as calculated in the WQA. With the available data the normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was less than half of the MAPC and therefore limitations are not necessary at this time.

Dissolved Iron - A qualitative no RP has been made based on comparison of effluent result in Table V-1 for Fe (TR) and the MAPC for dissolved iron. The MAPC is higher than the effluent result, therefore monitoring will not be required at this time.

Potentially Dissolved Lead - The RP analysis for potentially dissolved lead was based upon the NIL as described in the WQA. With the available data the normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was greater than the MAPC and therefore limitations are required. Therefore a, 40 µg/l (30-day maximum) requirement has been added to the permit. Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore imposed upon the effective date of the permit.

Dissolved Manganese - The RP analysis for dissolved manganese was based upon the NIL as described in the WQA. With the available data the log-normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was greater than the MAPC and therefore limitations are

required. Therefore a, 48 µg/l (30-day maximum) requirement has been added to the permit. Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore imposed upon the effective date of the permit.

Total Mercury - A qualitative RP analysis was conducted as there was not enough data to conduct a quantitative RP analysis. Sample results for mercury were as high as 1.5 µg/l, compared to the WQBEL of 0.29 µg/l. Therefore, a qualitative determination of RP has been made and 0.29 µg/l (30-day maximum) limitations will be added to the permit. This limitation is more stringent than the previous limit, and based upon previous monitoring, the permittee may not be able to consistently meet this limitation; therefore a compliance schedule has been added to the permit to give the permittee time to meet this limitation. The report-only limitation of the previous permit will continue as the interim limitation.

Total Recoverable Molybdenum - There is no data available regarding the presence/absence or quantification of this parameter in the discharge. Since the potential exists for this parameter to be present, monitoring has been added to the permit.

Potentially Dissolved Nickel - A qualitative no RP analysis was conducted as there was not enough data to conduct a quantitative RP analysis. Comparison of effluent result in Table V-1 and the MAPC for potentially dissolved nickel show that the MAPC is significantly higher than the effluent result, therefore monitoring will not be required at this time.

Potentially Dissolved Silver - A qualitative no RP analysis was conducted as there was not enough data to conduct a quantitative RP analysis. Comparison of effluent result in Table V-1 and the MAPC for potentially dissolved silver show that the MAPC is higher than the effluent result, therefore monitoring will not be required at this time.

Potentially Dissolved Zinc - The RP analysis for potentially dissolved zinc was based upon the ADBAC as calculated in the WQA. With the available data the normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was less than half of the MAPC and therefore limitations are not necessary at this time.

Temperature - Based on the information presented in the WQA, this facility is exempt from the temperature requirements based on flow ratio.

Organics – The organic chemical, nonylphenol, is reasonably expected to be present in the effluent from municipal wastewater treatment facilities. A qualitative determination of RP has been made as this facility is a major municipal wastewater treatment facility. Monitoring of nonylphenol has been included in the permit, beginning one year from the effective date of this permit. The delayed effective date allows time for the permittee to develop a site-specific PQL, if deemed necessary.

Whole Effluent Toxicity (WET) Testing – A qualitative RP has been made as this is a major POTW with potential for a wide variety of pollutants including metals.

1. In-Stream Waste Concentration (IWC) – Where monitoring or limitations for WET are deemed appropriate by the Division, the chronic in-stream dilution is critical in determining whether acute or chronic conditions shall apply. In accordance with Division policy, for those discharges where the chronic IWC is greater than 9.1% and the receiving stream has a Class 1 Aquatic Life use or Class 2 Aquatic Life use with all of the appropriate aquatic life numeric standards, chronic conditions will

normally apply. Where the chronic IWC is less than or equal to 9.1, or the stream is not classified as described above, acute conditions will normally apply. The chronic IWC is determined using the following equation:

IWC = [Facility Flow (FF)/(Stream Chronic Low Flow (annual) + FF)] X 100%

The flows and corresponding IWC for the appropriate discharge point are:

Permitted Feature	Chronic Low Flow, 30E3 (cfs)	Facility Design Flow (cfs)	IWC, (%)
001A	179	6.5	3.5

The IWC for this permit is 4 %, which represents a wastewater concentration of 4 % effluent to 96 % receiving stream.

2. General Information – The permittee should read the WET testing section of Part I of the permit carefully, as this information has been updated in accordance with the Division's updated policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010) . The permit outlines the test requirements and the required follow-up actions the permittee must take to resolve a toxicity incident. The permittee should also read the above mentioned policy which is available on the Permit Section website. The permittee should be aware that some of the conditions outlined above may be subject to change if the facility experiences a change in discharge, as outlined in Part II.A.2. of the permit. Such changes shall be reported to the Division immediately.

