COLORADO
Department of Public Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

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Memorandum

TO: Routt County Department of Environmental Health
B Scott Cowman, scowman@co.routt.co.us

FROM: Ian Babson, Permit Writer, ian.babson@state.co.us
or (contacts) Debbie Jessop Tech IV 303-692-3590

DATE: 11/2/2022

RE: Certification, Colorado Discharge Permit System – Domestic Wastewater Treatment Facilities that Discharge to Waters that are Unclassified; Use Protected; Reviewable; Or Are Designated Threatened And Endangered Species Habitat

Fact Sheet and Information for Permit Number COG591000. Certification Number: COG591184, previously COG588141

Permittee-Facility: Routt County for the Community of Phippsburg – Community of Phippsburg WWTF
Discharging to the Yampa River, COUCYA02a

ATTACHMENTS:
Certification COG591184
CDPS General Permit COG591000 for Domestic Wastewater Treatment Facilities that Discharge to Waters that are Unclassified; Use Protected; Reviewable; Or Are Designated Threatened And Endangered Species Habitat

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Enclosed please find a copy of the permit certification, which was issued under the Colorado Water Quality Control Act.

Please read the enclosed permit, fact sheet and certification as well as this letter, which outline the requirements under this permit, and the explanation of how certain limitations were developed. The Division holds the permittee legally liable for all permit requirements.

The Water Quality Control Division (the Division) has reviewed the application submitted for the Community of Phippsburg WWTF and determined that it qualifies for coverage under the CDPS General Permit Domestic Wastewater Treatment Facilities that Discharge to Waters that are Unclassified; Use Protected; Reviewable; Or Are Designated Threatened And Endangered Species Habitat (the permit).

Discharges under this certification are not allowed until the permittee receives an approval of the domestic wastewater treatment works through the site location and design review process. On September 6, 2022 the Division received an email from the permittee requesting an effective date of December 1, 2024.

Facility Information:

- **Treatment Facility Description**

  The Community of Phippsburg Wastewater Treatment Facility (WWTF) will be a new mechanical facility to replace the current aerated lagoon WWTF. It will consist of coarse screening, an influent equalization basin, fine screening, an aerobic treatment tank, a membrane bioreactor (MBR), and UV disinfection prior to discharge to the Yampa River.

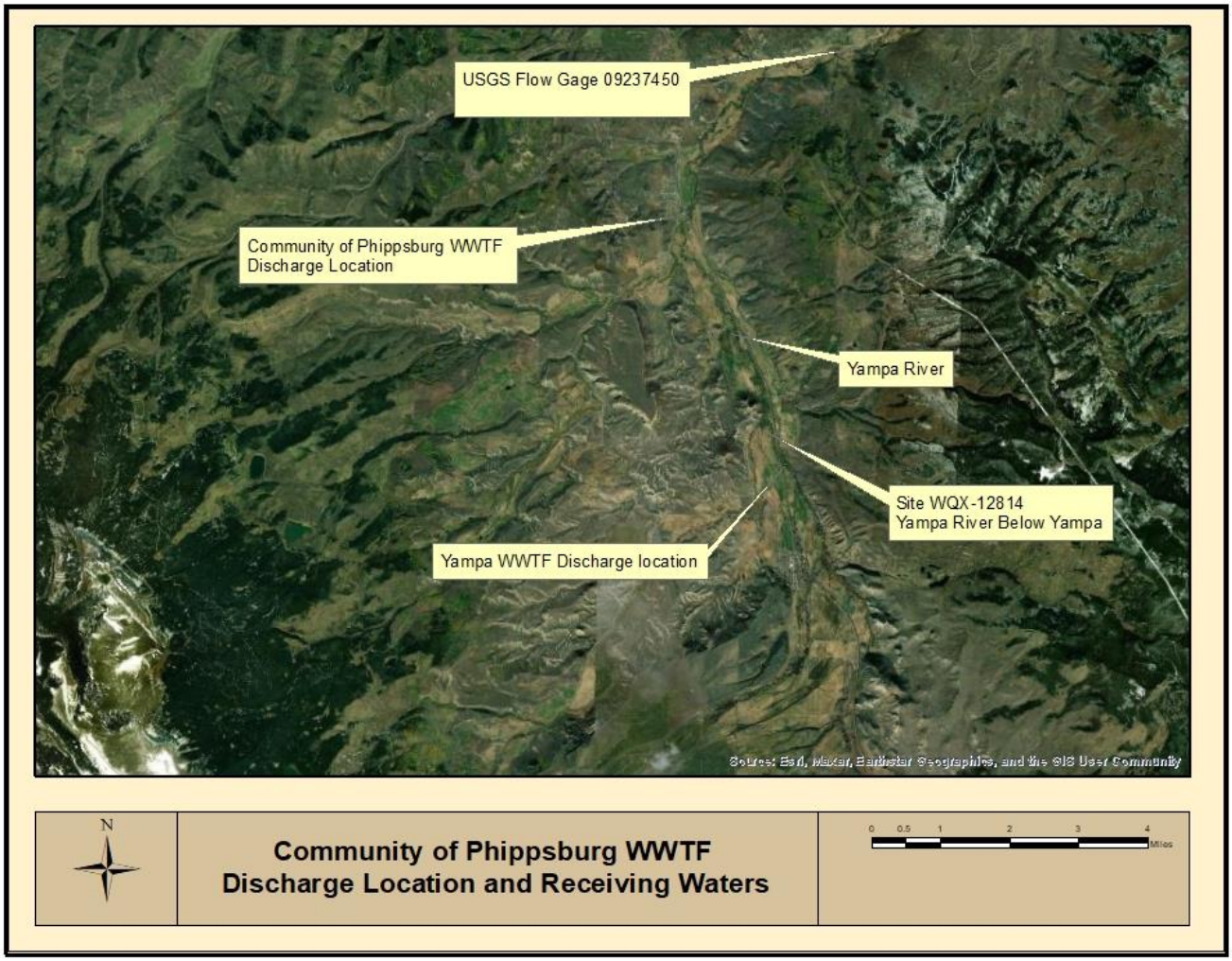
  Pursuant to Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements, this facility will require a certified operator. If the facility has a question on the level of the certified operator it needs the facility will need to contact the Engineering Section of the Division.

