



**Colorado Discharge Permit System (CDPS)
 Fact Sheet to General Permit Number COG590000**

**DOMESTIC WASTEWATER TREATMENT FACILITIES THAT DISCHARGE TO RECEIVING WATERS WITH
 A CHRONIC LOW FLOW: DESIGN FLOW RATIO OF 100:1 OR GREATER
 AND
 NOT DISCHARGING TO WATERS THAT ARE DESIGNATED
 AS THREATENED AND ENDANGERED HABITAT**

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I. TYPE OF PERMIT

- A. Permit Type:** General Permit, Second Renewal (previously COG588000)
- B. Discharge To:** Surface Water

II. FACILITY INFORMATION

- A. SIC Code:** 4952 Sewerage Systems
- B. Facility Flows:** Less than 1.0 MGD
- C. Facilities and Discharges Covered**

General Permit COG590000 (the general permit) authorizes discharges from domestic wastewater treatment plants as defined in Regulation 22 (5 CCR 1002-22): Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works. The general permit also authorizes domestic discharges from facilities that accept industrial waste that are not required to develop an industrial pretreatment program pursuant to either Section 307 of the federal Clean Water Act or Section 63.9 of Regulation No. 63 (5 CCR 1002-63): Pretreatment Regulations. The general permit authorizes direct discharges to surface water and discharges to surface water via hydrologically connected groundwater. The applicant must meet all of the qualifications in Part I.A.3 of the general permit in order to qualify for coverage.





For the purposes of this general permit, dischargers to surface water through hydrologically connected groundwater include dischargers that the division has determined must obtain surface water discharge permit coverage. This may include dischargers that were previously covered under a groundwater discharge permit and have been determined to be discharges to surface water and applied for coverage under a surface water discharge permit.

D. Major Changes From Last Renewal:

The Water Quality Control Division (division) is reissuing the Colorado Discharge Permit System (CDPS) general permit for domestic wastewater treatment facilities that discharge to receiving waters with a chronic low flow: design flow ratio of 100:1 or greater and do not discharge to waters that are designated as a threatened and endangered habitat. The 2020 renewal replaces the previous 2013 permit, which expired on May 31, 2018.

The division conducted a routine review of all the terms and conditions in this permit and determined that some minor changes were necessary. The changes made to the permit are mostly organizational and to update the terms and conditions to better reflect the applicable regulations and to match the content presented in the individual permit. The changes in this renewal are as follows:

1. The General permit number has changed from COG588000 to COG590000.
2. Text and formatting were updated throughout the document to create a better understanding of this general permit. The permit was reorganized to match the structure and organization of the domestic individual permit. Some sections of the previous permit were combined; others were separated. The wording was also updated to incorporate any changes to the regulations, division policies, and practices.
3. Parts II and III of this general permit were updated. This includes an update of the terms and conditions, practical quantitation limits (PQLs), and Tables I-V in Part III of the permit.
4. Provisions for Whole Effluent Toxicity (WET) testing requirements are included in this general permit.
5. Specific provisions were added to the permit include coverage for discharges to surface water though hydrologically connected groundwater.
6. Nutrient technology-based effluent limitations, which are applicable to new facilities applying for the COG590000 general permit, in accordance with Regulation 85. Tables 1a - 1c are included in Part I.B.6 of the Permit for calculation of applicable nutrient effluent limitations for new facilities.
7. Provisions for best management practice requirements are added to Part I.C.5 of the permit and are applicable to all certifications under this general permit for on-site wastewater treatment systems (OWTS) (e.g. septic system and absorption field or leach field configuration).

III. RECEIVING STREAM

A. Water Quality Assessment:

An assessment of the limiting stream standards, utilizing a 100:1 dilution ratio (30E3 stream flow to design flow) and conservative ambient stream conditions has been performed to determine the assimilative capacities for certifications under this general permit for potential pollutants of concern. This information is available upon request from the division. The division's Permits Section has reviewed the assimilative capacities to determine the appropriate water quality-based effluent





limitations for certifications under this general permit. The limitations based on the assessment and other evaluations conducted as part of this fact sheet can be found in Part I.B of the permit.

IV. FACILITY DESCRIPTION

A. Collection System

Some facilities operate a separate sewer system that conveys wastewater to the WWTF. Infiltration and inflow (I/I) into the collection system will be evaluated on a case-by-case basis.

Inflow is water, other than wastewater, that enters a sewer system from sources such as roof leaders, cellar drains, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross sections between storm drains and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters or other drainage. Inflow does not include, and is distinguished from, infiltration. (40 CFR 35.2005 Definitions)

Infiltration is water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. (40 CFR 35.2005 Definitions)

I/I is assessed by calculating the gallons per capita per day. The facility reports the total estimated flows for residential, industrial, commercial, and also the population of the service area in Part C of the permit application. The calculation to determine gallons per capita per day is:

$$gallons\ per\ capita\ per\ day = \frac{gal.\ per\ day}{population} \times \%residential\ flows$$

$$\% residential\ flows = \frac{residential\ flows}{residential + commercial + industrial\ flows} \times 100\%$$

Applicability of an I/I study will be determined on a case-by-case basis. Potential factors evaluated may include, but are not limited to: service area population, influent flows, domestic water use outside of the irrigation season, influent BOD concentrations, and current I/I program activities/collection system information. If a study is included in a permit certification, the first event is to submit the results of a study of the collection system. This study allows the permittee to identify I/I sources to prioritize or explain other findings that confirm collection system integrity or provide explanation for variable influent flows that is not I/I. If the facility confirms that there is not I/I, the facility can submit a modification application with the study as seek a review of the special study requirements and change or removal of the subsequent events.

B. Chemical Usage

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.R.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.

C. Treatment Facility, Facility Modifications and Capacities

Pursuant to Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements, facilities certified under this general permit will require a certified operator. If the facility has a question on the level of the certified operator it needs then the facility will need to contact the Engineering Section of the Division.

D. Biosolids Treatment and Disposal

For mechanical facilities, biosolids are typically treated in an aerobic digester. Liquid is removed in a centrifuge, then the biosolids are applied to on-site drying beds.

For lagoon facilities, as this type of treatment facility consists of aerated lagoons, sludge removal will probably be infrequent (once every 5 to 10 years) and only take place if the ponds are drained and cleaned. If sludge is removed from the lagoons for any reason, it must be disposed of in accordance with local, State and Federal regulations.

1. EPA Regulation

The Facility is required under the Direct Enforceability provision of 40 CFR §503.3(b) to meet the applicable requirements of the regulation.

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

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 fact sheet.

E. Effluent Sampling Location

The location for self-monitoring sampling by the permittee for compliance with the effluent monitoring requirements will be specified in the certification, as described in Part I.B.1 of the general permit. The location shall be following treatment, but prior to entering the receiving stream.

Additionally, the location must be representative of the effluent discharged without influence from other waters, such as groundwater or surface water. Therefore, for dischargers to surface waters through hydrologically connected groundwater, effluent sampling shall be conducted prior to discharge to an absorption or leach field.

V. 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. These regulations are applicable to the discharge from facilities certified under the COG590000 general permit.
- c. Regulation 85: Nutrients Management Control Regulation - These regulations include effluent limitations that apply only to new facilities certified under the COG590000 general permit. New treatment facilities are defined in Regulation 85 and include domestic wastewater treatment facilities on a new site that commence discharge to surface water or receive PELs after May 31, 2012.

- 2. Numeric Water Quality Standards - For minor domestic WWTFs, the standard set of applicable surface water quality standards are pH, Total Residual Chlorine (TRC), Escherichia coli (E. coli), and total ammonia. The maximum allowable 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.

Effluent limitations for total inorganic nitrogen (nitrate), metals, and other parameters are not automatically included in certifications under this general permit, because normal domestic effluent is not expected to contain these parameters at levels that would have reasonable potential at 100:1 dilution. However, based on special discharge, influent characteristics, or segment specific consideration, such as a TMDL or 303(d) listing for impaired waters, any parameter might be included in the effluent limitations under this general permit. Additionally, if a receiving water is listed in Regulation 93 on the Monitoring and Evaluation (M&E) list for a parameter, a reporting requirement may be included in the certification for that parameter.

In limited circumstances, effluent limitations for pH, TIN, chloride, sulfate, and total coliform may be implemented based on WQCC Regulation No. 41 “The Basic Standards for Ground Water,” which establishes standards for the protection of human health and the ground water aquifer as a drinking water supply. The applicability of these standards will be determined based on the presence of domestic water supply wells under the influence of the discharge before mixing with the receiving stream.

Discharger Specific Variances shall be implemented in certifications under this general permit, as applicable, in accordance with WQCC Regulation No. 31 “The Basic Standards and Methodologies for Surface Water.”

- 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).

The main parameters of concern for minor domestic wastewater treatment facilities are TRC, *E. Coli*, and ammonia. All three of these parameters are limited in the general permit based on the protection of aquatic life. Therefore, the division makes a default determination of no reasonable potential for a violation of the narrative standard. However, if conditions exist at a specific facility where the division makes a determination of reasonable potential for WET (e.g. non domestic, industrial contributions), WET testing may be required.

4. Water Quality Regulations, Policies, and Guidance Documents

- a. Antidegradation - Since the receiving water has at least 100:1 dilution, an antidegradation review is not required pursuant to Section 31.8 of The Basic Standards and Methodologies for Surface Water.
- b. Antibacksliding - As the receiving water has satisfied the antidegradation-based considerations, in accordance with the Antidegradation Significance Determination Guidance, the antibacksliding requirements in Regulation 61.10 have been met.
- c. Determination of Total Maximum Daily Loads (TMDLs) - If the facility certified under this general permit discharges to a stream segment on the State's 303(d) list, TMDLs may apply. The certification may include TMDLs established for this segment and the corresponding waste load allocations (WLAs) for parameters of concern. As required under the Clean Water Act Section 303(d), these TMDLs have been submitted, through the normal public notification process, to EPA Region VIII for their review and approval.

If the receiving stream is the portion of a segment or may affect a downstream portion of a segment that is currently listed on the State's 303(d) list for development of TMDLs, further limits may also be imposed in the certifications under this general permit. Consistent with division practice, this permit establishes monitoring requirements for these pollutants until such time as the TMDLs is complete and waste load allocations have been determined. The permit may be reopened to include limitations based upon a finalized TMDL.

- 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 chronic low flow to the design flow





is greater than 20:1. Since the ratio of the chronic low flow to the design flow is at least 100:1, certifications under this general permit are eligible for an exclusion from further analysis under the regulation.

- e. Watershed Protection Control Regulations - If the discharge from a facility certified under this general permit ultimately impacts a water body subject to a Control Regulation, such as WQCC Regulations 71-74, restrictions on the amount of total phosphorus may be placed in the certification under this general permit. These control regulations may specify a mass limitation for dischargers of record.
- f. Salinity Regulations - In compliance with the Colorado River Salinity Standards and the Colorado Discharge Permit System Regulations, the permittees certified under this general permit in the Colorado River Watershed may be required to monitor for total dissolved solids.