C. Parameter Speciation

Total / Total Recoverable Metals (EXCEPT Arsenic)
For standards based upon the total and total recoverable methods of analysis, the limitations are based upon the same method as the standard.

Total / Total Recoverable Arsenic
For total recoverable arsenic, the analysis may be performed using a graphite furnace, however, this method may produce erroneous results and may not be available to the permittee. Therefore, the total method of analysis will be specified instead of the total recoverable method.

Total Mercury
Until recently there has not been an effective method for monitoring low-level total mercury concentrations in either the receiving stream or the facility effluent.

To ensure that adequate data are gathered to show compliance with the limitation and consistent with Division initiatives for mercury, effluent monitoring for total mercury at low-level detection methods will be required by the permit.

Dissolved Metals / Potentially Dissolved
For metals with aquatic life-based dissolved standards, effluent limits and monitoring requirements are typically based upon the potentially dissolved method of analysis, as required under Regulation 31,

Basic Standards and Methodologies for Surface Water. Thus, effluent limits and/or monitoring requirements for these metals will be prescribed as the "potentially dissolved" form.

Dissolved Manganese
The chronic manganese standard is a drinking water-based standard. Thus, sample measurements for Dissolved Manganese must reflect the dissolved fraction of the metal.

VII. ADDITIONAL TERMS AND CONDITIONS

A. Monitoring

Effluent Monitoring – Effluent monitoring will be required as shown in the permit document. Refer to the permit for locations of monitoring points. Monitoring requirements have been established in accordance with the frequencies and sample types set forth in the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities. This policy includes the methods for reduced monitoring frequencies based upon facility compliance as well as for considerations given in exchange for instream monitoring programs initiated by the permittee. Table VII-1 shows the results of the reduced monitoring frequency analysis for Permitted Feature 001A, based upon compliance with the previous permit.

Based upon the reduced monitoring frequency analysis for Permitted Feature 001A, shown in Table VII-1, the permittee is not eligible for reduced monitoring for total recoverable arsenic and total mercury.

Table VII-1 – Monitoring Reduction Evaluation

Parameter	*Proposed Permit Limit*	*Average of 30-Day (or Daily Max) Average Conc.*	*Standard Deviation*	*Long Term Characterization (LTC)*	*Reduction Potential*
pH (su) Minimum	*min 6.5*	*7*	*0.12*	*6.76*	*1 Step*
pH (su) Maximum	*max 9.0*	*7.3*	*0.12*	*7.54*	
E. coli (#/100 ml)	*1920*	*1*	*0.074*	*1.148*	*3 Levels*
TRC (mg/l)	*0.06*	*0*	*NA*	*NA*	*NA*
NH3 as N, Tot (mg/l)	*4.0*	*0.27*	*0.19*	*0.65*	*3 Levels*
BOD5, effluent (mg/l)	*30*	*4.9*	*1.1*	*7.1*	*3 Levels*
TSS, effluent (mg/l)	*30*	*7.1*	*3.2*	*13.5*	*3 Levels*
Oil and Grease (mg/l)	*10*	*0.22*	*0.32*	*0.86*	*3 Levels*
As, TR (µg/l)	*0.57*	*0.71*	*0.31*	*1.33*	*None*
Pb, Dis (µg/l)	*40*	*0.54*	*0.52*	*1.58*	*3 Levels*
Mn, Dis (µg/l)	*48*	*12*	*12*	*36*	*1 Level*
Hg, Tot (µg/l)	*0.29*	*0.7*	*0.7*	*2.1*	*None*

B. Reporting

1. Discharge Monitoring Report – The City of Gunnison facility must submit Discharge Monitoring Reports (DMRs) on a monthly basis to the Division. These reports should contain the required summarization of the test results for all parameters and monitoring frequencies shown in Part I.A of the permit. See the permit, Part I.B, C and D for details on such submission.

2. Special Reports – Special reports are required in the event of an upset, bypass, or other noncompliance. Please refer to Part II.A. of the permit for reporting requirements. As above, submittal of these reports to the US Environmental Protection Agency Region VIII is no longer required.

C. **Signatory and Certification Requirements**

Signatory and certification requirements for reports and submittals are discussed in Part I.D.8. of the permit.

D. Compliance Schedules

The following compliance schedules are included in the permit. See Part I.B of the permit for more information.

a. Mixing Zone Study - Time will be allowed for the permittee to collect the necessary site-specific data and perform threshold tests.
b. Total Recoverable Arsenic and Total Mercury - The permittee has been given until April 30, 2017 to comply with the required limitations for total recoverable arsenic and total mercury. The compliance schedule will give the permittee reasonable time to evaluate means to achieve the required permit limits.