  Permit limitations reflecting the delayed effective date of December 1, 2024 include the projected Site approval for 0.030 million gallons per day (MGD) for hydraulic flow (30-day average) and 100 lbs BOD_5/day for organic loading (30-day average), applicable to hydraulic and organic capacities, applicable to Part I.B.3 of the general permit.

- **Facility Location**

  Figure 1 contains a map of the study area evaluated as part of this WQPT:

FIGURE 1



- **Collection System**

  The permittee operates a separate sewer system that conveys wastewater to the WWTF. Infiltration and inflow (I/I) into the collection system has been evaluated for this renewal.

  For this facility the average of the daily average influent flows for the maximum three flow months is 15,867 gallons per day. Based on data submitted in the permit application, the facility's percent of residential flows is 98%. Based on the service area population of 220, the estimated influent flow is 71 gallons per capita per day.

  The facility evaluation does not indicate I/I.

- **Chemical Usage**

  The permittee stated in the application that five chemicals are utilized in their treatment process. The Division reviewed the MSDS sheets and associated information. The permittee provided WET testing results and BioWin modeling in their modification application submitted April 24, 2022 and the associated documents can be found in the permit file for this certification. The following chemicals have been approved for use as summarized in Table 1 below. No chemicals other than those listed in the following table are approved as part of this permit action. The chemicals were evaluated for use consistent with the **operating dosage(s)** and **expected effluent concentration(s)** identified by the permittee in the application materials.

Table 1 – Approved Chemicals

Product/trade name	Chemical constituent(s)	Purpose	Operating Dosage (mg/l)	Outfall	Pollutants of concern
Aluminum Sulfate	Aluminum, Sulfate	Settling and Coagulation	0.115	001	Al, sulfate, pH, WET, sulfide
Sodium Hydroxide	Sodium Hydroxide, Water	Alkalinity	1	001	pH, WET
MicroC 200	Glycerin, Sodium, Chloride, Methanol, Water	Carbon Supplement	0.02	001	TOC, DOC, Methanol, WET
Sodium Hypochlorite	Sodium Hypochlorite, Sodium Hydroxide, Water	Membrane Cleaning	0.1	001	TRC, WET, Chloride
Citric Acid	Citric Acid Monohydrate	Membrane Cleaning	0.5	001	WET, pH

  The chemicals used in treatment contain several pollutants of concern (POCs). Subsequent sections of the fact sheet outline if there are monitoring requirements or limits based on the POCs identified in the table above.

  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.

- **Lift Stations**

  There are no lift stations in the service area.

- **Compliance Review**

  A review of the previous permit monitoring history from December 14, 2017 through June 30, 2022 indicates exceedances of the following permit limits and violations of the following terms and conditions.

  Numeric Violations:

Table 2 – Exceedance Summary

Monitoring Period End Date	Location	Parameter Description	Chronic or Acute
30-Apr-18	Effluent 001A-4	BOD, 5-day, percent removal	Chronic
30-Apr-18	Effluent 001A-4	Flow, in conduit or thru treatment plant	Chronic
30-Jun-18	Effluent 001A-4	BOD, 5-day, percent removal	Chronic