For municipal dischargers, an incremental increase of 400 mg/l above the flow weighted averaged salinity of the intake water supply is allowed. This may be waived where the salt load reaching the mainstem of the Colorado River is less than 1 ton per day, or less than 366 tons per year. The division may permit the discharge of salt in excess of the 400 mg/l incremental increase, upon a satisfactory demonstration that it is not practicable to attain this limit. See Regulation 61.8(2)(l)(vi)(A)(1) for more information regarding this demonstration.

- g. Reasonable Potential Analysis - 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 (November 2018). 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. This is the case for effluent limits established for pH, TRC, E. coli, and total ammonia.

A qualitative RP determination may also be made where a state or federal ELG exists for a parameter. This is the case for Oil and Grease, BOD₅, CBOD₅, and TSS. As the federal pH ELG is typically less stringent than a limitation based on the WQBELs, the discharge may cause or contribute to an exceedance of a water quality standard. Therefore the pH stream standards are used to establish effluent limits under this permit.

B. Parameter Evaluation

CBOD₅ or BOD₅ - The CBOD₅ or BOD₅ concentrations in Reg 62 are the most stringent effluent limits and are therefore applied. BOD₅ will be the default parameter in the certification, unless the division receives a request from the permit holder to implement CBOD₅ instead, in accordance with Section 62.5(6) of the regulations. The removal percentages for BOD₅ also apply based on the Regulation 62, 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.

In accordance with Regulation 62.5(2), where the permittee has demonstrated that the treatment facility is unable to meet the 85 percent removal requirement for a parameter and the inability to





meet the requirement is not caused by infiltration and inflow, a lower percent removal requirement or a mass loading limit may be substituted provided that the permittee can demonstrate that the numeric limitations for BOD₅ or CBOD₅ can be met.

In cases where the facility discharges to surface water through hydrologically connected groundwater (e.g. an alluvial leach field), sampling after all treatment may be infeasible due to the nature of the existing treatment system, and the facility may not be expected to meet the BOD limitations prior to discharge to an absorption or leach field. For these facilities (i.e., groundwater discharge permit conversions to surface water discharge permit) that are neither lagoon nor mechanical treatment systems, the division will not impose BOD₅ limitations before entering the absorption or leach field, but will require a substitute BOD mass loading limitation at the internal outfall to be a surrogate for compliance with the 30/45 limitation and 85% percent removal limitation as discussed below. This surrogate for compliance will apply only to system configurations with decentralized irregular flows (e.g., cabins with inconsistent occupancy) that provide BOD reductions in the collection system (e.g., septic tanks at individual buildings). This surrogate will not apply to new facilities or facilities that are expanding capacity beyond the previous permit. Regulation 62.5 requires application of chemical monitoring without dilution from other waters. Except as required under federal law, where the division determines that a numeric limit is infeasible, the division shall require implementation of best management practices as a condition of the permit as necessary to control or abate the discharge of pollutants to state waters.

EPA's Onsite Wastewater Treatment System Manual estimates greater than 90% BOD removal from septic tank effluent passing through a leach field, assuming a system that is well designed and operated. Since the facility is operating under the approved design capacity, it is assumed that this facility will remove BOD₅ below the 30/45 mg/l limitations at the end of the leach field. Septic tanks are expected to provide a 30% removal of BOD. **Thus, a limitation of 70% of the approved organic loading capacity from the facility's site approval would be expected prior to entering the absorption or leach field. This is calculated by multiplying the approved organic loading capacity by 0.70, and will be included in the permit as an effluent loading limit in lbs/day.** Compliance with this limitation prior to the leach field would therefore be an indication that a concentration of 30/45 mg/l and 85% removal would be met at the end of the leach field. Thus, the 85% removal and 30/45 mg/l limitations may be waived for these facilities.

Where facilities discharge to subsurface absorption or leach fields, technology based limitations will be applied at an internal outfall and must be met prior to the leach field.

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. For domestic lagoon systems, the TSS percent removal requirement is waived under this general permit. These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

In accordance with Regulation 62.5(2), where the permittee has demonstrated that the treatment facility is unable to meet the 85 percent removal requirement for a parameter and the inability to meet the requirement is not caused by infiltration and inflow, a lower percent removal requirement or a mass loading limit may be substituted provided that the permittee can demonstrate that the numeric limitations for TSS can be met.

For dischargers to surface water through hydrologically connected groundwater that discharge to an absorption or leach field, TSS is expected to be reduced in the leach field soil. The TSS effluent limitations and percent removal requirement may be waived for these facilities that are neither lagoon nor mechanical treatment systems (e.g. septic tanks that discharge to leach fields) under this





general permit.

Where facilities discharge to subsurface absorption or leach fields, technology based limitations will be applied at an internal outfall and must be met prior to the leach field.

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. Previously, the minimum 6.0 value was used due to available dilution. However, Regulation 31 specifies that the water quality standard shall be implemented as follows:

The pH standards of 6.5 (or 5.0) and 9.0 are an instantaneous minimum or maximum, respectively to be applied as effluent limits (Regulation 31, Table 1, Footnote 3).

This limitation is the more stringent than that contained in the previous permit and a permit may be provided in certifications under this general permit, if necessary.

E. Coli - Due to the large dilution required to be certified under this permit, the calculated *E. Coli* WQBEL is greater than that allowed by the division procedure for *E. coli*, which specifies a maximum of 2,000 organisms per 100 ml (30-day geometric mean) and 4,000 organisms per 100 ml (7-day geometric mean). Therefore, the limits will be set to 2,000 and 4,000 respectively. A qualitative determination of RP has been made as the treatment facilities certified under this general permit have been designed to treat specifically for this parameter.

This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

Facilities discharging to receiving waters listed on the 303(d) list of impaired waters or with a Total Maximum Daily Load for *E. Coli* will not be allocated assimilative capacity based on 100:1 dilution. In this case, the effluent limitation in the certification is equal to the water quality standard or the WLA for that segment.

In the event that a facility does not have the technology to meet the effluent limitation of 2,000 organisms per 100 ml (30-day geometric mean) and 4,000 organisms per 100 ml (7-day geometric mean) at the end of the pipe (i.e., septic tank discharge to leach field), an *E. Coli* limitation may be calculated based on site-specific characteristics to determine reasonable potential for the facility to exceed the water quality standard for *E. Coli*.

Total Residual Chlorine (TRC) - The calculated effluent limit for TRC is greater than the 0.5 mg/l daily maximum limit that is allowed by the State Regulations for Effluent Limitations, and therefore the 0.5 mg/l limit has been added to the permit. A qualitative determination of RP has been made as chlorine may be used in the treatment process.

This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

Ammonia - The AMMTOX Model was used to determine the maximum assimilative capacity of the receiving stream. It was found that the most restrictive monthly effluent limitation at 100:1 dilution





needed is 50 mg/l. This limit was set in the general permit to be protective of all waters. A qualitative determination of RP has been made as the treatment facilities certified under this general permit have been designed to treat specifically for this parameter.

This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

In the event that a facility does not have the technology to meet the effluent limitation of 50 mg/l at the end of the pipe (e.g. septic tank discharge to leach field), the AMMTOX model may be run based on the site-specific effluent and receiving water characteristics to determine reasonable potential for the facility to exceed the water quality standard for ammonia.

Facilities discharging to receiving waters listed on the 303(d) list of impaired waters or with a TMDL for ammonia will not be allocated assimilative capacity based on 100:1 dilution. In this case, the effluent limitation in the certification is equal to the water quality standard. The AMMTOX Model will be used to determine site-specific standards based on effluent and receiving water characteristics, and the TMDL will be implemented

Total Inorganic Nitrogen - Effluent limitations for total inorganic nitrogen (nitrate) are not automatically included in certifications under this general permit, because normal domestic effluent is not expected to contain these parameters at levels that would have reasonable potential at 100:1 dilution.

However, if a stream segment is on the 303(d) list of impaired streams for nitrate (Water Supply) or has a TMDL, a daily maximum effluent limit of 10 mg/l will be included in the certification and the TMDL will be implemented.

Effective December 31, 2022, Regulation 31 requires implementation of a nitrate water supply standard of 10 mg/l (as Total Inorganic Nitrogen) in stream segments classified for water supply, regardless of the presence or the location of domestic water supply wells and intakes within the segment. This is based on the results of the June 2016 Water Quality Control Commission (WQCC) hearing, during which the WQCC repealed footnote 4 to Table II (Inorganic Parameters) of Regulation 31 with an effective date of December 31, 2022. The removal of footnote 4 will result in a requirement to calculate permit limits to implement the nitrate water supply standard of 10 mg/l for any discharge to a segment designated as water supply, and to apply the standard either at the point of discharge or, where a mixing zone is allowable, at the end of the mixing zone. The WQCC chose the delayed effective date to allow time to thoroughly evaluate the receiving water below outfalls to determine whether there is an actual existing Water Supply use and to propose modifications of the segments or standards if warranted.

Nutrients (For new facilities only):

Nitrogen - Technology-based **total inorganic nitrogen** limits (Regulation 85.5(1)(b)) apply to new facilities, as defined in Regulation 85. These technology-based effluent limitations are shown in Part I.B.6 (Table 1a) of the permit.

If there is assimilative capacity available for potential interim numeric **total nitrogen** standards at 31.17, those values may apply in lieu of the technology based effluent limitations (Regulation 85.5(1)(b)). Note that these WQBELs are calculated based on the 1 in 5 year median low flow (1E5), which is greater than or equal to than the 30E3. The division determined that using the 100:1 dilution ratio for these calculations is a conservative estimate of this number and determined that approach to be appropriate in this general





permit. These potential WQBELs would be applied on a running annual median basis.

Calculated Total Nitrogen WQBELs based on a 100:1 dilution ratio and a range of ambient upstream total nitrogen are shown in Part I.B.6 (Table 1b) of the permit. In addition, these total nitrogen annual median limits will be capped at 100 mg/l in accordance with division practice and based on characteristic high strength influent concentrations of total nitrogen (Metcalf and Eddy, 2012). This cap reflects an effluent value that most (97%) existing COG588000 permittees can meet based on effluent monitoring data collected in accordance with Regulation 85 from December 2012 through December 2017. It is therefore expected that a new facility would be able to meet this maximum effluent limit as a running annual median upon commencement of discharge.

New facilities are required to meet either Regulation 85 limits or Regulation 31 nitrogen limits, as applicable, upon commencement of discharge. Note that the running annual median requires 1 year of data collection prior to reporting.

Total Phosphorus - Technology-based **total phosphorus** limits (Regulation 85.5(1)(b)) apply to new facilities, as defined in Regulation 85. These technology-based effluent limitations are shown in Part I.B.6 (Table 1a) of the permit.

If there is assimilative capacity available for potential interim numeric **total phosphorus** standards at 31.17, those values may apply in lieu of the technology based effluent limitations (Regulation 85.5(1)(b)). Note that these WQBELs are calculated based on the 1 in 5 year median low flow (1E5), which is greater than or equal to than the 30E3. The division determined that using the 100:1 dilution ratio for these calculations is a conservative estimate of this number and determined that approach to be appropriate in this general permit.