All information and written reports required by the following compliance schedules should be directed to the Permits Section for final review unless otherwise stated.

E. **Stormwater**

Pursuant to 5 CCR 1002-61.3(2), wastewater treatment facilities with a design flow of 1.0 MGD or more, or that are required to have an approved pretreatment program, are specifically required to obtain stormwater discharge permit coverage, or a Stormwater No Exposure Certification, in order to discharge stormwater from their facilities to state waters. The stormwater discharge permit applicable to wastewater treatment facilities is the CDPS General Permit for Stormwater Discharges Associated with Non-Extractive Industrial Activity.

Division records indicate that the City of Gunnison applied for and obtained coverage under the CDPS General Permit for Stormwater Discharges Associated with Non-Extractive Industrial Activity for the Gunnison WWTF facility. The CDPS certification number is COR900105.

F. Economic Reasonableness Evaluation

Section 25-8-503(8) of the revised (June 1985) Colorado Water Quality Control Act required the Division to "determine whether or not any or all of the water quality standard based effluent limitations

are reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons, and are in furtherance of the policies set forth in sections 25-8-192 and 25-8-104."

The Colorado Discharge Permit System Regulations, Regulation No. 61, further define this requirement under 61.11 and state: "Where economic, environmental, public health and energy impacts to the public and affected persons have been considered in the classifications and standards setting process, permits written to meet the standards may be presumed to have taken into consideration economic factors unless:

a. A new permit is issued where the discharge was not in existence at the time of the classification and standards rulemaking, or

b. In the case of a continuing discharge, additional information or factors have emerged that were not anticipated or considered at the time of the classification and standards rulemaking."

The evaluation for this permit shows that the Water Quality Control Commission, during their proceedings to adopt the Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins, considered economic reasonableness.

Furthermore, this is not a new discharger and no new information has been presented regarding the classifications and standards. Therefore, the water quality standard-based effluent limitations of this permit are determined to be reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons and are in furtherance of the policies set forth in Sections 25-8-102 and 104. If the permittee disagrees with this finding, pursuant to 61.11(b)(ii) of the Colorado Discharge Permit System Regulations, the permittee should submit all pertinent information to the Division during the public notice period.

Abigail Ogbe
01/30/2013

VIII. REFERENCES

A. Colorado Department of Public Health and Environment, Water Quality Control Division Files, for Permit Number CO0041530.

B. "Design Criteria Considered in the Review of Wastewater Treatment Facilities", Policy 96-1, Colorado Department of Public Health and Environment, Water Quality Control Commission, April 2007.

C. Basic Standards and Methodologies for Surface Water, Regulation No. 31, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 31, 2013.

D. Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins, Regulation No. 35, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 30, 2013.

E. Colorado Discharge Permit System Regulations, Regulation No. 61, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 1, 2012.

F. Regulations for Effluent Limitations, Regulation No. 62, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective July 30, 2012.

G. Pretreatment Regulations, Regulation No. 63, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective April 01, 2007.

H. Biosolids Regulation, Regulation No. 64, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 30, 2010.

I. Colorado River Salinity Standards, Regulation No. 39, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective August 30, 1997.

J. Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List, Regulation No 93, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective April 30, 2010.

K. Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December 2001.

L. Memorandum Re: First Update to (Antidegradation) Guidance Version 1.0, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 23, 2002.

M. Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December2002.

N. The Colorado Mixing Zone Implementation Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 2002.

O. Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Domestic and Industrial Wastewater Treatment Facilities, Water Quality Control Division Policy WQP-20, May 1, 2007.

P. Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops, Water Quality Control Division Policy WQP-24, March 10, 2008.

Q. Implementing Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (WET) Testing. Colorado Department of Public Health and Environment, Water Quality Control Division Policy Permits-1, September 30, 2010.

R. Policy for Conducting Assessments for Implementation of Temperature Standards in Discharge Permits, Colorado Department of Public Health and Environment, Water Quality Control Division, Policy Number WQP-23, effective July 3, 2008.

S. Policy for Permit Compliance Schedules, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number WQP-30, effective December 2, 2010.

T. Procedural Regulations for Site Applications for Domestic Wastewater Treatment Works, Regulation No. 22, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2009.

U. Regulation Controlling discharges to Storm Sewers, Regulation No. 65, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective May 30, 2008.

V. Water and Wastewater Facility Operator Certification Requirements, Regulation No. 100, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2007.

Abigail Ogbe
01/30/13

IX. PUBLIC NOTICE COMMENTS