30-Jun-18	Effluent 001A-4	Solids, total suspended	Chronic
30-Jun-18	Effluent 001A-4	Solids, total suspended	Acute
31-Jan-19	Effluent 001A-4	Nitrogen, ammonia total [as N]	Chronic
31-Jan-19	Effluent 001A-4	Nitrogen, ammonia total [as N]	Acute
28-Feb-19	Effluent 001A-4	Nitrogen, ammonia total [as N]	Chronic
28-Feb-19	Effluent 001A-4	Nitrogen, ammonia total [as N]	Acute
31-Jan-20	Effluent 001A-4	Nitrogen, ammonia total [as N]	Acute
29-Feb-20	Effluent 001A-4	Nitrogen, ammonia total [as N]	Acute
31-May-20	Effluent 001A-4	Solids, total suspended	Chronic
31-May-20	Effluent 001A-4	Solids, total suspended	Acute
30-Jun-20	Effluent 001A-4	Solids, total suspended	Chronic
31-Jan-21	Effluent 001A-4	E. coli	Chronic
31-Jan-21	Effluent 001A-4	E. coli	Acute
30-Jun-21	Effluent 001A-4	BOD, 5-day, 20 deg. C	Chronic
30-Jun-21	Effluent 001A-4	BOD, 5-day, 20 deg. C	Acute
30-Jun-21	Effluent 001A-4	BOD, 5-day, percent removal	Acute
30-Jun-21	Effluent 001A-4	Solids, total suspended	Chronic
31-Jul-21	Effluent 001A-4	Solids, total suspended	Chronic
31-Aug-21	Effluent 001A-4	BOD, 5-day, 20 deg. C	Acute
31-Jan-22	Effluent 001A-4	BOD, 5-day, 20 deg. C	Chronic
31-Jan-22	Effluent 001A-4	BOD, 5-day, 20 deg. C	Acute
31-Jan-22	Effluent 001A-4	BOD, 5-day, percent removal	Chronic
31-Mar-22	Effluent 001A-4	BOD, 5-day, 20 deg. C	Chronic

Compliance Advisories:

- Incomplete Discharge Monitoring Report – March 9, 2018: Missing Influent BOD results (30-day Avg., 7-day Max) for the Month of December 2017.
- Reported Effluent Violation – August 24, 2018: Reported Effluent violation for flow (30-day average) and BOD (percent removal) for the month of April 2018. Reported Effluent violation for TSS (30-day Avg., 7-day Max), and BOD (percent removal) for the month of June 2018.
- Permit Compliance Schedule Violation – December 21, 2018: Permittee failed to submit information on the integrity of their lagoon liners by October 1, 2018.
- Reported Effluent Violation – May 24, 2019: Reported Effluent violation for total ammonia (30-day average, 7-day Max) for the months of January and February 2019.
- Operator Certification – September 24, 2021: Division had not received information or documents demonstrating that the WWTF is operated under the supervision of an ORC.
- Operator Certification – March 25, 2022: Division had not received information or documents demonstrating that the WWTF is operated under the supervision of an ORC.

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

Basis of Certification Limitations

- **Stream Segment Information**

The discharge is to the Yampa River, within Segment COUCYA02a of the Yampa River sub-basin, Upper Colorado and North Platte basin, found in the Classifications and Numeric Standards for the Upper Colorado and North Platte basin River Basin (Regulation No. 33; last effective update effective December 31, 2021). Segment COUCYA02a is reviewable and is classified for the following beneficial uses: Recreation Class E, Aquatic Life – Class 1 Cold, Water Supply, and Agriculture.

- **Nearby Facilities**

  An assessment of Division records indicates there is another facility discharging to the same stream segment immediately upstream from this facility.

  - Town of Yampa WWTF (CO0030635 – conversion to COG591185)

  Due to its proximity, the Community of Phippsburg WWTF was modeled in conjunction with the Town of Yampa WWTF when determining available assimilative capacities.

- **Low Flow Determination**

  The Colorado Regulations specify the use of low flow conditions when establishing water quality based effluent limitations, specifically the acute and chronic low flows. The acute low flow, referred to as 1E3, represents the one-day low flow recurring in a three-year interval, and is used in developing limitations based on an acute standard. The chronic low flow, 30E3, represents the 30-day average low flow recurring in a three-year interval, and is used in developing limitations based on a chronic standard.

  To model Community of Phippsburg WWTF and the Town of Yampa WWTF together their design flow was combined and calculated from the discharge point of the Town of Yampa WWTF. Typically, a flow gage measurement immediately upstream of the Town of Yampa WWTF should be used. However, because there were no flow gages immediately upstream of the Town of Yampa WWTF, the Division used watershed ratios to determine low flow above the facility. Daily flows from the USGS Gage Station 09237450 (Yampa River above Stagecoach Reservoir, CO) were obtained and the annual 1E3 and 30E3 low flows were calculated using U.S. Environmental Protection Agency (EPA) DFLOW software. The output from DFLOW provides calculated acute and chronic low flows for each month. To estimate the low flows at the Town of Yampa WWTF discharge point, the ratio of the watershed area above the Town of Yampa WWTF to the watershed area above the gage station was determined. The low flow calculated at the gage station was multiplied by the ratio of watershed areas to determine the low flows available for the combined flow of Community of Phippsburg WWTF and the Town of Yampa WWTF. The watershed area above USGS Gage Station 09237450 was determined to be 208 miles and the watershed area above the Town of Yampa WWTF was determined to be 100 miles, resulting in a watershed ratio of 100:208.

  Note that USGS Gage Station 09237450 is located more than 10 miles downstream from the discharge of Town of Yampa WWTF and there exist many agricultural ditches between the gage station and facility discharge. Despite the number of ditches between the facility discharge and the gage station, the Division has determined that the use of watershed ratios to determine low flows above the Town of Yampa WWTF is adequate until new flow information becomes available.