Calculated WQBELs based on a 100:1 dilution ratio and a range of ambient upstream total phosphorus are shown in Part I.B.6 (Table 1c) of the permit. In addition, these total phosphorus annual median limits are capped at 12 mg/l in accordance with division practice and based on characteristic high strength influent concentrations of total phosphorus (Metcalf and Eddy, 2012). This cap reflects an effluent value that most (90%) existing COG588000 permittees can meet based on effluent monitoring data collected in accordance with Regulation 85 from December 2012 through December 2017. It is therefore expected that a new facility would be able to meet this maximum effluent limit as a running annual median upon commencement of discharge.

New facilities are required to meet either Regulation 85 limits or Regulation 31 phosphorus limits, as applicable, upon commencement of discharge. Note that the running annual median and 95th percentile requires 1 year of data collection prior to reporting.

Temperature- All certifications under this general permit are minor domestic WWTFs with a minimum dilution ratio of 100:1. Therefore, facilities certified to discharge under this general permit are exempt from the temperature requirements based on flow ratios.

Metals - The division generally does not consider metals to have reasonable potential for minor domestic wastewater treatment facilities because the waste water character is from domestic (household) sources. Therefore, a default determination of no reasonable potential has been made for certifications under the COG590000 general permit, with exceptions noted below.

If a domestic facility discharges to a stream segment listed on the 303(d) list of impaired





waters for a parameter or a stream segment that has a TMDL for that parameter, effluent limitations will be established for that metal and will be equal to the applicable water quality standard in Regulation 31 or in Basin-specific Regulations 32-38. Receiving stream hardness will be assessed on a case-by-case basis to establish effluent limitations for metals with hardness-based table value standards.

If a domestic facility receives non domestic waste streams (such as reverse osmosis brine or ion exchange backwash), associated pollutants of concern (e.g. metals) will be evaluated for reasonable potential, and effluent limitations will be established any parameters that may be present in the effluent, based on the water quality standards in Regulations 31 and 32-38. Assimilative capacity will be calculated individually for each certification. Receiving stream hardness will be assessed on a case-by-case basis to establish effluent limitations for metals with hardness-based table value standards.

Other Pollutants - The division will consider other pollutants of concern on a case-by-case basis based on the numeric water quality standards in Regulation 31, basin-specific standards in Regulations 32-38, or the narrative water quality standard in Regulation 31.11(1); and considering non domestic contributions to the facility.

Groundwater Standards - Groundwater standards will generally not apply to dischargers under this permit. For permittees that discharge to surface water through hydrologically connected subsurface flow, nearby domestic water supply wells will be evaluated. If a well is determined to be under the influence of the effluent prior to mixing with the receiving stream (i.e. the well is located in the subsurface flow path between the absorption or leach field and the receiving stream), applicable groundwater standards in Regulation 41 will be applied in the certification based on the water supply use of the groundwater. This review will be done on a case-by-case basis, taking into account the extent of the alluvium, the distance to the well, and the design flow of the discharger.

In the limited circumstances where the division has determined that groundwater standards in Regulation 41 will apply, they will apply at the end of pipe. Leach fields with a direct hydrologic connection to surface water may, at times, be below the water table. For these systems, monitoring wells at the end of a leach field may not represent the treated effluent without dilution with other sources. Therefore, in the case of a septic tank discharge to surface water through an absorption or leach field, these standards must be met prior to discharge to the leach field. Below are examples of groundwater pollutants of concern for domestic wastewater treatment facilities:

Total Coliform - If a water supply well is under the influence of the effluent prior to mixing with the receiving stream, a daily maximum effluent limit of 23 org/100ml and a 30-day average limitation of 2.2 org/100ml will be included in the certification.

Total Inorganic Nitrogen - If a water supply well is under the influence of the effluent prior to mixing with the receiving stream, a daily maximum effluent limit of 10 mg/l will be included in the certification.

Chloride - If a water supply well is under the influence of the effluent prior to mixing with the receiving stream, and a 30-day average limitation of 250 mg/l will be included in the certification.

Sulfate - If a water supply well is under the influence of the effluent prior to mixing with the receiving stream, and a 30-day average limitation of 250 mg/l will be included in the certification.





pH - If a water supply well is under the influence of the effluent prior to mixing with the receiving stream, minimum pH limitation of 6.5 s.u. and a maximum pH limitation of 8.5 s.u. will be included in the certification.

Whole Effluent Toxicity (WET) testing - All certifications under this general permit are minor domestic WWTFs with a minimum dilution ratio of 100:1. The division may assign acute and/or chronic WET requirements, in accordance with the Whole Effluent Toxicity (WET) Testing policy.

The division will determine, on a case-by-case basis, whether WET Testing requirements will be applicable to facilities and included in the certification based on factors such as facility type, influent characteristics, variability of the discharge, chemical usage, and industrial contributions. Where applicable, sampling for WET shall occur prior to discharge to the receiving water, without contribution from other sources. Therefore, for dischargers to surface waters through hydrologically connected groundwater, effluent will be sampled prior to an absorption or leach field.

The permittee should read the WET testing section of Part I.C.7 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.L.1 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. An August 19, 1998 EPA memo states that the terms "total metals" and "total recoverable metals" are synonymous. Total metals and total recoverable metals are used to describe methods of hard mineral acid digestion.

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, quarterly 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 Iron and Dissolved Manganese if WS based

The dissolved iron and chronic manganese standards are drinking water-based standards. Thus, sample measurements for these two parameters must reflect the dissolved fraction of the metals.

Cyanide

For cyanide, the acute standard is in the form of "free" cyanide concentrations. Historically, analytical procedures were not readily available for measuring the concentration of free cyanide in a complex effluent therefore the division required weak acid dissociable cyanide to be reported instead. Even though methods are now available to measure free cyanide, weak acid dissociable cyanide will be still required as this analytical procedure will detect free cyanide plus those forms of complex cyanide that are most readily converted to free cyanide. Therefore, ASTM (American Society for Testing and Materials) analytical procedure **D2036-09, Method C**, will be used to measure weak acid dissociable cyanide in the effluent.

TR Trivalent Chromium/Total Chromium

For total recoverable trivalent chromium, the regulations indicate that standard applies to the total of both the trivalent and hexavalent forms. Therefore, monitoring for total recoverable chromium will be required.

Dissolved Hexavalent Chromium

For hexavalent chromium, samples must be appropriately buffered. Dissolved concentrations will be measured rather than potentially dissolved concentrations.

VI. ADDITIONAL TERMS AND CONDITIONS

A. Monitoring

Effluent Monitoring - Effluent monitoring will be required as shown in the certification. Refer to the certification for locations of monitoring points. Monitoring requirements and reduced monitoring frequencies based on facility performance are 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 (WQP-20). In accordance with Regulation 61.8(7)(a)(ix), the treatment facility must have at least one flow monitoring device installed that can be considered representative of both influent and effluent flows. Generally, the division requires flow metering at the influent and effluent locations.

Where effluent flow metering is not practicable, the division may approve on a case-by-case basis flow metering at the influent end of the septic tank or treatment facility or flow metering by some other means (e.g. potable water well flow meter or lift station pump). For these facilities, the effluent flow measuring and sampling type will be specified in the certification.

Influent Monitoring- Influent monitoring will be required as shown in the certification. Refer to the certification for locations of monitoring points. Monitoring requirements and reduced monitoring frequencies based on facility performance are 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. In accordance with Regulation 61.8(7)(a)(ix), the treatment facility must have at least one flow monitoring device installed that can be considered representative of both influent and effluent flows. Generally, the division requires flow metering at the influent and effluent locations.

Small systems can have limited collection area and/or influent flow that is highly variable or





consistently low enough that using a flume for influent flow measuring is not practical or representative due to issues with accuracy and plugging from solids. Where influent flow metering is not practicable, the division may approve on a case-by-case basis flow metering at the effluent end of the septic tank or treatment facility or flow metering by some other means (e.g. potable water well flow meter or lift station pump). For these facilities, the influent flow measuring and sampling type will be specified in the certification. The circumstances for the basis of this allowance will be re-evaluated when conditions change. In accordance with WQP-20, for potable water well flow meter to be used, the facility must be less than 10,000 gpd, and potable water flow must be representative of wastewater flow on a daily basis, (i.e. the water is not used for other purposes like irrigation), and the daily water flow must be collected on data logger. For small systems with an influent lift station, flow measuring of pumped influent flow may be allowed.

Monitoring of influent loading for BOD and TSS is specified in the permit. Where representative influent samples may not be obtained (e.g. partial treatment in the collection system or settling of solids in a septic tank) the influent sample may be collected after an initial septic/primary settling tank that does not receive recycle flow. In that case, the results would be adjusted for reporting based on the following procedure: The influent concentration reported on Discharge Monitoring Reports (DMRs) shall be calculated as the sample result divided by 0.7 for BOD and 0.4 for TSS. Monitoring of influent loading and concentration for secondary treatment parameters, BOD and TSS, is specified in the certification.

Sample type - For composite samples, where flow-weighted influent or effluent composite samples are not practicable, the division may approve time-weighted on a case-by-case basis. Additionally, small or intermittent-type discharges (other than sequencing batch reactors) may not be able to reliably collect aliquots for a composite sample at time-weighted intervals. For situations when the final discharge is intermittent, the effluent sample may be collected following the allowance for batched discharge after treatment with division approval, where a composite sample is defined as sampling equal aliquots during the beginning, middle and end of a decant period, for two consecutive periods during a day (if possible). The monitoring frequency and sample type will be specified in the certification.

B. Reporting

1. Discharge Monitoring Report - The permittee 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.B of the permit or specified in the certification. See the permit, Part I.E of the permit for details on such submission.
2. Additional Reporting - Reporting requirements for a salinity study, groundwater protection, inflow/infiltration study, or an annual compliance report, or other special study may be included in the certification. All special studies must be submitted to the division accompanied by a fully completed "Permit Narrative Conditions Form" available at <https://www.colorado.gov/pacific/cdphe/wq-permit-forms>. Example requirements are included below:
 - a. Salinity Study - As summarized in this fact sheet, the total salinity loading from this facility exceeds that allowable in Section 61.8(2)(l) of the Colorado Discharge Permit System Regulations (Regulation No. 61). The regulations specify that in such cases, the permittee must submit a report addressing salinity. Because there is no record that the permittee has previously submitted this report, a compliance schedule is included for the performance of the study. However, if a report has previously been submitted, the permittee should submit a copy of this report in lieu of the





performance of another study.

Code	Event	Description	Due Date
00508	Salinity Study	Submit salinity study results.	-1 yr

- b. Ground Water Protection - The current lagoon system is not lined and there have been no evaluations to determine whether the lagoons currently meet the allowable exfiltration rate of 10⁻⁶ cm/sec as required by the Colorado Discharge Permit System Regulations. Therefore, a compliance schedule covering the installation of liners is set forth below.

Code	Event	Description	Due Date
04399	Inflow/Infiltration Report	Investigate and submit conclusive information on the seepage from the lagoon system to determine if the allowable exfiltration rate of 10 ⁻⁶ cm/sec is exceeded. If liner integrity is the basis for determination that the seepage meets the criteria, then the report must be prepared by a professional engineer registered in Colorado.	-1 yr
CS008	Written Commitment to Perform Required Work	If the lagoon is found to be seeping in excess of the maximum rate, the facility must submit a plan for the installation of liners. The plan must specify that installation of the liner will begin by <<insert date>> and be completed by <<insert date>>.	-2 yr
CS010	Status/Progress Report	Submit a progress report summarizing the efforts to install the lagoon liner.	-3 yr
60799	Corrective Action Completed	The permittee must submit a report completed by a professional engineer registered in the state of Colorado indicating that the liner of the lagoon has been replaced. The report must certify that the liner material meets the allowable seepage rate of 10 ⁻⁶ centimeters per second or less, and that the placement was accomplished according to the manufacturer's requirements (i.e., all welds were tested and the liner was checked for holes prior to backfilling).	-4 yr

- c. Inflow/Infiltration Study - The permittee shall identify areas where significant I/I exists and begin reducing I/I in accordance with the following schedule.

Code	Event	Description	Due Date
04399	Inflow/Infiltration Report	Submit a plan that identifies sources of I/I and prioritizes repairs and rehabilitation to the collection system to reduce I/I. The plan must be based on a study of the collection system that identifies the areas of the collection system that are contributing significant I/I. A report, summarizing the findings of the study, must be prepared by a professional engineer registered in Colorado, and must accompany the plan. The plan must include annual milestones to correct targeted I/I at 25% each year over the next four years	-1 yr





		beginning <<insert date>>, with elimination of the most significant contributions of I/I beginning first.	
04399	Inflow/Infiltration Report	Submit a progress report summarizing the progress in implementing the I/I control program, including notification that the first 25% of I/I targeted repairs have been completed.	-2 yr
04399	Inflow/Infiltration Report	Submit a progress report summarizing the progress in implementing the I/I control program, including notification that 50% of I/I targeted repairs have been completed.	-3 yr
04399	Inflow/Infiltration Report	Submit a progress report summarizing the progress in implementing the I/I control program, including notification that 75% of I/I targeted repairs have been completed.	-4 yr
04399	Inflow/Infiltration Report	Submit final study results that indicate that 100% of I/I targeted repairs have been completed.	-5 yr

d. Onsite-Wastewater Treatment System Annual Report - The permittee shall submit a report identifying best management practices in accordance with the following schedule.

Code	Event	Description	Due Date
06001	Annual BMP Report	<p>Submit a report demonstrating the use of best management practices (BMPs) to effectively manage the onsite treatment system and to minimize potential risk of any unintentional release of pollutants. At a minimum these BMPs must include:</p> <p>(1) Properly operate and manage the wastewater treatment system at no greater than its maximum treatment capacity. Keep a logbook to demonstrate the average and maximum daily flows for each month of operation.</p> <p>(2) Inspect the scum level and sludge level in each septic tank in order to know when the particular septic tank needs to be pumped. Have the septic tank pumped by a licensed pumping contractor.</p> <p>(3) Conduct routine inspections of all facilities and systems of treatment and control. Maintain a log book on inspection results and a description of any repairs made.</p> <p>(4) Make every effort to prevent hazardous waste, toxic waste, and/or recreational vehicle (RV) septage from entering the collections system.</p> <p>(5) Operate and maintain the wastewater treatment plant in accordance with the division-approved O&M plan, if applicable.</p>	Annually

e. Install flow measurement device(s) - A schedule is included to install flow measurement devices in order to collect representative samples in accordance with permit requirements.





Code	Event	Description	Due Date
81899	Comply with Monitoring and Reporting Requirements	Submit a certification that continuous influent and effluent flow measuring device(s) have been installed, the devices are located to allow for appropriate collection of flow-proportioned composite samples, and are currently operational and calibrated.	~6 months

- 3. Special Reports - Special reports are required in the event of an upset, bypass, or other noncompliance. Please refer to Part II.L 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. Compliance Schedules

Pursuant to Regulations 61.8(3)(n) and 61.9(2)(f), this general permit authorizes the inclusion of compliance schedules in specific certifications when consistent with the Division’s Compliance Schedule Policy CW3 and federal requirements. Specifically, the division will evaluate the need for compliance schedules in specific certifications for discharges that are not new on the basis of what is necessary, appropriate, and whether the compliance schedule will achieve compliance with the underlying water quality based effluent limit “as soon as possible.”

Necessary

“Necessity” for a compliance schedule is determined on the basis of whether associated effluent limits can be met upon the effective date of the certification. A compliance schedule is necessary if there is information in the permit record that shows that the discharger cannot immediately comply with the underlying permit limits. A compliance schedule is only necessary if the effluent limitations are being added to the certification for the first time or if more stringent effluent limits are being added to a renewal permit based on a change in water quality standards. If water quality data exists to establish a level of water quality that can be achieved, then it is also necessary to establish an interim limit in the certification for the pollutant of concern. If data does not exist, then a report-only requirement should be included in the permit. A compliance schedule is not necessary if it is being proposed for a new discharger, if the compliance schedule is being issued to meet federal technology-based effluent limitation guidelines, or if a compliance schedule is based solely on the time needed to develop a use attainability analysis, site specific standard, alternatives analysis for antidegradation or a discharger specific variance.

Appropriate

Once necessity has been determined, the division evaluates the “appropriateness” of a compliance schedule. Factors relevant to whether a compliance schedule in a specific certification under this permit is “appropriate” under 40 C.F.R. § 122.47(a) include: how much time the discharger has already had to meet the WQBEL(s) under prior certifications; the extent to which the discharger has made good faith efforts to comply with the WQBELs and other requirements in its prior certification(s); whether there is any need for modifications to treatment facilities, operations or measures to meet the WQBELs and if so, how long would it take to implement the modifications to treatment, operations or other measures; or whether the discharger would be expected to use the same treatment facilities, operations or other measures to meet the WQBEL as it would have used to meet the WQBEL in its prior certification. The compliance schedule proposed must be an enforceable sequence of events that contains milestones. If the compliance schedule lasts longer than one year, the milestones must be no more than one year apart and must describe how the compliance schedule will lead to compliance with the underlying permit limit at the end of the compliance schedule. The final effluent limits must be contained in the certification and will be included at the end of the compliance schedule.





As soon as possible

Once the division determines that a compliance schedule is necessary and appropriate, the division then uses information to develop a certification compliance schedule with enforceable milestones appropriate for the type of actions that are anticipated to be conducted to attain the underlying permit limits that ensure that compliance with the effluent limitations is achieved "as soon as possible." In determining the duration of the compliance schedule to meet the underlying permit limits, the division intends to provide adequate time to conduct the actions needed leading to compliance with the limits, including the steps necessary to modify or install treatment facilities, retaining expertise, securing funding, characterizing sources, identifying control alternatives, and/or planning, designing and implementing the preferred alternative.

- 1. Listed below are examples of some types of compliance schedules that may be tailored and included in certifications under this permit. All documents required by these compliance schedules (except permit modification applications) must be submitted to the division accompanied by a fully completed "Permit Narrative Conditions Form" available at https://www.colorado.gov/pacific/cdphe/wq-permit-forms.

Regulation 61.8(3)(n)(i) states that a report shall be submitted to the division no later than 14 calendar days following each date identified in the schedule of compliance. The 14 days have already been incorporated into the below dates and therefore all reports are due on or before the date listed in the table.

- a. Activities to Meet Total Ammonia, Total Inorganic Nitrogen Final Limits, E. Coli or TRC - In order to meet Total Ammonia or Total Inorganic Nitrogen final limits, the following schedule for construction (if deemed necessary by the permittee) are included in the permit.

Table with 4 columns: Code, Event, Description, Due Date. Rows include activities like 'Hire a Consultant/Professional Engineer', 'Plan, Report, or Scope of Work', 'Engineering Plan', 'Commence Required Work or On-Site Construction', 'Status/Progress Report', and 'Complete Required Work or On-Site Construction'.

- b. Activities to Meet Dissolved Copper and Dissolved Zinc Final Limits - In order to meet Dissolved Copper and Dissolved Zinc limitations, the following schedule are included in the permit.





Code	Event	Description	Due Date
43699	Facility Evaluation Plan	Submit a report that identifies sources of copper and zinc to the wastewater treatment facility and identifies strategies to control these sources or treatment alternatives such that compliance with the final limitations may be attained.	- 1 yr
00899	Implementation Schedule	Submit a progress report summarizing the progress in implementing the strategies to control sources such that compliance with the final limitations may be attained.	-2 yr
CS017	Achieve Final Compliance with Emissions or Discharge Limits	Submit study results that show compliance has been attained with the final limitations.	- 3 yr

D. Economic Reasonableness Evaluation

Section 25-8-503(8) of the 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."

Note this provision does not require an economic reasonableness evaluation for technology-based limits, monitoring requirements, special studies, recordkeeping requirements, control regulation requirements or other permit terms and conditions that are not water quality standard based effluent limitations.

The Colorado Discharge Permit System Regulations, Regulation No. 61, further define this Section 25-8-503(8) requirement under Regulation 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:

1. A new permit is issued where the discharge was not in existence at the time of the classification and standards rulemaking, or
2. 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 general permit shows that the Water Quality Control Commission (WQCC), during their proceedings to adopt the Basic Standards and Methodologies for Surface Water, Regulation No. 31; Basic Standards and Methodologies for Ground Water, Regulation No. 41; Classifications and Numeric Standards for Arkansas River Basin, Regulation 32; Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12), Regulation 33; Classifications and Numeric Standards for San Juan River and Dolores River Basins, Regulation 34; Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins, Regulation 35; Classifications and Numeric Standards for Rio Grande Basin, Regulation 36; Classifications and Numeric Standards for Lower Colorado River Basin, Regulation 37; and Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin, Regulation 38 considered economic, environmental, public





health and energy impacts to the public and affected persons in the classifications and standards setting process. Specifically, when adopting new standards for pollutants, the WQCC considers the factors listed at Regulation 31.7(2), including:

- a) The need for standards which regulate specified pollutants;
- b) Such information as may be available to the WQCC as to the degree to which any particular type of pollutant is subject to treatment; the availability, practicality, and technical and economic feasibility of treatment techniques; the impact of treatment requirements upon water quantity; and the extent to which the discharge to be controlled is significant;
- c) The continuous, intermittent, or seasonal nature of the pollutant to be controlled;
- d) The existing extent of pollution or the maximum extent of pollution to be tolerated as a goal;
- e) Whether the pollutant arises from natural sources;
- f) Beneficial uses of water; and
- g) Such information as may be available to the WQCC regarding the risk associated with the pollutants including its persistence, degradability, the usual or potential presence of the affected organism in any waters, the importance of the affected organisms, and the nature and extent of the effect of the pollutant on such organisms.