  Flow data from December 6, 2011 through December 5, 2021 were available from the gage station. The gage station and time frames were deemed the most accurate and representative of current flows and were therefore used in this analysis.

  Based on the low flow analysis described previously, the upstream low flows available to the Community of Phippsburg WWTF were calculated and are summarized in the Table 3 below.

Table 3 – Low Flows

Low Flows for the Yampa River at the Community of Phippsburg WWTF

Low Flow (cfs)	*Annual*	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*
1E3 Acute	3.1	9.1	9.6	14	7.7	3.6	3.1	7.1	7.7	5.3	7.7	8.7	8.2
30E3 Chronic	6.7	11	11	14	7.7	7.1	6.7	7.1	7.7	7.7	7.7	10	10

  This leads to a 30E3: dilution ratio of 32:1 for the combined facilities (combined design flow of 0.135 mgd). The Community of Phippsburg WWTF dilution ratio of 304:1 will be used for mixing zone analysis, antidegradation and temperature analysis.

- **Mixing Zone**

  Since the ratio of the chronic low flow to the design flow is 304:1, the permittee is eligible for an exclusion from further analysis under the regulation.

- **TMDL**

The receiving stream to which the Community of Phippsburg WWTF discharges is currently listed on the State's 303(d) list for development of TMDLs for Total Arsenic. However, the TMDL has not yet been finalized. Although this certification may establish a limit for this pollutant, it does not represent the TMDLs and waste load allocations, and are therefore subject to change upon finalization of an approved TMDL for this segment.

- **Technology Based Standards**

  The limitations for BOD_5, oil and grease, and total suspended solids are from Regulation 62, which apply to all discharges that would be covered under this General Permit. Additionally, the percent removal requirements for BOD_5 and TSS apply as noted in Part I.B of the general permit.

- **Water Quality Standards**

  Pollutants of concern may be determined by one or more of the following: facility type; effluent characteristics and chemistry; effluent water quality data; receiving water quality; presence of federal effluent limitation guidelines; or other information.

  The following parameters were identified by the Division as pollutants to be evaluated for this facility:

  - E. coli
  - Total Residual Chlorine
  - Ammonia
  - Temperature
  - PFAS
  - Nitrite
  - Nitrate (as TIN)
  - Total Arsenic (303d list)
  - Chloride (chemical addition)
  - Total Recoverable Aluminum (chemical addition)
  - Total Organic Carbon (TOC) (chemical addition)
  - Methanol (chemical addition)
  - Sulfate (chemical addition)
  - Sulfide (chemical addition)

  The receiving water for this facility (Yampa River) is listed on Colorado's 303d list for Total Recoverable Arsenic. Therefore, limits for this parameter will be implemented in this certification.

  In their application materials for chemical approval, the permittee indicated the inclusion of sulfate, chloride, aluminum, and methanol as components of chemicals used in treatment. A monitoring requirement will be added for each of these pollutants. TOC monitoring has been added because the toxicity of aluminum is associated with TOC concentrations.

  Numeric standards are developed on a basin-specific basis and are adopted for particular stream segments by the Water Quality Control Commission. The standards in Table 4a have been assigned to stream segment COUCYA02a in accordance with the Classifications and Numeric Standards for the Upper Colorado and North Platte basin River Basin (Regulation No. 33; last effective update effective December 31, 2021). Additionally, the parameters in Table 4b are also being evaluated as they are parameters of concern for this facility type. These parameters are being included based on the numeric standards in Regulation 31.

Table 4a - Instream Standards for Stream Segment COUCYA02a
Physical and Biological
Dissolved Oxygen (DO) = 6 mg/l, minimum (7 mg/l, minimum during spawning)
pH 6.5- 9.0
E. coli chronic = 126 colonies/100 ml
Temperature June-Sept = 17° C MWAT and 21.7° C DM
Temperature Oct-May = 9° C MWAT and 13° C DM
Chlorophyll a chronic = 150 (mg/m^3)*
Inorganic
Total Ammonia acute and chronic = TVS
Chlorine acute = 0.019 mg/l
Chlorine chronic = 0.011 mg/l
Free Cyanide acute = 0.005 mg/l
Sulfide chronic = 0.002 mg/l
Boron chronic = 0.75 mg/l
Nitrite chronic = 0.05 mg/l
Nitrate acute = 10 mg/l
Chloride chronic = 250 mg/l
Phosphorus chronic = 0.11 mg/l*
Sulfate chronic WS = The greater of ambient water quality as of January 1, 2000 or 250 mg/l
Metals
Dissolved Arsenic acute = 340 µg/l
Total Recoverable Arsenic chronic = 0.02 µg/l
Dissolved Cadmium acute cold and chronic = TVS
Total Recoverable Cadmium acute = 5 µg/l
Total Recoverable Trivalent Chromium acute = 50 µg/l
Dissolved Trivalent Chromium chronic = 134
Dissolved Hexavalent Chromium acute and chronic = TVS
Dissolved Copper acute and chronic = TVS
Dissolved Iron chronic WS = The greater of ambient water quality as of January 1, 2000, or 300 µg/l
Total Recoverable Iron chronic = 1000 µg/l
Dissolved Lead acute and chronic = TVS
Total Recoverable Lead acute = 50 µg/l
Dissolved Manganese chronic WS = The greater of ambient water quality as of January 1, 2000, or 50 µg/l
Dissolved Manganese acute and chronic = TVS
Total Recoverable Molybdenum chronic = 150 µg/l
Total Mercury chronic = 0.01 µg/l
Dissolved Nickel acute and chronic = TVS
Total Recoverable Nickel chronic = 100 µg/l
Dissolved Selenium acute and chronic = TVS
Dissolved Silver acute and Dissolved Silver chronic for trout = TVS
Dissolved Uranium acute and chronic = Varies**
Dissolved Zinc acute and chronic = TVS