In accordance with Regulation 31.7(2), the WQCC adopts numeric criteria to protect classified uses, and to address treatability limitations or other situations where attaining standards would not be “reasonably related to the economic, environmental, public health and energy impact to the public and affected persons.” In cases where attaining the standard is not necessary to protect the use, the WQCC can adopt a use change or a site-specific standard supported by a Use Attainability Analysis (UAA) (i.e., an assessment of the factors affecting the attainment of aquatic life uses or other beneficial uses, which may include physical, chemical, biological, and economic factors).

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. Parties disagreeing with this finding were required to submit all pertinent information to the division during the public notice period pursuant to Regulation 61.11(b)(ii).

E. Opportunities for Administrative Adjudication

1. Opportunity for Administrative Adjudication

Once the final general permit is issued, the applicant or any other person affected or aggrieved by the division’s final determination on this permit may request an adjudicatory hearing within thirty (30) calendar days of the date of issuance, under 5 CCR 1002-61 (Colorado Discharge Permit System Regulations), Regulation 61.7. Any request must comply with the Water Quality Control Act, 24-4-101, C.R.S., et seq. and the Water Quality Control Commission’s regulations, including Regulation 61.7 and 5 CCR 1002-21 (Procedural Rules), Regulation 21.4(B). Failure to contest any term and condition of the permit in this request for an adjudicatory hearing constitutes consent to the condition by the permittee. Note that administrative adjudicatory hearings are not available for certifications of coverage under this general permit because certifications are not a permit determination.





2. Opportunity to Request a Stay of Terms and Conditions of Final Permit

If an applicant for a renewal permit files a request for an administrative hearing in accordance with section 24-4-105, C.R.S., the applicant may also request that the division stay the contested terms and conditions of the renewal permit. This request must be made within thirty (30) days of issuance of the final permit.

F. Compliance with Section 25-8-503.5 of the Water Quality Control Act (Cost-Benefit Analyses)

Section 25-8-503.5(1) of the Colorado Water Quality Control Act requires the division to do the following when it proposes new or amended permit general permit requirements:

- (a) Prepare a statement of basis and purpose explaining the need for the proposed requirements;
- (b) Present evidence supporting the need for the proposed requirements, including information regarding pollutant potential and available controls, incidents of environmental damage, and permit violations;
- (c) Before implementing the proposed requirements, provide public notice of, and consider comments received from affected parties about, the proposed requirements; and
- (d) Upon request by an affected party, consider and give due weight to a cost-benefit analysis:
 - (I) Received by the division during the comment phase set forth in paragraph (c) of this subsection (I);
 - (II) Concerning one or more proposed requirements that are not already required by federal or state statute or rule;
 - (III) Prepared by a third party chosen from an approved list of analysts, as developed by the division in consultation with representatives of the industries that are subject to general permitting; and
 - (IV) Paid for by the affected party.

The division will comply with Section 25-8-503.5(1)(a) and (b) as follows. In accordance with Section 25-8-503.5(1)(a), this final fact sheet and responses to comments will together constitute the final statement of basis and purpose explaining the need for the proposed requirements. In accordance with Section 25-8-503.5(1)(b), the fact sheet, response to comments, documents referenced in these documents, and the permit-related documents found in the division’s public databases (including compliance and enforcement data for permit certifications covered by the general permit) constitute evidence supporting the need for the proposed requirements.

The division complied with Section 25-8-503.5(1)(c) by providing public notice of the draft permit modification and fact sheet, establishing a public comment period, and considering and responding to the comments received during the public comment period.

With regard to Section 25-8-503.5(1)(d), no cost benefit analysis meeting the criteria established by Section 25-8-503.5(d) was submitted to the division during the public comment period.

VII. REFERENCES

- A. Colorado Department of Public Health and Environment, Water Quality Control Division Files, for Permit Number COG588000.
- B. “Colorado Design Criteria for Domestic Wastewater Treatment Works”, Policy WPC-DR-1, Colorado Department of Public Health and Environment, Water Quality Control Division, September 2012.





- C. Basic Standards and Methodologies for Surface Water, Regulation No. 31, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2020.
- D. Classifications and Numeric Standards for Arkansas River Basin, Regulation No. 32, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2020.
- E. Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12), Regulation No. 33, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2020.
- F. Classifications and Numeric Standards for San Juan River and Dolores River Basins, Regulation No. 34, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2020.
- G. 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 June 30, 2020.
- H. Classifications and Numeric Standards for Rio Grande Basin, Regulation No. 36, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2020.
- I. Classifications and Numeric Standards for Lower Colorado River Basin, Regulation No. 37, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2020.
- J. Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin, Regulation No. 38, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective December 31, 2020.
- K. The Basic Standards for Ground Water, Regulation No. 41, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2020.
- L. Colorado Discharge Permit System Regulations, Regulation No. 61, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 14, 2020.
- M. Regulations for Effluent Limitations, Regulation No. 62, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 14, 2020.
- N. Pretreatment Regulations, Regulation No. 63, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 1, 2017.
- O. Biosolids Regulation, Regulation No. 64, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2014.
- P. Nutrients Management Control Regulation, Regulation No. 85, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective December 30, 2017.
- Q. Colorado River Salinity Standards, Regulation No. 39, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective May 9, 2007.





- R. Section 303(d) List of Water Quality Limited Segments Requiring TMDLs, Regulation No 93, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 14, 2020.
- S. 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 November 30, 2016.
- T. 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.
- U. 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.
- V. Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, Policy Number CW-1, Colorado Department of Public Health and Environment, Water Quality Control Division, effective November 18, 2013.
- W. The Colorado Mixing Zone Implementation Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 2002.
- X. 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.
- Y. Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops, Water Quality Control Division Policy WQP-24, March 10, 2008.
- Z. 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.
- AA. 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.
- BB. Permit Compliance Schedules, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number CW-3, effective March 4, 2014.
- CC. 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.
- DD. Regulation Controlling discharges to Storm Sewers, Regulation No. 65, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective May 30, 2008.
- EE. Water and Wastewater Facility Operator Certification Requirements, Regulation No. 100, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective August 31, 2017.
- FF. Metcalf and Eddy. 2003. Wastewater Engineering: Treatment and Reuse, Boston: McGraw-Hill. 4th





Edition.

VIII. PUBLIC NOTICE COMMENTS

The public notice period was from September 10, 2020 through November 10, 2020. Comments were received from Gabe Racz on behalf of the Colorado Wastewater Utility Council and the Upper Blue Sanitation District. Verbatim comments and the response of the Division are given below.

Additionally, the division made the following changes:

- The limitation for pH has been changed in Parts I.B.2-5 of the permit, and the reasonable potential analysis in Section V of this fact sheet has been updated.
- ICIS Codes and test species for WET have been included in Parts I.B.2-5 of the permit. Sample types for chronic WET have also been corrected, and the footnote has been updated accordingly, including the specification that for chronic WET, “Composite” = 24 hour Composite. Test species specified in Part I.C.8 of the permit have been corrected to indicate that *Ceriodaphnia dubia* and *Pimephales promelas* are applicable.
- Clarification regarding the regulatory basis for implementation of numeric water quality standards for groundwater has been added to Section V.A.2 of this fact sheet.
- Clarification regarding the applicability of groundwater standards to dischargers under this general permit, including the applicability of the pH standard for water supply, has been added to Section V.B of this fact sheet. TDS has been removed from the groundwater standards addressed in Section V.B of this fact sheet. Regulation 41 has been added to Section VII of this fact sheet (References).
- The division has modified Section VI.A of this fact sheet and Parts I.B.1.a, and I.B.2, I.B.3, I.B.7, and I.E.6 of the permit to indicate that flow monitoring shall be applicable at both influent and effluent locations, except in site-specific scenarios where both influent and effluent flow metering is not practicable.
- The division has updated language in Section VI.A of this fact sheet to change the phrase “SBR type treatment system” to “batched discharge after treatment with division approval.”
- The division has added a special study to install flow measurement device(s) (Section VI.B.2.e)
- The division has updated language in Part I.B.1.f of the permit to clarify that discharger specific variances may be included in certifications under this general permit.
- The division has included language in Part I.C.11 of the permit to clarify that the certification may include special studies and additional monitoring requirements.
- The division has included clarification in Part I.B.4, footnote 12, that new or expanded OWTS facilities will not qualify for exemptions of ammonia and *E. Coli* limitations.
- Reference to “on-site wastewater treatment system (OWTS), also known as septic system” have been corrected to indicate that septic systems are examples of on-site wastewater treatment system (OWTS) in Part I.C.5.a of the Permit and Section II.D.7 of this fact sheet. Reference to leach fields have been updated to “absorption or leach field” for clarity throughout this fact sheet.
- Minor grammatical corrections have been completed throughout this fact sheet.
- Reference to the WQCD engineering section and groundwater permitting was removed from Section V.B of this fact sheet.
- In Part I.A.3.f of the permit, the sentence, “the receiving stream must provide, or be thought to provide, at least 100:1 dilution of the effluent discharge,” has been corrected to remove the





phrase, “or be thought to provide” because it is an inaccurate description of how the division makes determinations for flows.

- Footnote 2 in Part I.B.2 and I.B.3 and Footnote 5 in Part I.B.7 (Mechanical Systems) of the permit has been corrected as follows, “See the definition of “composite” in Part I.D of this permit. If the division determines that a flow-weighted composite sample is impracticable for a facility, a time composite sample of four equal aliquots collected at two-hour intervals will be allowed. The monitoring frequency and sample type will be specified in the certification. See Section VI.A of the fact sheet for more information.”
- Footnote 12 in Part I.B.4 of the permit has been corrected as follows, “For existing on-site wastewater treatment systems (OWTS) (e.g. septic tank/leach field) ammonia and *E. Coli* limits are calculated on a case-by-case basis. New or expanded facilities will not qualify for exemptions of these limitations.
- The division has added footnote 13 to Part I.B.4 of the permit to clarify that sample types for non-lagoon systems will be determined on a case by case basis based on system configuration.
- Influent sample type for CBOD5 and BOD5 for lagoon or other non-mechanical facilities has been corrected to “composite” in Part I.B.7 of the permit, in accordance with the division’s Baseline Monitoring Policy (WQP-20). Footnote 5 for these tables has been updated accordingly.
- The definition of “composite” in Part I.D.4 of the permit has been corrected as follows, ““Composite” sample is a minimum of four (4) grab samples collected at equally spaced two (2) hour intervals and proportioned according to flow. For a SBR or intermittent batch discharge type treatment system, a composite sample is defined as sampling equal aliquots during the beginning, middle, and end of a decant period, for two consecutive periods during a day (if possible).”
- The language in Section VI.D (Economic Reasonableness) and VI.F (Cost-benefit analysis) of this fact sheet has been updated.
- Effective dates for references in Section VII of this fact sheet have been updated. The reference in Section VII.B has been corrected to reflect the most up-to-date version of the policy.

Colorado Wastewater Utility Council

Comment 1: These are the comments of the Colorado Wastewater Utility Council (“WWUC”) on the draft CDPS Permit No. COG590000 and accompanying Fact Sheet for Domestic Wastewater Treatment Plants that discharge to receiving waters with a chronic low flow: design flow ratio of 100:1 or greater, published for public comment on September 10, 2020. The WWUC is a nonprofit organization whose mission is to professionally and responsibly promote environmental protection by supporting legislation and regulations which achieve well-defined environmental benefits while maintaining local flexibility. Membership is open to any municipal or quasi-municipal agency in Colorado engaged in the operation of any collection, treatment, or disposal of wastewater. WWUC has forty-five members, representing a wide range of systems from small systems to the largest systems in the state, located on the Front Range, plains, and western slope.

Division Response 1: This comment is noted, and does not propose any modification to the permit or fact sheet. No changes were made to the permit or fact sheet as a result of this comment.

Comment 2: Part IV.A. Collection System, Draft Fact Sheet pg. 3.

WWUC urges the Division to include clear criteria to decide whether to include requirements in discharge permits to implement specific inflow and infiltration controls. All collection systems experience some amount of inflow and infiltration, because it is physically impossible to seal the entire system from all inflow and infiltration. WWUC members routinely have inflow and infiltration control





programs, including investigations of the condition of collection system facilities and evaluations of the average and peak flows. Furthermore, many permittees do not own or operate the collection system and therefore are not in a position to take action to comply with I/I conditions. Therefore, permit requirements should be required only for collection systems owned by the permittee where there is evidence of excessive inflow or infiltration. In this way, the permit requirement would be targeted at permittees that may not have adequate existing inflow and infiltration control programs.

The Draft Fact Sheet, pg. 3, incorporated the definitions of inflow and infiltration from federal regulations at 40 CFR 35.2005. The use of the federal definitions of inflow and infiltration is appropriate, and WWUC supports the use of these definitions. These definitions come from the federal regulations governing grants for construction of treatment works. To receive a grant for treatment works construction, 40 CFR 35.2120 says the applicant must demonstrate that the sewer system is not or will not be subject to excessive infiltration/inflow. Excessive inflow is defined as either chronic operational problems during storm events, or a rainfall-induced total flow that exceeds 275 gallons per capita per day (gpcd) during storm events. Excessive infiltration is defined as a flow rate of greater than 120 gpcd during periods of high groundwater, unless a cost-effectiveness analysis shows that there is excessive infiltration in a specific portion of the system. Systems with excessive inflow or infiltration must perform a study of the sewer system to determine the quantity of excessive inflow or infiltration and to propose a rehabilitation program to eliminate the excessive inflow or infiltration.

The Draft Fact Sheet is unclear about the criteria the Division will use to determine whether there is excessive inflow or infiltration. On page 3, the Draft Fact Sheet says, “Applicability of an I/I study will be determined on a case-by-case basis using influent flows, service area population and other pertinent information, as available.” This is too vague for permittees or the public to review the need for, economic feasibility, and cost-effectiveness of an inflow and infiltration study and rehabilitation program.

It appears from Section VI.B.2.c of the Draft Fact Sheet on page 15 that the Division intends to incorporate a target rate of 120 gallons per day per capita as a monthly average influent flow. If so, the Fact Sheet should clearly state on page 3 that the criteria for requiring an inflow/infiltration study for certifications under the general permit will be based on 120 gpcd monthly average influent flow. In addition, the Division should state in the Fact Sheet why both inflow and infiltration would be measured using the same flow rates, when the definitions of inflow and infiltration are distinct.

The distinction between inflow and infiltration is significant for many Colorado communities. Elevated inflow frequently occurs in mountain communities during spring runoff, when snowmelt can enter collection systems through manhole covers and other openings that are infeasible to seal from inflow. The Division should use measures of excessive inflow or infiltration that are consistent with the federal regulations at 40 CFR 35.2120. EPA based its judgment of excessive inflow and infiltration on the average flows in systems located throughout the country. (EPA Office of Municipal Pollution Control, “I/I Analysis and Project Certification,” May 1985). If the Division uses different statistics to measure excessive inflow or infiltration for purposes of requiring an I/I study, the Fact Sheet must disclose the statistics used and the basis for departing from the statistics used by EPA.

Division Response 2: Infiltration and inflow into the collection system can be due to an improperly operated and maintained collection system. The proper operation and maintenance of a collection system includes identifying, prioritizing and correcting I/I so that the wastewater treatment facility treats wastewater. I/I also includes groundwater entering the collection system. Cracks and gaps in the collection system can allow groundwater pollutants to enter the collection system and serve as a conduit through the WWTF to discharge associated pollutants to surface water; or for untreated sewage to leak out of the collection system before reaching the WWTF.

The division has updated Section VI.B.2.c of the Draft Fact Sheet with current language and removed





the reference to 120 gpcpd. The previous division screening threshold of 120 gallons per capita per day was based on the Federal Construction Grants Program pursuant to the Clean Water Act (40 CFR 35.2120). Division I/I analysis has been updated to screen for potential I/I conditions instead of allowing I/I up to a total per capita of 120, which based on a current average of 85 gpcpd, would allow nearly 50% of flow into a WWTF to be I/I and does not account for potential leakage of untreated wastewater to the groundwater. Aging and unmaintained collection systems can allow untreated sewage to leak out into the surrounding soil and not be conveyed to the wastewater treatment facility. A comparison of potable water production may be used to assess sewage loss from the collection system. Specifically, a differential during non-irrigation season of the amount of potable water produced compared to the amount of wastewater being received in the WWTF may help the permittee assess sewage loss from the collection system. Therefore, the 120 gallons per capita per day threshold can be an outdated metric that ignores the reality that sewage can leak out of the collection system.

The division has provided additional clarity in Section IV (Facility Description) of this fact sheet regarding study requirements and relevant factors in determining the applicability of an I/I study.

Comment 3: Part VI.B.2.c. Inflow/Infiltration Study, Draft Fact Sheet pp. 15 -16. WWUC requests that the Division ensure that, if an Inflow/Infiltration study is necessary, the elements of the study and any repair and rehabilitation plan will be economically reasonable for the facility to complete. Under the Colorado Water Quality Control Act, the water quality benefits of pollution control measures must have a reasonable relationship to the economic, environmental, energy, and public health costs and impacts, and the Division must consider the economic reasonableness of its actions, including evaluation of “the benefits derived from achieving the goals of this article and of the economic, environmental, public health, and energy impacts to the public and affected persons.” CRS 25-8-102(5). Clarification of the requirements of any Inflow/Infiltration study is needed to avoid studies and control programs with infeasible cost and an unreasonable relationship to the water quality benefits. WWUC supports the use of an objective measure of 120 gallons per day per capita as the goal for a repair and rehabilitation plan to reduce excessive infiltration. However, as noted in WWUC’s comments on page 3 of the Draft Fact Sheet, it is not clear that the same measure is appropriate for a plan to reduce excessive inflow. The general permit should not require every permittee to complete 25% of its inflow and infiltration repair and rehabilitation projects each year for four years. This requirement is unclear, because it appears to require elimination of 25% of all inflow and infiltration each year, which is inconsistent with the study plan requirement to reduce I/I below 120 gpcpd. A requirement to eliminate 25% of all inflow and infiltration each year for 4 years would be infeasible for any permittee to meet. The Division’s Guidance Document for the Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works, 5 CCR 1002-22, actually requires facility design to incorporate some amount of inflow and infiltration as part of the design capacity, either by estimating from available data or assuming inflow and infiltration at a minimum of 10% of average daily design flow. (Site Location Guidance, Lines 911-923; 1717-1729; 2442-2452). Instead of specifying the schedule in the permit, the Division should require the permittee to propose a schedule for I/I controls as part of its plan. The cost of inflow and infiltration controls, coupled with costs to upgrade facilities to meet new regulatory requirements, and ongoing maintenance and operation costs, is likely to make it infeasible to complete a program within 4 years. Each permittee will need to balance the costs as well as the financial capability of the system and the community’s economic health to design an inflow and infiltration control plan and schedule. The Division can then review the plan for adequacy. Therefore, WWUC recommends the following language to replace the second paragraph of the initial Inflow/Infiltration Report requirement: The plan must include annual milestones, with elimination of the most significant contributions of I/I beginning first. Then, for each subsequent year, WWUC recommends the following language: Submit a progress report summarizing the progress in implementing the I/I control program, including notification that the targeted repairs scheduled in the implementation plan have been completed.





Division Response 3: See division response to comment 2.

The division determines that it has met its legal obligations to consider economic reasonableness. First, the division notes the quoted section 25-8-102(5) language is taken from the Water Quality Control Act’s lengthy and broad legislative declaration. Importantly, the Water Quality Control Act explicitly tasks the Commission with implementing the WQCA’s legislative declaration. See § 25-8-202(2), C.R.S. (“The commission shall have authority to implement the legislative declaration as prescribed in section 25-8-102”); see also *Barr Lake Vill. Metro. Dist. v. Colo. Water Quality Control Com.*, 835 P.2d 613, 615 (Colo. App. 1992) (holding that the Commission “is expressly delegated authority to implement the Act’s legislative declarations”). In contrast, Section 25-8-503(8), C.R.S. and Regulation 61.11 directly apply to the division when issuing permits. These provisions, as noted, solely address water quality standard based effluent limitations. An I/I study is not a water quality standard based effluent limitation. Second, the division notes that I/I studies can have numerous environmental and public health benefits, including lowering the risks of exfiltration of untreated sewage to groundwater, and this comment provides no evidence that the permit’s I/I study is not economically reasonable. Regulation 61.4(1)(l) states that:

The applicant shall submit any information which it desires the Division to review regarding the economic reasonableness of possible permit conditions as it applies to the applicant. If such information is submitted after the application has been submitted, the applicant must waive or extend the deadline for final issuance of the permit to provide the Division with sufficient opportunity to review the additional data. If the applicant fails to submit information, the Division will base its decision on information reasonably available to it.

Please note that the I/I study provided in section VI.B.2 of this fact sheet is an example of a study that could be implemented in certifications under the general permit. The schedule may be modified based on facility-specific considerations, including economic reasonableness. The example schedule in section VI.B.2 of this fact sheet does not require the facility to eliminate 100% of I/I over four years. The permit requires the facility to identify sources of I/I, prioritize repairs, and implement the targeted repairs. For clarity, the division has edited the language in section VI.B.2 of this fact sheet as follows: “The plan must include annual milestones that should correct targeted I/I at 25% each year over the next four years beginning <<insert date>>, with elimination of the most significant contributions of I/I beginning first” (emphasis added).

The division has provided flexibility to the facility to develop and implement a site-specific plan. The division disagrees that the requirement to complete 25% of targeted repairs is unclear. The language provided in the permit and factsheet provides the framework for the permittee to evaluate its own system, identify and prioritize corrective actions as identified by the permittee to have the wastewater treatment plant treat wastewater generated by users of the wastewater treatment plant. The division has retained the example special study schedule for Inflow/Infiltration.