** applies only above the facilities listed at 33.5(4)*

*** Uranium standard varies based on site specific conditions, as described in Regulation 38.5(3):*

a.) Uranium levels in surface waters shall be maintained at the lowest practicable level.

b.) In no case shall uranium levels in waters assigned a water supply classification be increased by any cause attributable to municipal, industrial, or agricultural discharges so as to exceed 16.8-30 µg/l or naturally-occurring concentrations (as determined by the State of Colorado), whichever is greater.

Table 4b - Instream Standards From Regulation 31
Total Recoverable Aluminum acute and chronic = TVS
Methanol = 14000 µg/l

The Yampa River is classified as water supply, and there are no known drinking water intakes downstream of the discharge, therefore, total inorganic nitrogen water supply limits will only apply after December 31, 2022. The

permit will become effective after December 31, 2022 and therefore the TIN water supply limits will be applied upon the effective date.

An acute nitrate standard of 10 mg/l is assigned to this segment. Because nitrite and ammonia can also form nitrate, compliance with the nitrate standard is achieved through implementation of a Total Inorganic Nitrogen (T.I.N.) limit. T.I.N. effectively measures nitrate and its precursors including nitrite and ammonia.

Note that for many metals, the standards are dependent on the hardness of the receiving stream. Because total recoverable aluminum is a pollutant of concern for this facility, hardness data for the Yampa River were obtained from CDPHE site WQX-12808P (Yampa River Downstream of Stagecoach) approximately 7 miles downstream of the facility for the period of record of July 2012 through June 2017. The average hardness is 207 mg/l based on 11 samples, and the TVS calculations are provided below.

Table 5 – TVS Standards				
Parameter	***In-Stream Water Quality Standard***		***TVS Formula: Hardness (mg/l) as CaCO3 =***	**207**
Aluminum, Total Recoverable	Acute	9265 µg/l	$e^{(1.3695(\ln(\text{hardness}))+1.8308)}$	
	Chronic	1323 µg/l	$e^{(1.3695(\ln(\text{hardness}))-0.1158)}$	

For organic parameters, the aquatic life and water + fish limits will be applied.

- **Ambient Water Quality**

To conduct an assessment of the ambient water quality upstream of the Community of Phippsburg WWTF, data were gathered from CDPHE site WQX-12814 (Yampa River below Yampa) located approximately 4 miles upstream from the facility. Data were available for a period of record from July 2013 through May 2017. These data are summarized in Table 6 below. Total aluminum data were not available and therefore dissolved aluminum data were used. Data were not available for e. *coli*, nitrate, nitrite, or methanol. Per Division practice their ambient concentrations will be assumed to be zero.

There are no point sources discharging total residual chlorine within one mile of the Community of Phippsburg WWTF. Because chlorine is rapidly oxidized, in-stream levels of residual chlorine are detected only for a short distance below a source. Ambient chlorine was therefore assumed to be zero.

For Water Supply sulfate, the standard is the greater of ambient water quality as of January 1, 2000, or 250 mg/l. Ambient water quality as of January 1, 2000 is the 85th percentile of data and as listed in the Assessment unit database from January 1995 to December 1999, with an expansion of date range as needed to capture 10 data points. The ambient water quality collected from the Assessment Unit database equals 170 mg/l, therefore the water supply limit is 250 mg/l, as it is greater than the ambient water quality as of January 1, 2000.

Ambient data were collected from CDPHE site WQX-12814 (Yampa River below Yampa) located approximately 4 miles upstream from the facility. Data were available for a period of record from July 2013 through May 2017. Total aluminum data was not available and therefore dissolved aluminum data was used. Data was not available for methanol or nitrite. Per Division practice the ambient methanol and nitrite concentrations will be assumed to be zero.

Table 6 - Ambient Water Quality								
Parameter	***Number of Samples***	***15th Percentile***	***50th Percentile***	***85th Percentile***	***Mean***	***Maximum***	***Chronic Stream Standard***	***Notes***
Total Inorganic Nitrogen as N (mg/l)	8	0.021	0.11	0.23	0.12	0.3	NA	1
Nitrite as N (mg/l)	0	0	0	0	0	0	0.05	
NH_3 as N, Tot (mg/l)	8	0.021	0.036	0.047	0.036	0.07	TVS	
Al, TR (µg/l)	8	0	0	0	3.9	31	1323	2,3

As, TR (µg/l)	6	0.39	1.3	1.5	1.1	2.2	0.02	4
Chloride (mg/l)	2	0.3	1	1.7	1	2	250	
Sulfate (mg/l)	8	35	43	54	44	63	250	5
Sulfide as H_2S (mg/l)	0	0	0	0	0	0	0.002	
Methanol (µg/l)	0	0	0	0	0	0	14000	

Note 1: Total Inorganic Nitrogen is an acute stream standard.