Upper Blue Sanitation District

Comment 4: These comments are submitted on behalf of Upper Blue Sanitation District. Upper Blue Sanitation District operates the South Blue River wastewater treatment facility (WWTF) that discharges treated wastewater into an underground leach field. For decades the Water Quality Control Division (Division) has permitted this discharge through facility-specific certifications under the WQCD’s general permit for discharges to groundwater. In 2020, the WQCD for the first time observed that the WWTF discharge “is likely in hydrologic connection to surface water and/or the surface water alluvium.” Based on this new observation, which was not supported by any technical analysis, the Division included a facility-specific compliance schedule in the renewal certification for the WWTF under WQCD’s current general permit for discharges to groundwater (Renewal Certification) that requires UBSD to obtain a





surface water discharge permit, or refute the Division’s unsupported observation about a likely hydrologic connection between the WWTF and surface water. UBSD disagrees with the Division’s new interpretation that discharges to ground water must receive surface water discharges based on a “hydrological connection.” The Draft Permit and Draft Fact Sheet for Permit No. COG590000 fail to justify permitting these facilities as surface water discharges. The Draft Permit Documents also fail to justify the application of all effluent limitations at “end of pipe” rather than at downgradient monitoring wells, as permitted under the ground water general permit. Finally, the Draft Fact Sheet fails to justify the inclusion of ground water discharges in a surface water discharge general permit, and fails to meet the requirements of C.R.S. § 25-8-503.5. These comments are about the general permit and fact sheet as written, and do not apply to any facility-specific terms and conditions that may appear in a specific permit certification. UBSD reserves the right to object to terms and conditions in any specific permit certification.

Division Response 4: As stated on the front page of this permit and throughout the permit documents, General Permit COG590000 is a surface water discharge permit under Regulation 61. As explained in permit documents, this permit also covers discharges to surface water through hydrologically connected groundwater. Comments about “discharges to groundwater,” “discharges to hydrologically connected groundwater” or “groundwater discharges” that do not include the complete description are not accurate descriptions of the discharges within the scope of this general permit.

The division is obligated to implement effluent limitations for permitted dischargers that may cause or contribute to an exceedance of a water quality standard in state waters. Regulation 61 describes this requirement:

“Limitations must control all pollutants or pollutant parameters which the Division determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or measurably contribute to an excursion above any water quality standard, including narrative standards for water quality” (Regulation 61.8 (2)(b)(A)).

In the case of groundwater dischargers that have been determined to have a hydrologic connection to surface waters, surface water quality standards apply and must be controlled by permit effluent limitations. The division has determined these dischargers to surface water through hydrologically connected groundwater require surface water discharge permits because they discharge to surface waters. This determination is made on a case by case evaluation with the following considerations:

- If the discharge is not inside any of Colorado’s designated basins (designated by the Groundwater Commission)
- If the discharge is to a well in the surface water alluvium
- If the division determines the discharge location is in proximity to a non-ephemeral surface water feature or the surface water alluvium

Note that the facility may present information to demonstrate that the discharge is not in direct hydrologic connection with surface waters. Additional language regarding discharges to surface water alluvium being covered by this general permit (COG590000) has been added to Section II.C of this fact sheet.

The division disagrees that this fact sheet has failed to justify the application of all effluent limitations at the “end of pipe” rather than at downgradient monitoring wells in the groundwater permit. It is a physical reality that monitoring wells immediately downgradient to subsurface discharges to alluvium or groundwater with a hydrologic connection to surface water are also under the influence of surface water and therefore “downgradient monitoring wells” do not exclusively contain effluent. In reality, these wells can contain dilution water, and therefore are not





representative of the character of the effluent prior to mixing with other waters. For dischargers to surface water through hydrologically connected groundwater such as with a “leach field,” the leach field is determined to be potentially in surface water alluvium, under the influence of surface water, or in proximity to a surface water. Therefore the point of compliance is before dilution or potential for dilution so that the actual effluent of the treatment process can be sampled.

Surface water permits require a permitted outfall location for water quality based effluent limitations. The location established for effluent monitoring must be the place at which there is the “introduction or addition of a pollutant into state waters.” § 25-8-103(3), C.R.S. (defining discharge of pollutants). Similarly, the point of permit compliance must be where the effluent enters state waters. All permit effluent limitations shall be established at the discharge point of the permitted facility unless it is impractical or infeasible. Reg. 61.8(2)(e); 40 C.F.R. § 122.45(a), (h); *Iowa League of Cities v. E.P.A.*, 711 F.3d 844, 856 (8th Cir. 2013). If using the point of discharge as the point of compliance is infeasible, the compliance point may be an internal compliance point after treatment but away from the state water. In such instances the internal compliance point effluent character must be no different than the effluent being discharged into state waters.

For technology-based effluent limitations, Regulation 62 states, “In no case will a discharge be held to be in compliance with any of the limitations set forth below where the discharge is diluted with other waters, unless such compliance would exist without such dilution.” Therefore, for technology-based effluent limitations, effluent limits must apply at “end-of-pipe,” in accordance with Regulation 62.

Regulation 31 does not provide for point of compliance monitoring at downgradient wells for discharges to surface water. In the case of a discharge to surface water through hydrologically connected subsurface flow (e.g. septic tank and leach field with direct hydrologic connection), these effluent limitations must be met at an internal outfall (after treatment) and therefore prior to discharge to the leach field.

Clarity regarding the location of effluent sampling has been added to Sections V.B and IV.E of this fact sheet and Part I.B.1 of the permit.

Comment 5:

Pg. 5, Part I.B.1.b. Percentage Removal Requirements (BOD5 and TSS Limitations)

Dischargers to the surface water through hydrologically connected groundwater that are neither mechanical nor lagoon facilities will be evaluated on a case-by-basis for technology-based effluent limitations.

Mechanical plants permitted under the general permit for discharges to ground water (Permit No. COX634000) meet the technology-based effluent limitations for BOD5 and TSS at an internal monitoring point prior to flow entering the leach fields. If dischargers through “hydrologically connected groundwater” are permitted under Permit No. COG590000, the general permit should specify the identical location for meeting the technology-based effluent limitations.

Division Response 5: For clarity, the following has been added to section V.D of this fact sheet under the BOD and TSS headings: “Where facilities discharge to subsurface absorption or “leach fields,” technology based limitations will be applied at an internal outfall and must be met prior to the leach field.”

Part I.B.1 of the permit states “Self-monitoring sampling by the permittee for compliance with the effluent monitoring requirements specified in this permit, shall be performed at the location(s) designated in the certification authorizing discharge under this permit, following final treatment but





prior to entering the receiving stream, unless otherwise specified in the certification.”

The certification will specify the specific point of compliance for facilities covered under this general permit. No changes were made to the permit as a result of this comment.

Comment 6: 3.2 Pg. 6, Part I.B.2, Limitations for Mechanical Plants with Design Flows Less Than or Equal To 0.25 MGD

If Permit No. COG590000 will include discharges to ground water for facilities using leach fields as part of their treatment, the general permit should include a separate set of effluent limitations for this type of facility. The general permit, as written, does not disclose the terms and conditions that will be applicable to groundwater discharges under this general permit. Therefore, the Division should revise the public notice draft of the permit to specify the limitations that would apply to discharges to ground water under the general permit, and re-publish the draft permit for public comment about the conditions that will be imposed on ground water discharges.

Chlorine Limitations: Facilities that use leach fields for treatment and do not use chlorine should not have a chlorine limitation.

E. Coli, Total Ammonia, Total Phosphorus, and “Other Pollutants” Limitations: Facilities that use leach fields for treatment should be required to meet these limitations at downgradient monitoring wells. Sampling at points before the leach fields would not reflect water quality after treatment. The general permit should specify that the limitations will be met at downgradient monitoring wells.

WET Limitations: Facilities that use leach fields for treatment are unable to conduct WET testing on the effluent after treatment. Sampling of water from monitoring wells for WET testing would not be practicable because the species used in testing do not live in groundwater. Therefore, if dischargers through “hydrologically connected groundwater” are permitted under Permit No. COG590000, the general permit should specify that WET testing will not be required for this type of discharge.

Division Response 6: The phrases “discharges to groundwater,” “discharges to hydrologically connected groundwater” or “groundwater discharges” that do not include the complete description are not accurate descriptions of the discharges within the scope of this general permit. As stated on the front page of this permit and throughout the permit documents, General Permit COG590000 is a surface water discharge permit under Regulation 61. As explained in permit documents, this permit also covered discharges to surface water through hydrologically connected groundwater. See division response to comment 4 regarding discharges to surface water through hydrologically connected groundwater.

The division disagrees that the general permit does not disclose the terms and conditions that will be applicable to dischargers to surface water through hydrologically connected groundwater. Dischargers that are neither lagoon nor mechanical facilities (e.g., OWTS with leach fields) are covered under Part I.B.4 of the permit.

Regarding chlorine limitations for facilities that do not use chlorine, Part I.B.1.d of the permit specifies, “Monitoring for TRC is required only when chlorine is in use.”

There is no basis to exempt a surface water discharge permit from WET testing requirements. This permit covers discharges to surface water, which requires that the permit implement the narrative standard for surface water which states that,

“state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which: ... are





harmful to the beneficial use or toxic to humans, animals, plants, or aquatic life” (Regulation 31.11(1)(a)).

The division will make a determination on the applicability of WET on a case-by-case basis, based on factors such as facility type, influent characteristics, variability of the discharge, chemical usage, and non-domestic contributions, in accordance with the Division’s WET Testing policy. Where applicable, sampling for WET for dischargers to surface waters through hydrologically connected groundwater shall be conducted prior to discharge to an absorption or leach field.

Comment 7: The Draft Fact Sheet does not explain why Permit Number COG590000 needs to include “discharges to surface water via hydrologically connected groundwater.” Previously, domestic wastewater treatment facilities under 1mgd that discharge to groundwater have been permitted in the general permit for discharges to groundwater (now Permit No. COX634000). The general permit for discharges to groundwater includes multiple effluent limitations to prevent exceedances of groundwater standards, which are applicable at downgradient monitoring wells for many parameters, including chloride, total inorganic nitrogen, sulfate, total coliform, and pH. Water quality in downgradient wells is representative of water quality after treatment in leach fields. In contrast, the general permit for surface water discharges, Permit No. COG590000, requires effluent limitations to be met before treatment, or is unclear about the location where effluent limitations must be met by ground water discharges. The Division has not presented any data showing facilities that meet limitations applicable at downgradient monitoring wells in the ground water discharge general permit threaten surface water quality. Therefore, there is no reason for the Division to change the historical permitting practice for ground water discharges.

Division Response 7: See division response to comment 4 and 6. As stated on the front page of this permit and throughout the permit documents, General Permit COG590000 is a surface water discharge permit under Regulation 61. As explained in permit documents, this permit also covered discharge to surface water through hydrologically connected groundwater. Comments about “discharges to groundwater,” “discharges to hydrologically connected groundwater” or “groundwater discharges” that do not include the complete description are not accurate descriptions of the discharges within the scope of this general permit. Correcting errors in and routine review of permit documents is a critical function of the permit renewal process. General permit COG590000 may cover dischargers to surface water, including dischargers to surface water through hydrologically connected groundwater. Dischargers to groundwater are covered by groundwater discharge permits.

Comment 8: Pages 1 -2: “The general permit authorizes direct discharges to surface water and discharges to surface water via hydrologically connected groundwater.”

The fact sheet does not provide any basis for permitting a domestic wastewater discharge to “hydrologically connected groundwater” in a general permit for surface water discharge permits. Regulation 61, Section 61.9(2), authorizes the Division to issue a general permit to cover a “category of discharges.” Section 61.9(2)(a)(ii) authorizes the Division to issue general permits for non-stormwater discharges only if the sources all a) involve the same or substantially similar types of operations; b) discharge the same types of wastes; c) require the same effluent limitations or operating conditions; d) require the same or similar monitoring; and e) are more appropriately controlled under a general permit than under individual permits.

Discharges of domestic wastewater to ground water do not meet these requirements to be combined in a general permit with discharges to surface water. These discharges involve different types of operations, because they operate leach fields instead of or in addition to other types of wastewater treatment. They require different effluent limitations and operating conditions, because the treatment in leach fields occurs in the ground and measurements cannot be taken at the end of a discharge pipe.





For the same reason, they require different monitoring, because only through the use of monitoring wells or lysimeters can sampling occur to determine whether effluent limitations are met after treatment.

The fact sheet fails to explain either what is “hydrologically connected groundwater” or what is the rationale for including discharges to “hydrologically connected groundwater” in this permit. “Groundwater” is defined in Regulations 41 and 61 as “subsurface waters in a zone of saturation which are or can be brought to the surface of the ground or to surface waters through wells, springs, seeps or other discharge areas.” (Reg. 41.3.7; Reg. 61.2(37). This definition recognizes that groundwater may have a hydrological connection to surface water. Therefore, the existence of hydrological connection to surface water does not convert a direct discharge to groundwater to a surface water discharge. The application of a surface water discharge permit to discharges to groundwater with a “hydrological connection” to surface water would require all groundwater discharges to obtain surface water discharge permits, because on some level all groundwater has a hydrological connection to surface water through the water cycle.

Discharges to ground water from domestic wastewater treatment facilities under 1.0mgd are currently permitted under Permit Number COX634000. The fact sheet does not provide information to explain why permitting under the existing general permit should not continue. The fact sheet also does not contain any information that discharges under Permit Number COX634000 create a risk of harm to the environment if allowed to continue under the existing general permit.

The information in the Fact Sheet does not support the treatment of ground water discharges as surface water discharges or their inclusion in Permit No. COG590000 for the following reasons:

- 1) The Fact Sheet fails to explain what “hydrologically connected groundwater” is.
- 2) The Fact Sheet fails to explain how “hydrologically connected groundwater” distinguished from other groundwater.
- 3) There are no data indicating that there are environmental risks to continuing to permit all discharges to groundwater under the existing general permit.
- 4) The Fact Sheet does not describe what parameters, if any, are inadequately controlled by effluent limitations and conditions in Permit Number COX634000.
- 5) The Fact Sheet shows that discharges to “hydrologically connected groundwater” do not share the factors required by Regulation 61.9(2) with discharges to surface water, to justify their inclusion in the same general permit.

Division Response 8: As stated on the front page of this permit and throughout the permit documents, General Permit COG590000 is a surface water discharge permit under Regulation 61. As explained in permit documents, this permit also covered discharge to surface water through hydrologically connected groundwater. Comments about “discharges to groundwater,” “discharges to hydrologically connected groundwater” or “groundwater discharges” that do not include the complete description are not accurate descriptions of the discharges within the scope of this general permit. This permit covers dischargers of domestic wastewater to surface waters with greater than or equal to 100:1 dilution ratio. In some cases, dischargers may discharge to surface water through subsurface flow, and that instance is covered under this general permit. The division maintains that this general permit meets the requirements of Regulation 61.9(2)(a)(ii), which requires that the sources all:

- (A) Involve the same or substantially similar types of operations;
- (B) discharge the same types of wastes;
- (C) require the same effluent limitations or operating conditions;
- (D) require the same or similar monitoring; and
- (E) in the opinion of the Director, are more appropriately controlled under a general permit than under individual permits.





Given that this category of dischargers involves 4 subcategories based on facility type and size with substantially similar types of operations, same type of waste, the same effluent limitations, and similar monitoring requirements, coverage under a general permit is appropriate. Facilities that demonstrate that their discharge to groundwater is not in hydrological connection with surface water shall not be covered under this general permit.

See division response 4 regarding the applicability of monitoring wells.

Comment 9: Page 2: “Specific provisions were added to the permit [to] include coverage for discharges to surface water through hydrologically connected groundwater.”

The permit does not appear to include any conditions specific to discharges to “hydrologically connected groundwater” from mechanical treatment plants under 1.0mgd. Mechanical treatment plants that also use leach fields for treatment cannot conduct compliance monitoring before the flows reach the leach field, because treatment is not complete until after the leach fields. In the fact sheet, the Division must explain how a permittee operating a mechanical treatment plant that discharges to a leach field and then to groundwater will determine its effluent limitations based on the general permit.

Division Response 9: See division response 4. The permit (Part I.B.1) and fact sheet (Section IV.E) state that effluent sampling location will be following treatment but prior to entering the receiving stream or potentially mixing with other waters. Mechanical treatment plants with a design flow <1.0 MGD that discharge to surface water through hydrologically connected groundwater may be covered under this general permit either in Part I.B.2 or I.B.3 of the general permit.

Comment 10: Page 2.

The Draft Fact Sheet says that the general permit covers discharges with a chronic low flow: design flow ratio of 100:1 or greater. The Draft Fact Sheet does not explain how the amount of dilution will be determined for discharges to ground water. Discharges to ground water are likely to have significant dilution from ground water prior to mixing with any surface water. In many locations, there is far more ground water available for mixing than surface water. If ground water discharges are going to be covered by the permit, dilution with ground water must be included in calculations to determine eligibility for this permit.

Division Response 10: As stated on the front page of this permit and throughout the permit documents, General Permit COG590000 is a surface water discharge permit under Regulation 61. As explained in permit documents, this permit also covers discharges to surface water through hydrologically connected groundwater. Comments about “discharges to groundwater,” “discharges to hydrologically connected groundwater” or “groundwater discharges” that do not include the complete description are not accurate descriptions of the discharges within the scope of this general permit. General permit COG590000 covers discharges to surface water. Discharges to groundwater are covered under groundwater general permits. The chronic low flow:design flow ratio will be determined for each facility based low flows in the receiving surface water, calculated in accordance with Regulation 31. This is outlined in Part I.A.3.f, as follows, “The receiving stream must provide at least 100:1 dilution of the effluent discharge. The dilution ratio being based on the 30E3 low flow of the receiving water just above the discharge point, as compared to the permitted design capacity” (emphasis added). Regulation 31.9(1) specifically outlines the determination of low flows for surface waters. As stated numerous times, this is a surface water discharge permit, therefore “dilution from groundwater” is not relevant.

Comment 11: Fact Sheet pg. 11

The fact sheet says that groundwater standards will generally not apply to discharges under the general permit, including discharges to ground water found to be “hydrologically connected” to surface water. Instead, the Division will conduct a site-specific investigation to determine whether a well is “under the





influence of the effluent prior to mixing with the receiving stream.” Discharges that have been permitted under the general permit for discharges to groundwater currently are required to meet limitations based on groundwater standards. Therefore, Upper Blue does not object to the site-specific investigation to determine whether limitations based on groundwater standards can be removed from the permit. However, the fact sheet also says, “In the limited circumstances where the division has determined that groundwater standards in Regulation 41 will apply, they will apply at the end of pipe.” The fact sheet also says that leach fields with a “direct hydrologic connection” to surface water may be below the water table at times. There are several problems with these assertions:

- 1) Some discharges that the Division has claimed have a “hydrologic connection” to surface water have a leach field that is above the water table. When the leach field is above the water table, the effluent limitations should not apply at the end of pipe. Instead, they should apply at monitoring wells and lysimeters because the “end of pipe” is before treatment occurs in the leach field.
- 2) The automatic implementation of effluent limitations at the “end of pipe” for ground water standards is inconsistent with Regulation 41. Section 41.6.D provides that the Division must set the point of compliance “at the distance that provides the highest degree of protection that is technologically and economically feasible.” Section 41.6.D requires the Division to consider several factors to make this determination, including: the hydrologically downgradient limit of the area below the discharge; the classified use of the groundwater; site geology and hydrology; the contaminants discharged; system capacity; the location of domestic wells; beneficial uses of groundwater; treatment system design and hydraulic capacity; the potential to cause exceedances of water quality standards; and technical and economic feasibility. The permit must require consideration of all of these factors for the Division to determine the representative point of compliance for protecting groundwater standards.

Division Response 11: See division response to comment 4. As stated on the front page of this permit and throughout the permit documents, General Permit COG590000 is a surface water discharge permit under Regulation 61. As explained in permit documents, this permit also covers discharges to surface water through hydrologically connected groundwater. Comments about “discharges to groundwater,” “discharges to hydrologically connected groundwater” or “groundwater discharges” that do not include the complete description are not accurate descriptions of the discharges within the scope of this general permit.

Comment 12: The Draft Fact Sheet, pg. 21, asserts that the Draft Fact Sheet constitutes the draft “statement of basis and purpose explaining the need for the proposed requirements” and “evidence supporting the need for the proposed requirements” required by CRS § 25-8-503.5. However, as explained in the comments above, the Draft Fact Sheet does not explain at all the rationale for treating discharges to groundwater as surface water discharges in Permit No. 590000, and does not present evidence relating to the potential for pollutants and the available controls, incidents of environmental damage, and permit violations related to groundwater discharges. Therefore, the Division needs to re-publish a Draft Fact Sheet for public comment that meets the requirements of Section 25-8-503.5.

Division Response 12: The division disagrees with this assertion and notes that the draft fact sheet and final fact sheet (including this response to comments) meets the requirements of section 25-8-503.5, C.R.S. As stated on the front page of this permit and throughout the permit documents, General Permit COG590000 is a surface water discharge permit under Regulation 61. As explained in permit documents, this permit also covers discharges to surface water through hydrologically connected groundwater. Comments about “discharges to groundwater,” “discharges to hydrologically connected groundwater” or “groundwater discharges” that do not include the complete description are not accurate descriptions of the discharges within the scope of this general permit. The division disagrees that the fact sheet requires further rationale for coverage of dischargers to surface water through hydrologically connected groundwater. See division response to comment 4 and Section VI.F of this fact sheet.