Note 2: Total Recoverable data were not available and thus dissolved ambient data was substituted

Note 3: When sample results were below detection levels, the value of zero was used in accordance with the Division's standard approach for summarization and averaging purposes.

Note 4: The ambient water quality exceeds the water quality standards for these parameters.

Note 5: For sulfate, the water supply standard is the greater of ambient water quality as of January 1, 2000, or 250 mg/l. Ambient water quality as of January 1, 2000 is the 85th percentile of data and as listed in the Assessment unit database from January 1995 to December 1999, with an expansion of date range as needed to capture 10 data points. The ambient water quality collected from the Assessment Unit database equals 170 mg/l, therefore the water supply limit is 250 mg/l as it is greater than the ambient water quality as of January 1, 2000.

- **Water Quality Based Effluent Limitations**

E. coli: A qualitative determination of reasonable potential has been made as the treatment facility has been designed to treat specifically for this parameter. The selected chronic E. *coli* WQBEL of 2000 cfu/100ml, was determined using an ambient concentration of 1 cfu/100ml and a dilution ratio of 32:1 (>20:1) from Table 3a of the COG591000 permit.

TRC: A qualitative determination of reasonable potential has been made as chlorine may be used in the treatment process. The selected chronic TRC WQBEL of 0.341 mg/l, was determined using an ambient concentration of 0 mg/l and a dilution ratio of 30:1 from Table 4a of the COG591000 permit. The selected acute TRC WQBEL of 0.3 mg/l, was determined using an ambient concentration of 0 mg/l and a dilution ratio of 15:1 from Table 4b of the COG591000 permit. Since the acute WQBEL is below the chronic WQBEL, 0.3 mg/l will be the chronic and acute WQBEL.

Ammonia: The Ammonia Toxicity Model (AMMTOX) is a software program designed to project the downstream effects of ammonia and the ammonia assimilative capacities available to each discharger based on upstream water quality and effluent discharges. Ammonia is present in the aqueous environment in both ionized and un-ionized forms. It is the un-ionized form which is most toxic, but the ionized form is also toxic. The proportion of total ammonia present in un-ionized form in the receiving stream is a function of the combined upstream and effluent ammonia concentrations, and the pH and temperature of the effluent and receiving stream, combined. Typically, in COG591000 certifications, ammonia WQBELs are chosen from Tables 4a and 4b, which were determined using a standardized AMMTOX model that only accounts for one discharge to the receiving water. However, in this instance, there are two facilities discharging to the same stream segment, and therefore a site-specific AMMTOX model was run to determine WQBELs. Community of Phippsburg WWTF and the Town of Yampa WWTF were modeled together for the development of ammonia WQBELs.

To develop data for the AMMTOX model, an in-stream water quality study should be conducted of the upstream receiving water conditions, particularly the pH and corresponding temperature, over a period of at least one year.

There were no pH or temperature data available for Yampa River that could be used as adequate input data for the AMMTOX model. There were no effluent temperature data available for Town of Yampa WWTF or Community of Phippsburg WWTF that could be used as adequate input data for the AMMTOX model. Therefore, the Division standard procedure is to rely on statistically-based, regionalized data for pH and temperature compiled from similar facilities and receiving waters. Effluent pH data from discharge monitoring reports were used to establish the average facility pH contributions in the AMMTOX model.

Upstream ammonia data for each month were not adequate to represent monthly ambient water quality concentrations for the AMMTOX model. Thus, the mean total ammonia concentration found in Yampa River as summarized in Table 6 was used as an applicable upstream ammonia concentration reflective of each month.

The AMMTOX model may be calibrated for a number of variables in addition to the data discussed above. The values used for the other variables in the model are listed below:

- Stream velocity = 0.3Q0.4d
- Default ammonia loss rate = 6/day
- pH amplitude was assumed to be medium
- Default times for pH maximum, temperature maximum, and time of day of occurrence
- pH rebound was set at the default value of 0.2 su per mile
- Temperature rebound was set at the default value of 0.7 degrees C per mile.

The results of the ammonia analyses for the Community of Phippsburg WWTF and Town of Yampa WWTF are presented in Table 7.

Table 7 - Chronic and Acute Ammonia WQBELs for the Community of Phippsburg WWTF												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chronic	34	35	50	46	43	47	44	44	44	46	39	32
Acute	50	50	50	50	50	50	50	50	50	50	50	50

Total Inorganic Nitrogen: A qualitative determination of reasonable potential has been made as the facility is expected to have ammonia, nitrate, and nitrite in the discharge. The selected acute TIN WQBEL of 100 mg/l, was determined using an ambient concentration of 0.5 mg/l and a dilution ratio of 15:1 (>10) from Table 5a of the COG591000 permit.

Nitrite: A monitoring requirement will be added to conduct RP analysis at the time of the next renewal.

Total Recoverable Arsenic: A qualitative determination of reasonable potential has been made due to the receiving stream's listing on Colorado's 303d list for total recoverable arsenic. The limitation is equal to the water quality standard of 0.02 μg/l due to the listing on the 303(d) list of impaired streams. This limit will be effective, following the expiration of the temporary modification (12/31/2024), on 1/1/2025.

The Water Quality Control Commission's regulations state that current conditions be maintained and existing uses protected during the duration of a temporary modification. Per Reg. 31.7(3), "the adoption of a temporary modification recognizes current conditions while providing an opportunity to resolve the uncertainty." Similarly, Regulation 31.7(3)(d) states that "In order to protect existing uses, the operative value during the time of the temporary modification will be set to represent the current condition of the waterbody." For existing discharges, the commission has further directed the division to protect the current conditions by determining limitations or other conditions "based on an assessment of the level of effluent quality reasonably achievable without requiring significant investment in facility infrastructure (e.g., based on past facility performance)." Reg. 31.9(4)(c). Therefore, consistent with WQCD Clean Water Policy 13 (Permit Implementation Method for Narrative (Current Condition) Temporary Modifications) and current division practice, the division will establish numeric limits for Total Recoverable Arsenic based on the maximum 30-day average value of the effluent, which is applicable for the duration of the arsenic temporary modification.

The facility has not collected total recoverable arsenic data, and a reporting requirement has been included until the expiration of the temporary modification.

Total Organic Carbon: Due to the addition of aluminum sulfate in the treatment process a monitoring requirement has been added for TOC because TOC (and hardness) can impact the toxicity of aluminum.

Total Recoverable Aluminum: A qualitative determination of reasonable potential has been made due to the addition of aluminum sulfate in the treatment process. Because of dilution, a monitoring requirement has been added as the dosage and expected effluent concentration are far below the calculated WQBEL.

Chloride: A qualitative determination of reasonable potential has been made due to the addition of sodium hypochlorite in the treatment process. Because of dilution, a monitoring requirement has been added as the dosage and expected effluent concentration are far below the calculated WQBEL.

Sulfate: A qualitative determination of reasonable potential has been made due to the addition of aluminum sulfate in the treatment process. Because of dilution, a monitoring requirement has been added as the dosage and expected effluent concentration are far below the calculated WQBEL.

Sulfide: A qualitative determination of reasonable potential has been made due to the addition of aluminum sulfate in the treatment process. The selected WQBEL of 0.066 mg/l is calculated in table 8a below and is implemented in the certification to ensure the proper treatment and removal process is maintained to not cause or contribute to a water quality exceedance.

Methanol: A qualitative determination of reasonable potential has been made due to the addition of MicroC in the treatment process. Because of dilution, a monitoring requirement has been added as the dosage and expected effluent concentration are far below the calculated WQBEL.

The WQBELs for total recoverable aluminum, chloride, sulfate and methanol were calculated using the mass balance equation provided in the COG591000 Fact Sheet. The resulting chronic and acute WQBELs are provided in Tables 8a and 8b below.

Table 8a - Chronic WQBELs for the Community of Phippsburg WWTF						
Parameter	***Q_1 (cfs)***	***Q_2 (cfs)***	***Q_3 (cfs)***	***M_1***	***M_3***	***M_2***
Nitrite as N (mg/l)	6.7	0.21	6.91	0	0.05	***1.6***
Al, TR (µg/l)*	6.7	0.21	6.91	0	1323	***43533***
Chloride (mg/l)	6.7	0.21	6.91	1.7	250	***8172***
Sulfate (mg/l)	6.7	0.21	6.91	54	250	***6503***
Sulfide as H2S (mg/l)	6.7	0.21	6.91	0	0.002	***0.066***
Methanol (µg/l)	6.7	0.21	6.91	0	14000	***460667***

*Total aluminum data were not available. Dissolved results were used instead.

Table 8b - Acute WQBELs for the Community of Phippsburg WWTF						
Parameter	***Q_1 (cfs)***	***Q_2 (cfs)***	***Q_3 (cfs)***	***M_1***	***M_3***	***M_2***
Al, TR (µg/l)*	3.1	0.21	3.31	0	9265	***146034***

*Total aluminum ambient data were not available. Dissolved results were used instead.

- **Antidegradation**

  Because the receiving water is reviewable, an antidegradation evaluation must occur.

  This is not a temporary discharge and therefore exclusion based on a temporary discharge cannot be granted and the AD evaluation must continue.

  The ratio of the chronic (30E3) low flow to the design flow is 304:1. Due to greater than 100:1 dilution available, the facility is exempt from further antidegradation requirements based on the dilution test.

- **Antibacksliding**

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

- **Nutrients**

  For New Domestic Wastewater Treatment Works which commenced discharge to surface water or submit a complete request for preliminary effluent limits to the Division on or after May 31, 2012, the nutrient effluent limitations in Tables 1a-1c in Part I.B.6 of the general permit shall apply.

  Because the facility commenced discharge prior to May 31, 2012 and is <1 MGD, the nutrient effluent limitations in Regulation 85 do not apply.

- **Salinity – Colorado River Basin Regulations**

  As the discharge is to the Colorado River basin, overall limits for TDS are required at either an incremental increase of 400 mg/l above the flow weighted average of the raw water supply, which may be waived in the case where the salt loading reaching the mainstem of the Colorado River is less than 1 ton per day, or 366 tons per year. Otherwise a demonstration that it is not practicable to attain the 400 mg/l limit must be performed. See Regulation 61.8(2)(l)(vi) for more information.

  Based on previous information, the 400 mg/l incremental increase, 1 ton per day or 366 tons per year criteria can be met and therefore report only requirements will be required during this permit term.

- **Per- and Polyfluoroalkyl Substances (PFAS)**

  The division has included a one-time monitoring requirement to gather information on the presence of PFAS in domestic dischargers.

  For more information on the analytical and sampling methods for monitoring and reporting of PFAS, see Part I.E.5 of General Permit COG591000.

- **Narrative 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.

- **Whole Effluent Toxicity**

  WET testing is not required because the Community of Phippsburg WWTF is not expected to receive toxic or industrial wastes. Aquatic life toxicity parameters (TRC, Ammonia) are expected to be controlled by the effluent limitations.

- **Monitoring**

  Monitoring requirements have been established in the certification 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. Because the facility will undergo major changes to its operation, the permittee is not eligible for consideration of reduced monitoring until one permit term has been completed as outlined in the WQCD policy WQP20 "Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities."

- **Biosolids Treatment and Disposal**

  Biosolids are treated in an aerobic digester. Solids are hauled by a contract company for disposal.

  1. EPA General Permit

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

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

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

- **Special Studies**
  - A PFAS screening study is included in the certification.

General Information:

- **Permit Action Fees** - The Annual Fee for this certification is $555 [Category 22, Subcategory V-A for Domestic Wastewater per CRS 25-8-502] and is invoiced every July. The initial invoice for this permit will be sent to the legal contact after the effective date of the certification.

- **Changes to the Certification -** Any changes that need to be made to the certification page – changes in outfalls, monitoring requirements, etc., must be submitted using the "Permit and Certification Modification form" available on our website: coloradowaterpermits.com, and signed by the legal contact.

- **Discharge Monitoring Report (DMR)** - forms will be mailed out within the next month. Reports must be submitted **monthly** as long as the certification is in effect. The permittee shall provide the Division with any additional monitoring data on the permitted discharge collected for entities other than the Division. This will be supplied to the Division within 48 hours of the receipt of the data by the permittee. If forms have not been received, please contact the Division at 303-692-3517.

- **Sampling Requirements -** Sampling shall occur at a point after treatment, or after the implementation of any Best Management Practices (BMPs). If BMPs or treatment are not implemented, sampling shall occur where the discharge leaves control of the permittee, and prior to entering the receiving stream or prior to discharge to land. Samples must be representative of what is entering the receiving stream.

- **Termination requirements -** This certification to discharge is effective long term, even though construction and dewatering discharge are only expected for approximately three months. For termination of permit coverage, the permittee must initiate this by sending the "CDPS Permits and Authorization Termination Form." This form is also available on our web site and must be signed by the legal contact.

- **Certification Records Information** The following information is what the Division records show for this certification.

  For any changes to Contacts – Legal, Local, Billing, or DMR – a "Notice of Change of Contacts form" must be submitted to the Division. This form is also available on our web site and must be signed by the legal contact.

Facility: Community of Phippsburg WWTF — Routt County
SIC Code

Legal Contact *Receives all legal documentation, pertaining to the permit certification. [including invoice; is contacted for any questions relating to the facility; and receives DMRs.]*

B Scott Cowman, Dir ORC 16071 — Phone number970-870-5588
Routt County Department of Environmental Health — Email: scowman@co.routt.co.us
136 6th St, Ste 201
Steamboat Springs. CO 80487

Facility Contact Contacted for general inquiries regarding the facility

B Scott Cowman, Dir ORC 16071 — Phone number: 970-870-5588
Routt County Department of Environmental Health — Email: scowman@co.routt.co.us
Approx 1/2 Mile North Of Phippsburg
Steamboat Springs, CO 80487

Billing Contact

B Scott Cowman, Dir ORC 16071 — Phone number: 970-870-5588
Routt County Department of Environmental Health — Email: scowman@co.routt.co.us
136 6th St, Ste 201
Steamboat Springs, CO 80487

DMR Contact

B Scott Cowman Dir ORC 16071 — Phone number: 970-870-5588
Routt County Department of Environmental Health — Email: scowman@co.routt.co.us
136 6th St, Ste 201
Steamboat Springs, CO 80487

- DIVISION USE ONLY

G04	Sewage Sludge/Biosolids Annual Program Reports
G09	Sewer Overflow/Bypass Event Reports
G2A	General Permit Reports [Notices of Intent to discharge] (NOIs)
G2B	Notices of Termination (NOTs)
G3A	DMRs: Regular Submission Frequency